UNIVERSITY OF SOUTHAMPTON

FACULTY OF SOCIAL AND HUMAN SCIENCES

School of Psychology

The Effectiveness of a Manualised Hypnosis Intervention in Reducing Test-Anxiety in School Aged Children: A Pilot Randomised Controlled Trial

by

Benjamin Ross Tayler

Thesis for the degree of Doctor in Educational Psychology

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ABSTRACT

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THE EFFECTIVENESS OF A MANUALISED HYPNOSIS INTERVENTION IN REDUCING TEST-ANXIETY IN SCHOOL AGED CHILDREN: A PILOT RANDOMISED CONTROLLED TRIAL

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Exams and tests are a major source of concern for many young people and the prevalence of test-anxiety is thought to be increasing (McDonald, 2001). High test-anxiety is associated with poor academic performance (Von der Embse & Hasson, 2012) and Attentional Control Theory (ACT; Eysenck, Santos, Derakshan & Calvo, 2007) provides one proposed explanation for this negative relationship. A review of the literature indicated that test-anxiety is negatively associated with attentional control, in regards to both goal-driven and stimulus-driven attentional systems. Consequently, it was proposed that attention based test-anxiety interventions may be beneficial in reducing test-anxiety. The present empirical study investigated whether a manualised hypnosis intervention, delivered by a trained member of school staff, would reduce test-anxiety and increase self-efficacy in secondary school aged children. In an exploratory manner, any effect on academic achievement was also examined. A pilot Randomised Controlled Trial (RCT) was conducted, where 24 Year 9 pupils were randomly assigned to receive three hypnosis sessions, delivered by a trained member of school staff, prior to internal exams. The results demonstrated that the intervention successfully reduced test-anxiety, had a positive but non-significant effect on self-efficacy and had no effect on academic achievement. The study offers promising evidence in support of para-professionals delivering therapeutic interventions in schools and suggests that, fundamentally, the use of hypnosis to reduce test-anxiety in young people is worthwhile.

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DECLARATION OF AUTHORSHIP

I, BENJAMIN ROSS TAYLER, declare that this thesis, entitled '**The effectiveness of a manualised hypnosis intervention in reducing test-anxiety in school aged children: A pilot randomised controlled trial'** and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission

Signed: .....

Date:.....

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This thesis is dedicated to them.

Abbreviations

ANOVA	Analysis of Variance
ACS	Attentional Control Scale
ACT	Attentional Control Theory
CDI-S	Children's Depression Inventory – Short version
CTAS	Children's Test Anxiety Scale
X^2	Chi-squared statistic
CBT	Cognitive Behavioural Therapy
CIQ	Cognitive Interference Questionnaire
α	Cronbach's alpha
DfE	Department for Education
DfES	Department for Education and Skills
DipHE	Diploma in Higher Education
EP	Educational Psychologist
ELSA	Emotional Literacy Support Assistant
F	F statistic
GCSE	General Certificate of Secondary Education
GSES	General Self-Efficacy Scale
HTA	High Test Anxiety

LOFT	Last Observation Carried Forward
LTA	Low Test Anxiety
M	Mean
M_{age}	Mean age
r	Pearson's correlation test statistic
%	Percent
PTA	Performance Test Anxiety questionnaire
p	Probability (significance of a test statistic)
PET	Processing Efficiency Theory
RCT	Randomised Controlled Trial
RTT	Reaction To Test Scale
N	Sample size
SAT	Standard Assessment Test
SD	Standard Deviation
STAIC	State-Trait Anxiety Scale
SART	Sustained Attention to Response Task
TAI	Test Anxiety Inventory
TAS	Test Anxiety Scale
TASC	Test Anxiety Scale for Children

TAI - G	Test Anxiety Inventory – German version
Ofqual	The Office of Qualifications and Examinations Regulation
T1	Time 1
T2	Time 2
t	t-test statistic
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USA	United States of America

Chapter 1: Literature review

The relationship between test-anxiety and attentional control

"*Drag your thoughts away from your troubles...by the ears, by the heels, or any other way you can manage it*."

Mark Twain

1.1 Introduction

Anxiety is a common complaint among people within with UK, with a recent longitudinal study reporting a prevalence of 7.2% in people aged between 10 and 79 years of age (Martin-Marino, Ruigómez, Wallander, Johansson & García-Rodríguez, 2010). Although the experience is typically mild and short-lived, anxiety can also be severe and chronic, causing great discomfort and a substantial reduction in quality of life (Kadam, Croft, McLeod & Hutchinson, 2001; Martin-Marino et al., 2010).

Anxiety has been defined as a future-oriented mood state associated with preparation for possible, upcoming negative events (Barlow, 2004). Therefore, anxiety is concerned more with future rather than present threats. A wide range of both environmental and cognitive factors can trigger the experience of anxiety, including an approaching test or exam.

Test-anxiety is considered to be a situation-specific anxiety state (Spielberger, Anton & Bedell, 1976) and refers to a set of physiological, behavioural, emotional, and cognitive responses to the perceived threat of failure on a test or other evaluative situation (Wren & Benson, 2004; Zeidner, 1998). Some researchers have conceptualised test-anxiety as a two part construct, consisting of two major components: Worry, which refers to negative thoughts about ability, evaluation and failure; and emotionality, which refers to how the individual perceives the physiological autonomic reactions to the test (e.g. Spielberger, 1980). More recent conceptualisations have separated test-anxiety into three components (Wren & Benson, 2004): 'thoughts', such as self-criticism and worries about performance; 'autonomic reactions', such as sweaty palms and increased heart rate; and 'off-task behaviours', such as fidgeting and looking around the room.

Exams and tests have been found to be a major source of a concern for many young people and the prevalence of test-anxiety is thought to be increasing (McDonald, 2001). Certain demographics have been associated with higher levels of test-anxiety. For example, there is evidence to suggest that test-anxiety is more common in children from lower socio-economic backgrounds and in those for whom English is not their native language (Hodge, McCormick, & Elliot, 1997). Furthermore, a study carried out in the UK indicted that ethnicity and gender may be potential risk factors, demonstrating

that students from Black and Asian backgrounds report higher levels of test-anxiety than white students, and that females tend to report higher levels than males (Putwain, 2007a).

A high level of test-anxiety has been associated with a number of negative outcomes, including low self-esteem and self-efficacy (Croyle, Weimer & Eisenman, 2012). A substantial body of literature has reported an inverse relationship between test-anxiety and academic and cognitive performance (Eum & Rice, 2011; Miesner & Maki, 2007; Chapell et al., 2005; Nyroos & Wiklund-Hörnkvist, 2011; Owens, Stevenson, Hadwin & Norgate, 2012a; Von der Embse & Hasson, 2012). This is particularly pertinent to the UK at the moment, as the current government has recently made plans to abolish General Certificate of Secondary Education (GCSE) coursework, return to a more traditional end year exam system and to make the GCSE exams more demanding (Ofqual, 2014). Given the importance of academic performance, researchers have attempted to find the potential mechanisms behind the negative relationship between test-anxiety and academic performance.

One potential explanation for anxiety's impact on academic performance lies within the role of attentional control. In 1971, Wine conducted a review of the literature and proposed "an attentional interpretation of the debilitating effects of test anxiety on task performance" (p. 99). Wine argued that test-anxious individuals become pre-occupied with themselves and have a tendency to direct their attention towards "self-evaluative worry", thus preventing them from "directing adequate attention to task-relevant variables" (p. 99). Therefore, at that time, test-anxiety was mainly thought to influence attention by directing it towards the negative thoughts about the self. However, since Wine's review, the discipline of cognitive psychology has grown, the concept of attentional control has developed and additional aspects of attention have been implicated in the relationship between test-anxiety and attention.

For the purpose of this review, 'attentional control' will refer to the conceptualisation first described by James in 1890 (2011), and later developed by Yantis (1998) and supported by Corbetta and Shulman (2002). It has been proposed that attentional control consists of two attentional systems: An active, top-down, goal-driven attentional system (i.e. individual deliberately directs, shifts or inhibits their attention) and a passive, bottom-up, stimulus driven system (i.e. individual's attention is

drawn or directed in response to the environment). Using this definition, Eysenck, Santos, Derakshan and Calvo (2007) provided a more comprehensive description of the relationship between anxiety and attentional control than Wine (1971): Attentional Control Theory (ACT).

ACT is an extension of Processing Efficiency Theory (PET; Eysenk & Calvo, 1992). PET suggests that anxiety puts a strain on cognitive resources, which, in turn, effects performance efficiency (relationship between effectiveness and effort spent). In particular, working memory (Baddeley & Hitch, 1974; Baddeley, 2000), which consists of the central executive, visuo-spatial sketchpad and phonological loop, is thought to be impacted by anxiety, according to PET. ACT provides a narrower perspective, focusing on anxiety's impact on the central executive, which is thought to be responsible for controlling and directing attention.

ACT is based on the assumption that anxiety encourages individuals to allocate attentional resources to threat-related stimuli, whether internal (e.g. worrisome thoughts) or external (e.g. threatening images). There is an additional assumption that anxiety triggers an evolutionarily strategic response to allocate attentional resources widely, enabling an individual to search for potential threats, as focusing on a single specific location or stimuli could be disadvantageous. Furthermore, ACT is concerned only with anxiety experienced within normal, non-clinical populations.

ACT proposes that anxiety disrupts the balance of two interacting and bi-directional attention systems (Corbetta & Shulman, 2002; Pashler, Johnston, & Ruthroff, 2001): Anxiety reduces the influence of the top-down, goal-directed attentional system, thus reducing one's ability to direct, shift and inhibit one's attention; and, secondly, anxiety increases the influence of the bottom-up, stimuli-driven attentional system, thus increasing one's tendency to notice and attend to both internal and external stimuli (hyper-vigilance). Anxiety is thought to disrupt attentional control particularly in regard to one's ability to direct, inhibit and shift attention, to monitor one's attentional focus and avoid distraction. Therefore, according to ACT, test-anxiety increases the chance of being distracted by unhelpful thoughts (e.g. "I'm going to fail") and environmental stimuli (e.g. overhearing someone say "exam"), and reduces an individual's ability to concentrate on helpful, on-task thoughts (e.g. what should I do first?") and behaviours (e.g. writing an answer).

Since Wine's review in 1971, the psychological literature has continued to explore the relationship between test-anxiety and attentional control. However, to the author's knowledge, no follow up review has been published. Therefore, the current review will summarise and appraise a systematically searched body of literature to examine the association between test-anxiety and attentional control.

1.2 Method

1.2.1 Search Strategy

Systematic searches were conducted in three electronic databases: Psychinfo via EBSCO (1970 – 2014) (13 articles); Web of Science via Web of Knowledge (1970 – 2014) (11 articles); Medline via Web of Knoweldge (1970 – 2014) (0 articles). The search terms included a list of keywords generated by the author and from those identified in key papers found during the literature search. Search terms included combinations of the following keywords: attentive*, attention*, distract*, hypervigilan*, focus, concentrate* AND test anxiety, test stress, exam anxiety and exam stress (see Appendix A for further details). The search process ended on 7th February 2014. Articles were initially screened using the database's filters for language, publication and year. Following this, titles and abstracts were screened according to the inclusion and exclusion criteria. Finally, full text of articles were retrieved and screened (see Appendix B for reasons for exclusions). Figure 1 illustrates the search process and results.

1.2.2. Inclusion & exclusion criteria

Studies retrieved from the systematic search were screened and subjected by the author to the inclusion and exclusion criteria illustrated in Table 1.

1.2.3. Reviewed articles

An initial screening process, using the database options provided, excluded articles based on publication (peer review only), language (English only) and year (1970 to 2013 only). Following this, a total of 487 papers remained, of which 374 articles remained after duplicates were removed. After screening articles' titles and abstracts to identify those that met the inclusion criteria, 40 articles remained. Finally, following

closer inspection of the full text, 24 were included in the review. Information was extracted about authors and year of publication, participants, country, design, measures of attentional control and test-anxiety, and relevant findings (see Appendix C).

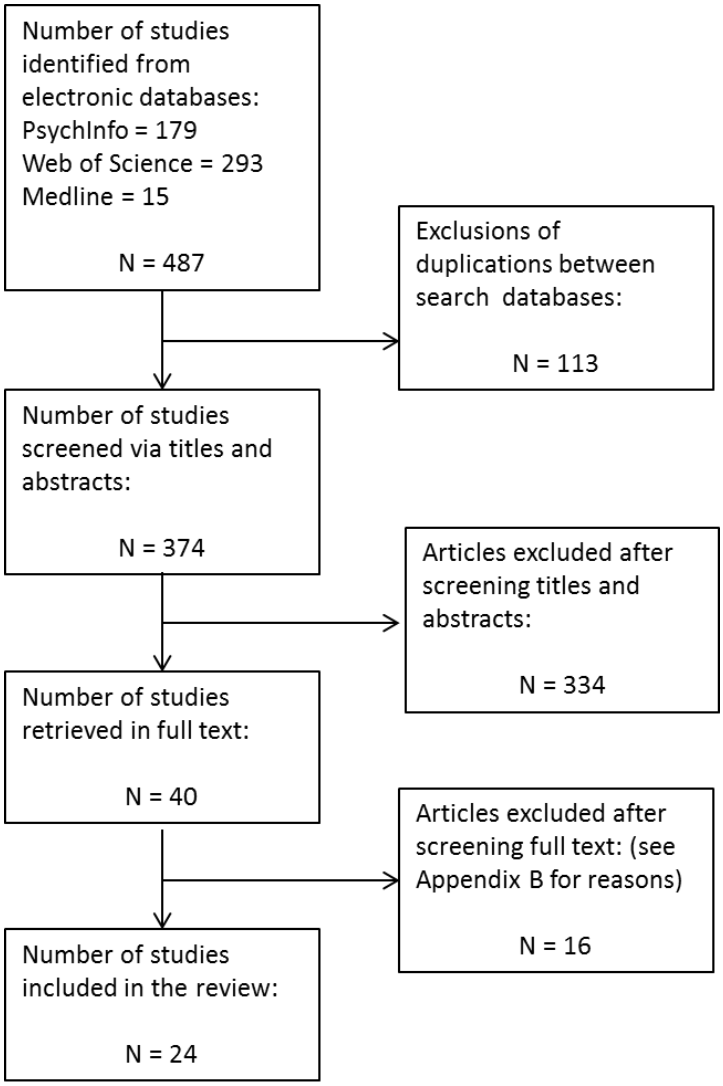

Figure 1: *Flow Chart Showing the Results of the Systematic Search Process and Application of Inclusion and Exclusion Criteria*

1.2.4. Appraisal

Appraisal and assessment of the quality of the articles was guided by relevant checklists provided on the Critical Appraisal Skills Programme's (CASP) website (http://www.casp-uk.net), an article on critiquing quantitative research (Coughlan,

Cronin, & Ryan, 2007) and some of the key concepts discussed in Sutherlan, Spiegelhalter and Burgman's (2013) article on the key features that need to be considered when interpreting scientific claims. Close inspection and consideration was given to the control of confounding variables in reported results, the validity and reliability of the measures chosen, the control of bias (including selection, performance, detection and reporting bias), sample size, control groups, randomisation, replication vs pseudo-replication, reporting of effect size and generalisability of the results.

Table 1
Table Showing Inclusion and Exclusion Criteria used for the Screening of Studies

Study Item	**Inclusion Criteria**	**Exclusion Criteria**
Outcome measures	Test-anxiety measure specifically designed to measure construct of trait test-anxiety. Attentional control measure that fits broadly with the definition of attentional control provided above: measures of distraction, focused attention, attention bias, shifting of attention, performance on tasks described as attentionally demanding, self-report measures & behavioural measures.	General anxiety measures, such as physiological measures (e.g. heart rate, cortisol), measures assessing trait anxiety, state anxiety or fear of failure. Medically related test anxiety measures (e.g. cancer test results) No measure of test-anxiety and attentional control.
Participants	All ages Currently in full-time educational setting, such as school, college or university. Non-clinical samples Any country of origin	Not in full time education (e.g. part-time education, evening classes, full time employment) Clinical diagnoses (e.g. Autistic Spectrum Disorder, Attention Deficit Hyperactivity Disorder).
Publication requirements	Published in English. Full-text access to	Published in any language other than English.

	articles published in peer-reviewed academic or professional journals.	Book chapters, abstracts, dissertations, unpublished articles, conference presentations.
Type of research	Empirical studies that have explored the relationship between test-anxiety and attentional control. Quantitative (including correlational designs, repeated measures designs & independent measures designs). In the instance where studies reported mixed methods, qualitative results were included as additional information.	Review articles Brief reports. Research investigating the effect of an intervention. Qualitative (case studies, interviews)

1.3. Review

The review begins by describing some of the key features of the 24 studies: Measures of attentional control and test-anxiety, participants and the year of study. This is to ensure the reader has some knowledge and understanding of the forms of assessment being described in the main body of the review and to illustrate that particular features are more common than others. This section will then be followed by the main body of the review.

1.3.1. Attentional control measures

Among the 24 studies in the review, attentional control was measured by a range of different approaches and tools: observed off-task behaviour (e.g. glances off-task), cognitive paradigm (Dot-probe task), self-report measures (e.g. cognitive interference questionnaire [CIQ]; Sarason & Stroops, 1978), participants' performance on an attentionally demanding task (e.g. anagrams) and the observed impact on participants (e.g. performance on a task) following a manipulation, such as an environmental distraction.

Nine studies chose to use a self-report measure of attentional control, resulting in some variation in how attentional control was conceptualised and which features of attentional control the questionnaires claimed to measure. For example, some claim to measure specifically 'attentional control' (e.g. Attentional Control Scale; ACS; Derryberry & Reed, 2002), including the shifting and focusing features of attentional control. Little is known about the psychometric properties of this relatively new scale but it has had fairly widespread use and a recent confirmatory factor analysis supported a two factor model (Olafsson et al., 2011). Some studies have measured cognitive interference (e.g. CIQ; Sarason & Stroops, 1978). The CIQ, for example, has been used extensively by a number of studies and is considered to have good construct validity (Sarason, Sarason, Keefe, Hayes & Shearin, 1986; Yee, Hsieh-Yee, Pierce, Grome & Schantz, 2004). Other questionnaires used in the studies measure the extent to which individuals are distracted. The Environmental Distractions Survey (EDS) and the Cognitive Distractions Survey (CDS), for example, were developed by Hayes and Embreston (2013) for their study. However, no analyses were carried out to assess, or reported in regard to, the psychometric properties of these two questionnaires. Finally, one study described a semi-structured questionnaire, where participants were asked to reflect on and describe their thoughts and level of concentration during an attentionally demanding task (Slapion & Carver, 1981).

Two studies measured attentional control by observing and recording the duration and frequency of participant off-tasks glances during a task (Alting & Markham, 1993; Nottleman & Hill, 1977). A large number of studies used participant performance tasks described as attentionally demanding. Examples of tasks used include anagrams (e.g. Papsdorf, Himile, McCann & Thyer, 1982) and inductive reasoning tests (e.g. Calvo, 1985). These measures are not specific measures of attentional control and so no further description will be given. Different types of 'distractors' were used in some of the studies as a manipulation of attention prior to testing participants' performance on an attentionally demanding task. Both constant distractors, such as mirrors (e.g. Rich & Woolever, 1988), and variable distractors, such as intermittent visual and auditory distractions from the experimenter (e.g. Papsdorf et al., 1982) or background emotionally neutral images and peeping noises from a nearby computer (e.g. Alting & Markham, 1993), were used as manipulations.

In one study, participants' attentional control resources were depleted (for those in the experimental condition) using a task involving watching a film clip of a woman being interviewed, while words flashed up in the corner of the screen. Participants were asked to focus on, and rate, the non-verbal behaviour of the woman in the film but to refrain from looking at the words flashing up in the corner of the screen (Bertrams et al., 2013).

One study (Hopko, Hunt & Armento, 2005) used the card version of the Stroop task, in which participants are presented with names of colours that are presented in either black or conflicting ink colour (e.g. the word *red* printed in green ink). Participants are then required to read the word or name the ink colours as quickly as possible, thus testing an individual's ability to inhibit an overlearned response to produce a novel response. A lower score would indicate poorer attentional control. The task is generally thought to be a reliable measure of selective attention and to have strong face validity (Carter, Mintun & Cohen, 1995). A limitation of this version, however, is the potential for error, given that the experimenter manually presents the cards and measures the participant's response time with a stopwatch.

Two studies measured participants' ability to focus on relevant stimuli by using an incidental learning task (Dusek, Mergler & Kermis, 1976; Ford, Pelham & Ross, 1985). Typically, over a series of 'learning' trials, this task involves displaying a set of cards, containing both a picture of an animal (central stimulus) and a household object (incidental stimulus), in front of the participant, which are then covered. To test central learning, cue cards with only a picture of an animal are presented and participants are asked to point to the location of the card with that animal in the covered display. To assess incidental learning, participants were presented with cue cards containing only a picture of an animal, or in some cases only a picture of an object, and asked to indicate which animal had been paired with which object. The central learning task is thought to require focused and selective attention, whereas performance on the incidental learning task is likely to link to one's tendency to attend to irrelevant stimuli (Druker & Hagen, 1969).

Four studies used variations of a robust computer based measure of visual attention, often referred to as the dot-probe task, originally designed by MacLeod, Mathews and Tata (1986). In Vasey, El-Hag and Daleiden's (1996) study, word pairs

(one threatening, e.g. 'failure', one neutral, e.g. 'vegetable') appeared on the screen (one above the other) and participants were asked to read the word on top, thus focusing their attention. The words disappeared, a 'dot' appeared in the either the threatening (condition 1) or the neutral word's (condition 2) previous location and participants were asked to indicate when they first noticed the dot. Attention bias scores were calculated, for each participant, by the difference in response time between the two conditions, which also indicated a bias towards threat, away from threat or no bias. In Putwain and colleagues' (Putwain, Langdale, Woods & Nicholson, 2011) later study, modifications were made, such as replacing the 'dot' with arrows and asking participants to press a corresponding directional key. In Keogh and French's two studies (Keogh, Bond, French, Richards & Davis, 2004; Keogh & French, 2001), modifications were made to measure distractibility instead of attention bias, by displaying 'distractor' words above and below a target word (e.g. 'left' or 'right') and measuring the time taken to indicate the direction of the target word (higher scores indicting higher distractibility).

1.3.2. Test-anxiety measures

Seven different test anxiety measures were used in the 24 studies included in the review, with some varying features: The measures varied in terms of size, with some measures with as little as a total of nine items (Test Anxiety Inventory – German [TAI-G]; Wacker, Jaunzeme & Jakszat, 2008) while others consist of 40 items (Reaction to Tests Scale;[RTT] Sarason, 1984); some instruments measured a single construct (Test Anxiety Scale for Children [TASC]; Sarason, Davidson, Lighthall & Waite, 1958), while others divided the construct into subscales, such as worry, tension, test-irrelevant thinking and bodily symptoms (Performance Test Anxiety Questionnaire; Cheng, Hardy & Markland, 2009); and while the majority request Likert-scale responses (e.g. Test Anxiety Inventory [TAI]; Spielberger, 1980), some of the measures ask for dichotomous responses, such as true or false (e.g. Test Anxiety Scale [TAS]; Sarson, 1978; Revised Test Anxiety Scale; RTA; Hodapp & Benson, 1997).

Although the majority of studies do not report the internal reliability of the test-anxiety measures used, all the test-anxiety measures described have been widely used in research and are considered to have acceptable construct validity and internal reliability (Cheng, Hardy & Markland, 2009; Ferrando, Varea & Lorenzo, 1999; Hodapp & Benson, 1997; Keith, Hodapp, Schermelleh-engel & Moosbrugger, 2003; Sarson, 1978;

Sarason, 1984; Spielberger, 1980). Other than in studies with correlational designs, participants were grouped by their test-anxiety scores, mostly into 'high' or 'low' test-anxiety (e.g. Putwain et al., 2011). Decisions around group allocation were based on a specific cut-off test anxiety score (e.g. Vasey et al., 1996), upper and lower percentile scores (e.g 16%; Alting & Markham, 1993) or dependent on whether test-anxiety scores were above or below the median score (e.g. Keogh & French, 2001).

1.3.3. Participants

Four studies recruited children between the ages of seven and ten years, four studies included samples between the ages of 11 and 14 years, one study focused on participants between 15 and 18 years but by far the greatest number of studies recruited undergraduates (18 studies), often psychology graduates seeking course credit. The vast majority of studies took place in the USA (15 studies). Four were carried out in the UK, two studies in Tenerife, one in Germany, one in Canada and one study's sample was Australian.

1.3.4. Year of study

Of the 24 studies, 16 were over 30 years old, only eight had been carried out in the last 20 years and just six had been published in the last decade.

1.3.5. Review of the literature

Much of the literature exploring the relationship between test-anxiety and attentional control has been designed to unpick why people with High Test Anxiety (HTA) tend to perform worse in academic assessments than individuals with Low Test Anxiety (LTA). For the purpose of this review, the literature has been divided into two broad categories, guided by Yantis' (1998) two part construct of attentional control. The first includes studies that have investigated, predominantly, the top-down, goal directed features of attentional control, such as directing, focusing and shifting attention in order to achieve a goal. The second comprises of studies that have explored more of the bottom-up, stimulus drive aspects of attentional control, such as distractibility and attention bias. The author is aware that the two attentional systems interact (Corbetta & Shulman, 2002) and so it is likely that both are involved in several of the studies

described below. However, for the purpose of a more coherent structure, the two aspects of attentional control had been separated.

1.3.5.1. Top-down, goal-directed attentional control

A large proportion of studies in the review tested participants' ability on an attentionally demanding task, with the vast majority reporting that individuals with HTA tend to perform worse than those with LTA (Calvo, Alamo & Ramos, 1990; Dusek et al., 1976; Ford et al., 1985; Hammermaster, 1989; Nottleman & Hill, 1977; Tobias, Hedi & Towle, 1974). However, some of the measures used to assess attentional control were more valid than others. Tobias et al. (1974), for example, used participant scores on a multiple-choice maths aptitude test, which is clearly a weak measure of attention, with a number of potential confounding variables. Furthermore, being a multiple choice measure, participants may have guessed or skipped questions.

Hopko and colleagues (2005) used the Stroop task as a measure of selective attention (Carter, Mintun & Cohen, 1995). The researchers were interested in measuring different types of anxiety under different types of cognitive tasks. Interestingly, the authors reported inconsistencies in the relationship between test-anxiety and performance on the different cognitive tasks. For example, test-anxiety was significantly related to performance on auditory working memory tasks (recall of digits backwards) but did not significantly predict performance on the Stroop task. This may indicate that the test-anxiety has an impact on working memory but not on one's ability to direct attention.

Hopko et al. (2005) proposed that different types of anxiety may impact less or more on different types of cognitive skills, thus arguing for a context specific explanation for the link between test-anxiety and performance on cognitive tasks. However, although the Stroop task is considered a test of selective attention, it is also considered an indicator of processing speed, cognitive flexibility and working memory (Howieson, Lezack & Loring, 2004), all of which are cognitive constructs that are thought to interact (McCabe, Roediger, McDaniel, Balota & Hambrick, 2010). Therefore, although the Stroop task has strong face validity, it is important to bear in mind the epistemological issue of whether the Stroop task, or indeed any other cognitive

ability task used by the studies in this review, is a truly valid measure of attentional control.

One explanation for Hopko et al.'s (2005) lack of significant results, in regard to the Stroop task condition, is that the participants may not have felt sufficiently threatened by the situation. Several studies report that the disruptive effect on attentionally demanding tasks only occurs when the task is perceived as threatening, like an exam. Therefore, studies often inform participants that their performance on the task will reflect their level of intelligence (Alting & Markham, 1993; Calvo, 1985; Calvo et al., 1990; Deffenbacher, 1978; Sarason, 1984) in order to induce threat. This indicates that the disruptive effect on attentional control is situation specific and that the performance deficit is not dependent on attentional resources alone, but rather the impact the anxiety invoking situation is having on the attentional resources of individuals prone to test-anxiety. However, the findings only provide a broad indication of the impact of threat on attentional control and do not highlight any particular aspect of attentional control (e.g. focus, sustain, or disengage) on which test-anxiety might be impacting.

There is some evidence to suggest that test-anxiety negatively impacts on one's ability to maintain focused attention. Nottlemann and Hill (1977), for example, found that, while working on an anagram task, children (aged 9-11 years) with HTA glanced away from the task more often than those in the LTA group. Off-task glances were also found to increase in frequency over time. These results suggest that children with HTA may find it more difficult to focus and sustain their attention to complete a task.

Interestingly, Nottlemann and Hill (1977) also reported that the HTA group glanced more at the experimenter's example board (left in the room after instructions were given) than the LTA and MTA groups. The researchers wondered whether this behaviour was indicative of a learned strategy or response; to seek support or clues in times of adversity, rather than to try and solve the problem themselves. Observations of off-task glances were recorded and analysed by the researchers. Nottlemann and Hill (1977) attempted to measure the reliability of their observations by comparing ratings and reported a 96% agreement. However, given that both researchers were aware of the hypothesis, there was a high chance of experimenter bias. Therefore, these results should be interpreted with caution.

Further evidence of an inverse relation between test-anxiety and the ability to focus attention can be found in a recent study by O'Carroll and Fisher (2013). Instead of a behavioural measure, O'Carroll and Fisher (2013) gave undergraduate students a self-report measure of attentional control which includes two subscales: focusing and shifting (ACS; Derryberry & Reed, 2002). They found that as test-anxiety increases, focused attention decreases (r = -.27, p < .05), but found no relationship between test-anxiety and attention shifting. Further analysis also revealed that attention focus significantly predicted test-anxiety in males but not in females, which was not due to differences in number, as females represented 54% of the sample. Therefore, the relationship may be affected by gender. However, the ACS measures only the participants' beliefs about their attentional control. Moreover, the Performance Test Anxiety (PTA) questionnaire, used by the researchers to measure test-anxiety, contains subscales measuring 'self-focused attention' and 'regulatory control'. Therefore, there may have been a conceptual overlap between the two constructs (test anxiety and attention control), thus reducing the possibility of not finding a significant relationship.

Nearly 40 years prior to O'Carrol and Fisher's (2013) study, Dusek et al. (1976) and Ford et al. (1985) used experimental methods to investigate the relationship between test-anxiety and the ability to focus attention, in school aged children (aged 7-12 years). In both studies, participants with HTA and LTA were asked to carry out two tasks; a central learning task and an incidental learning task. The central learning task was used to measure children's ability to focus their attention, while the incidental learning task tested the extent to which the children attended to task-irrelevant stimuli. Dusek et al.. (1976) reported that the HTA group performed, on average, worse on the central learning task but better on the incidental learning task, in comparison to the LTA group. These results suggest that children with HTA are not only less able to focus their attention, but also more likely to attend to background stimuli, indicating that test-anxious individuals may be more prone to distraction and hyper-vigilance. Dusek et al. (1976) reported that the differences in scores between HTA and LTA groups increased with age, suggesting that the detrimental effect of test-anxiety on attentional control becomes more apparent as individuals get older. However, this was only based on the fact that significant differences between groups were only found in older and not younger participants. Furthermore, Dusek et al. (1976) did not control for other potential confounding factors, such as reading ability.

Ford et al. (1985) stated that previous studies had demonstrated a positive correlation between reading ability and performance on incidental learning tasks and a negative correlation between test-anxiety and reading. Subsequently, Ford et al. (1985) replicated Dusek et al.'s (1976) study but also controlled for reading ability. Ford et al.'s (1985) findings replicated the central task results obtained by Dusek et al. (1976) but reported no significant difference between HTA and LTA groups on the incidental task. Ford et al. (1985) found a stronger negative correlation between reading ability and test anxiety in older children than in younger children, and so argued that Dusek et al.'s (1976) findings might have "been a function of a confound between test-anxiety and reading ability" (p.17). However, the correlation Ford et al. (1985) reported was not significant and failed to demonstrate that reading mediated any effects found. Furthermore, Ford et al. (1985) had a much smaller sample (38 females and no males) compared to Dusek et al.'s (1976) mixed and larger sample of 144 children. Therefore, Ford et al.'s (1985) different results may have been due to a difference in power.

Several of the studies mentioned so far have indicated that HTA reduces the ability to focus attention to achieve a goal, but none have proposed why this might be. Several studies have demonstrated that individuals prone to HTA are more likely to focus attention on themselves and experience negative, self-critical thoughts (Deffenbacher's, 1978; Carver, Peterson, Follansbee & Scheier, 1983; Slapion & Carver, 1981; Flett, Blackstein & Boase, 1987), indicating that the underlying cause might be related to a depletion of attentional resources, due to an influx of negative thoughts and self-criticism. Furthermore, some studies have reported evidence indicating that these self-critical, negative thoughts may distract and compete for one's attention, potentially depleting attentional resources by expending additional effort to re-direct attention back toward goal-oriented thoughts and behaviour (Calvo, 1985; Calvo et al., 1990; Bertrams et al., 2013).

Calvo (1985) randomly assigned college students (15 to 17 years) to an incentive or a no-incentive condition (i.e. informed they would receive money if they performed well or told nothing) and an evaluative threat or non-evaluative threat condition (i.e. informed that the test relates to intelligence or that their scores will contribute to norm data) prior to completing increasingly demanding standardised inductive reasoning tasks. Calvo (1985) found that the incentive had a negative effect on the HTA group's

performance in comparison to the LTA group, but only on the most difficult parts of the test and in the evaluative threat condition. Calvo (1985) concluded that the HTA group's attentional resources had been depleted by the effort of shifting and re-directing their attention away from negative thoughts and back towards on-task thoughts; leaving them unable to make any additional effort. Conversely, because the LTA group had fewer negative thoughts, they were thought to have spare attentional resources to draw upon, thereby enabling them to make more of an effort in the incentive condition.

Calvo's (1985) findings provide some indication that HTA depletes attentional resources. Unfortunately, it is not clear from this study whether any depletion in attentional resources was due to a high level of negative thoughts, as no specific measure was taken regarding the participants' thoughts during the task.

Bertrams et al. (2013) took a different approach to Calvo (1985) and depleted participants' resources prior to a mental arithmetic task, as described above. Undergraduate students completed the TAI-G, as a measure of test-anxiety, and a *distraction by worries* questionnaire ($\alpha = .91$), to assess the extent to which participants felt they were distracted by worry during the arithmetic task. Bertrams et al. (2013) found that distraction by worries mediated the relationship between the *worry* subscale of the TAI-G and performance on the arithmetic task only when attentional resources were depleted. When participants had not expended attentional control resources, even individuals prone to worry performed well on the task. Furthermore, unlike Calvo (1985), Bertrams et al. (2013) asked participants to complete a four item 'manipulation-check' Likert questionnaire (e.g. "How exhausted do you feel right now?"). This helped to confirm that the attentional resources of participants in the experimental (depleted) condition had been depleted to a greater extent than those in the control (non-depleted) condition ($p < .01$), although the results should be interpreted with some caution as the internal reliability for this questionnaire was poor ($\alpha = .52$). Nonetheless, these interesting findings provide evidence that individuals with HTA expel more conscious effort to redirect their thoughts from worries to more goal oriented thoughts than individuals with LTA.

Bertrams et al.'s (2013) recent study provides evidence to suggest that HTA does not necessarily equate to poor performance, so long as attentional resources remain sufficiently intact. If true, this might suggest that strengthening attentional control

could help to reduce, not only the performance deficit, but anxiety as well, by increasing one's capacity to direct and focus attention on helpful and comfortable thoughts.

In an attempt to test whether HTA impacted specifically on one's ability to focus and direct one's attention, Sarason (1984) asked students to complete an anagram task in one of three conditions: Given instructions directing their attention to key parts of the task, given reassurance or a control condition. Sarason (1984) found that the LTA control group significantly outperformed the HTA control group, but there was no significant difference between HTA and LTA groups when instructions, directing participants' attention, were given. Therefore, the instructional manipulation may have provided a form of scaffolding for the HTA group; focusing the participants' attention and thus reducing the extent to which the participants needed to expel effort to focus themselves.

In summary, the accumulating evidence suggests that attention to worrying thoughts, caused by test-anxiety, shifts attention away from goal-directed thoughts and behaviours. Consequently, it would appear that attentional resources are depleted by the additional effort test-anxious individuals expend in an attempt to re-direct and focus their attention back on-task.

1.3.5.2. Bottom-up, stimulus driven attentional control

In line with attentional control theory, many of the studies in this review provide evidence to suggest that HTA is associated with a greater tendency to attend to internal (thoughts and somatic responses) and external (environment) stimuli. Seven studies (Alting & Markham, 1993; Deffenbacher, 1978; Hamermaster, 1989; Hayes & Embreston, 2013; Papsdorf et al., 1982; Sarson, 1984; Zatz & Chassin, 1983) provide evidence to suggest that individuals with HTA are generally more distractible than their LTA peers.

Individuals with HTA in Deffenbacher's (1978) study reported greater attention to worrisome thoughts, physiological arousal and task generated interference, than those with LTA. Alting and Markham (1993), Sarason (1984), Hammermaster (1989) and Hayes and Embreston (2013) all found that HTA groups reported higher levels of cognitive distractions, such as interfering thoughts.

The most common thoughts individuals with HTA are reported to be distracted by are those concerned with self-appraisal and public perception. Flett et al. (1987), for example, found that all four subscales of the RTT questionnaire significantly correlated with self-focused attention and public self-consciousness. This indicates that people with HTA may be more likely to focus their attention on thoughts about themselves and how they are perceived by others. However, these results are based on the participants' subjective beliefs.

In two of Carver's experimental studies (Carver et al., 1983; Slapion & Carver, 1981), undergraduate students completed a task in front of a mirror, to enhance self-focused attention; an effect an earlier study had previously demonstrated (Carver & Scheier, 1978), thus providing some validity for the manipulation. They found that, in comparison to an LTA group, participants with HTA performed worse and reported a higher number of intrusive thoughts about themselves in the mirror condition. Rich and Woolever (1988) replicated the mirror manipulation from Carver's studies (Carver et al., 1983; Slapion & Carver, 1981) and, similarly, found that the HTA group's performance on an attentional task was poorer than the LTA group when tested in front of a mirror. However, to create either positive or negative expectancy, the researchers also gave non-contingent positive (80% success) or negative (80% failure) feedback on a word association task prior to the true dependent variable task. They found that the negative impact on the HTA group was greatest in the negative feedback and mirror condition. Contrastingly, in the positive feedback and mirror condition, participants in the HTA group actually did significantly better than the LTA group.

To explain these findings, Rich and Woolever (1988) argued that the decrements in performance for individuals with HTA were not due solely to a tendency to focus on themselves but rather a tendency to focus on worrisome and doubtful thoughts. Positive feedback, on the other hand, was thought to have encouraged positive expectancy effects and reduced the tendency to focus on negative, off-task thoughts. These three studies (Carver et al., 1983; Rich & Woolever, 1988; Slapion & Carver, 1981) provide adequate evidence to suggest that test-anxious individuals are prone to distraction from negative thoughts.

In a much more recent study, Hayes and Embretson (2013) used multi-level statistical modelling to analyse their data and found that the negative relationship

between test-anxiety and task performance was partially mediated by cognitive distractions. Interestingly, Hayes and Embreston (2013) also found that this indirect effect was significantly stronger at the students' home than at a university classroom ($p < .01$), due to the significantly greater number of environmental distractors, such as noise and temperature, indicating that individuals with HTA may be more distracted by external stimuli.

In addition to being susceptible to distraction from internal factors, such as worry, it has also been proposed that test-anxious individuals are prone to distraction from external factors. Papsdorf et al. (1982) asked students to concentrate on an anagram task while, in one condition, participants were exposed to a distraction, in which the experimenter carried out a set pattern of activity in the background (e.g. tapping pencil, shuffling papers, coughing). Overall, the HTA group performed worse than the LTA group, thus suggesting individuals with HTA are more likely to notice and/or be distracted by the environment. Papsdorf et al. (1982) also reported that females were affected by distraction more than boys. However, given that the researcher acted as the distractor manipulation, there is a strong risk of experimenter bias and of considerable variation in the intensity and timing of the distractor's behaviour.

Some researchers have argued that the high level of distractibility found in individuals with HTA is not a generic response to all stimuli but specific to those perceived as threatening. Alting and Markham (1993) investigated the interactive role of test-anxiety and an anxiety-provoking situation on susceptibility to distraction. Prior to completing a difficult anagram task, undergraduate students in the anxiety-provoking condition were told the task was related to intelligence and that their performance would be compared others.

In an attempt to use a more reliable and impartial distractor than that used in Papsdorf et al.'s (1982) study, Alting and Markham (1993) used an experimental computer task. The computer was placed just within view of the participant, displaying a series of visual images (i.e. graphs) and emitting an intermittent tone. Only when exposed to the computer distraction in the anxiety-provoking condition did participants in the HTA group glance off-task more often than those in the control group. This suggests that test-anxious individuals are prone to distraction but that this may only occur when the anxiety is triggered by an anxiety-invoking situation. However, like

Papsdorf et al.'s (1982) study, distractibility was measured by the experimenter's observations, which is vulnerable to bias and raises questions around the validity of the results. However, both studies have the novel benefit of providing some, although fairly limited, evidence of a propensity towards auditory distraction, which few others studies have done.

Using a more objective measure, Vasey et al. (1996) explored the relationship between distractibility, test-anxiety and the potential trigger of perceived threats using a technique that had been used previously by research on trait anxiety (the dot-probe task, see description above). Vasey et al. (1996) found that children (11-14 years) in the HTA group demonstrated, on average, a bias towards both physical (e.g. 'accident' and 'bleeding') and social (e.g. 'disliked' and 'mistake') threat words, compared to neutral words. This indicated that test-anxious individuals were hyper-vigilant, in that they scan the environment for threatening stimuli. Contrastingly, in the LTA group, there was no directional attention bias for girls but boys showed an attention bias away from threat words, thus indicating a potential gender difference in how children with LTA respond to threats. This provides strong evidence in support of the argument that HTA increases the influence of the stimulus-driven attentional control system, increasing the likelihood of noticing and fixating on perceived threats. Further support was later provided by three recent studies that used undergraduate students rather than children.

In 2011, Putwain et al. used a modified dot-probe task with undergraduate students, initially presenting three crosses (+++) in the centre of the screen as an attentional cue, rather than a word. To avoid the issue of participants being tempted to press the response button at random, instead of presenting a dot after word pairs (neutral or threat words) were presented, participants were presented with an arrow (e.g. <) and asked to press a corresponding directional button. Furthermore, Putwain et al. (2011) attempted to use a closely related test anxiety-invoking condition, in which participants were asked to complete a set of standardised cognitive assessments and told it would be an indicator of intelligence, prior to the dot-probe task. Only HTA participants in the anxiety-invoking condition demonstrated an attention bias towards threatening words, indicating that vigilance towards threat may only be present in exam-related situations.

Keogh and French (2001) modified the dot-probe task to measure the extent to which undergraduate students were distracted by different types of threat words after

being exposed to an anxiety-invoking situation. Participants were initially presented with either a single cross (+), to focus their attention on a particular location (cued), or three crosses (+++), to draw attention towards a general area (uncued). One of the crosses was then replaced by the target word 'left' or 'right' (instead of a dot or an <), participants were asked to press either the corresponding 'left' key or 'right' key and reaction times were measured.

Participants were exposed to four different presentations, varying in terms of whether they were cued or uncued and whether a distractor word was displayed with the target word or not. Distractor words were classed as threatening and unrelated to exams (e.g. dangerous), threatening and related (e.g. failure), non-threatening and related (e.g. praise) and non-threatening and unrelated (e.g. lettuce). Additionally, participants were randomly assigned to either a group that conducted an anxiety-invoking task prior to the reaction time task (count backwards from 1000), or to a control group that went straight to the reaction time task. The results indicated that participants with HTA in the anxiety-invoking condition were more susceptible to distraction from all threat words but this was only found when participants' attention was initially encouraged to focus (cued condition). These results suggest that individuals with test-anxiety are more likely to be distracted by perceived threats in anxiety-provoking situations when they are attempting to focus attention.

Keogh et al. (2004) carried out a follow up to Keogh and French's (2001) study, with a focus on the worry element of test-anxiety, and reported that worrisome thoughts moderated test-anxious individuals' susceptibility to distraction. However, they also found that individuals with HTA were more easily distracted by relevant threat stimuli (e.g. 'failure') than non-relevant threat stimuli (e.g. 'pain'), indicating the importance of relevance. Interestingly, Keogh et al. (2004) reported that, compared to the LTA group, the HTA group were less distracted by non-threatening words, particularly when they needed to search for targets (uncued condition).

It should be noted, however, that the findings from dot-probe measures may not necessarily indicate vigilance towards threat. Koster, Crombez, Verschuere and Hoower (2004) found no evidence for a facilitated detection of threatening information and proposed that the dot probe effects are "at least partially due to disengagement effects" rather than just hyper-vigilance (p. 1183). Furthermore, such results relate

predominantly to visual attention and so further research is needed to test whether the same effects occur with auditory attention.

In summary, the available literature indicates that test-anxiety creates an enhanced state of hyper-vigilance, increasing the likelihood of an individual noticing and/or being distracted by stimuli, both internal and external. Furthermore, there is also an increasing body of evidence suggesting that some stimuli, such as those perceived as both threatening and relevant to exams, are more likely to draw a test-anxious individual's attention than other stimuli, such as neutral and non-exam related stimuli.

1.4. Discussion

The aim of the review was to summarise and appraise a systematically searched body of literature to examine the association between test-anxiety and attentional control. The literature provides a strong and varied body of evidence to indicate that both aspects of attentional control (top-down and bottom-up) are associated with test-anxiety, which is in line with attentional control theory (Eysenck et al., 2007). The results suggest that, if an individual is prone to HTA, their attention is more likely to be drawn towards negative and self-critical thoughts about themselves and exam-related threats than in individuals with LTA. The literature also provides some evidence which suggests that poor attentional control may increase the likelihood of experiencing HTA, as it reduces the ability to disengage or shift attention away from threatening thoughts or stimuli and redirect attention back towards more comfortable or helpful thoughts. Efforts to disengage, shift, re-direct and focus attention are suggested to deplete attentional resources further, thus potentially creating a negative spiral in which the individual's attention becomes increasingly captivated by perceived threats while, simultaneously, more and more conscious control over the direction of their attention is lost.

Although the direction is somewhat inconsistent between studies, there is some limited empirical evidence to suggest that gender may moderate the relationship between attentional control and test anxiety (O'Carroll & Fisher, 2013; Papsdorf et al., 1982; Vasey et al., 1996). This may be related to the gender difference typically found in test-anxiety scores (Putwain, 2007a) but could also be associated gender differences

in attentional control, as recent research has demonstrated a gender difference in visual selective attention (Merritt et al., 2007).

There are some inconsistencies around whether individuals with HTA are more likely to demonstrate an attention bias towards (e.g. Putwain et al., 2011; Vasey et al., 1996) or away from threats (e.g. Nottelmann & Hill, 1977), although the majority of evidence is in favour of the former. There is still some question as to whether test-anxious individuals are more hyper-vigilant in general (e.g. Hammermaster, 1989; Papsdorf et al., 1982; Zatz & Chassin, 1983) or just towards exam related threats (e.g. Alting & Markham, 1993; Keogh & French, 2001; Keogh et al., 2004), however evidence does appear to indicate that relevant threats are more likely to draw a test-anxious individual's attention than irrelevant ones. Finally, it is still not entirely clear whether HTA is associated with an attentional attraction towards threats or a deficit in the ability to disengage attention from threats (Koster et al., 2004).

1.4.1. Limitations of studies

There was a broad range of studies within the literature available. Some studies benefited from greater ecological validity but were more subjective and were vulnerable to both error and experimenter bias (e.g. Nottlemann & Hill, 1977; Papsdorf et al., 1982). On the other hand, other studies lacked ecological validity but made up for it with more objective measures less prone to error and bias (e.g. Keogh et al., 2004; Putwain et al., 2011).

There are questions around the validity of the tasks and measures purporting to measure top-down attentional control. Many of the researchers inferred attentional control from participant performance on attentionally demanding tasks, which may, in part, involve aspects of attentional control but no firm conclusions can be made from such methods. Attentional control, particularly the top-down attentional system, is difficult to define and measure operationally (Eysenck et al., 2007). Even with tasks and measures deemed to have strong face validity, there are epistemological difficulties around the extent to which any instrument or task can measure attentional control specifically. Therefore, it is important for future research to use a range of different approaches from different perspectives.

A relative strength of the studies was that the vast majority of studies recruited participants from the same population (e.g. all undergraduates), therefore reducing the effect of some potential confounding variables. Furthermore, the majority of studies had sufficiently large sample sizes, although some studies were relatively small and underpowered (e.g. Calvo et al., 1990; Vasey et al., 1996). In an attempt to reduce selection bias, many studies randomly assigned participants to conditions, when appropriate, but it was not always clear, in the majority of articles, whether this randomisation had been concealed from participants and experimenters. All but three (Dusek et al., 1976; Nottleman & Hill, 1977; Papsdorf et al., 1982) articles failed to report double blind procedures and only two of the experimental studies (Calvo, 1985; Vasey et al., 1996) attempted to reduce experimenter bias, by issuing a set of written instructions.

Although the majority of studies reported details regarding the age, gender and recruitment of participants, there were a number that did not. For example, Alting and Markham (1993) and Tobias et al. (1974) both failed to disclose information on mean age, gender and whether the undergraduate participants were in receipt of course credit for taking part. Only two studies – most likely because they are recent – gave any indication of the ethnicity of the participants, with Hayes & Embreston (2013) providing specific percentages of ethnic groups, while O'Carroll and Fisher (2013) provided only a percentage of domestic (UK resident) and non-domestic (EU or international students) participants. Reporting these demographic characteristics may be important, given that differences in test-anxiety have been found between gender and ethnic groups (Putwain, 2007a).

The majority of studies, most likely due to the age of the study, failed to provide internal-reliability scores for the questionnaires they used. One study reported internal-reliability for some of the questionnaires used (Hayes & Embretson, 2013) and only four studies provided a cronbach's alpha score for all their questionnaires (Bertrams et al., 2013; Putwain et al., 2011; Sarason, 1984; Zatz & Chassin, 1983). Furthermore, some studies used test-anxiety questionnaires containing items, and in some cases whole subscales, designed to tap into constructs that could be construed as attentional control. For example, Hayes and Embreston (2013) used the Revised Test Anxiety Scale (RTA; Hodapp & Benson, 1997), which includes a subscale with items related to 'test-

irrelevant thinking'. Similarly, the PTA, used by O'Carroll and Fisher (2013), includes a 'self-focused attention' subscale. Therefore, the potential conceptual overlap between the two constructs (test anxiety and attentional control), when measured via such questionnaires, reduces the chances of not finding a significant relationship.

1.4.2. Suggestions for future research

Sixteen of the studies included in the review are over 30 years old. Only eight were carried out within the last 20 years and just six were carried out in the last 10 years. Within the last 30 years, a number of national and global changes have occurred, including politics, culture, communication, education, health and travel. Therefore, the context within which the majority of these studies took place was very different to that of present day.

Considering only the UK, the context of the school has changed considerably over the last 30 years, particularly in terms of the curriculum (Ofqual, 2014), inclusion (UNESCO, 1994) and addressing children and young people's emotional needs (DfES, 2003). Developing teacher and school effectiveness has played a strong role in the last ten years, in which schools have become, and are expected to be, more knowledgeable in how to support children and young people with a range of both cognitive and emotional difficulties (Hopkins & Reynolds, 2001). This raises important questions around the reliability and validity of these findings in relation to present day's children and young people's experience of test anxiety and the extent to which it might relate to attentional control. Therefore, from a contextual point of view, there is a need for more research on this subject.

The vast majority of studies in this area have used a very specific sample: White, western, psychology undergraduates. Only five studies involved children and young people under the age of 18 (Dusek et al., 1976; Ford et al., 1985; Nottleman & Hill, 1977; Vasey et al., 1996; Zatz & Chassin, 1983). Therefore, there is a need for further investigation into the relationship between attentional control and test-anxiety in younger age groups. This would be particularly valuable, as attentional control abilities are thought to be poorer in children than in adults (Davidson, Amso, Anderson & Diamond, 2006). Furthermore, Dusek et al.'s (1976) findings indicated that the gap between individuals with HTA and LTA, in terms of their ability to focus, may increase

with age. Therefore, longitudinal studies would also be of value, to further explore whether the relationship strengthens or weakens over time.

Although the majority of studies indicate an attention bias towards threats, rather than away from threats, there is some inconsistency between the studies. An evolutionary or functionist approach might explain the difference in terms of the individual's coping style and typical response to anxiety: Focusing on the threat could be conceived as a fight response or a freeze response; whereas avoiding threats might constitute a flight response. ACT (Eysenck et al., 2007) suggests that anxiety would increase the likelihood of individuals attending to and fixating on the perceived threat, so that they have a greater chance of resolving the problem. However, from a social-learning (Bandura, 1977) and Vygotskian (1978) perspective, as in Nottleman and Hill's (1977) study, some individuals may learn to look to others for help when they encounter academic related anxiety, causing them to direct their attention away from the threat of a test. Similarly, from a behaviourist view (Skinner, 1938), some individuals may experience some form of positive reinforcement, such as a brief sense of escapism, from directing one's attention away from a threatening stimulus or thought. None of the studies measured coping styles and so it is possible that, in some studies, samples may have been prone to a particular coping style. Therefore, it would be valuable to investigate why it might be that some studies find that individuals with HTA are more likely to focus on threats while others are more likely to shift their attention away from threats.

The articles in this review measured off-task thoughts and behaviour with either questionnaires or via behavioural observation. A more experimental approach, which may help to add to the literature, while minimising experimenter bias and the bias of retrospective self-report measures, is to use the sustained attention to response (SART) task. The SART is a go/no-go task requiring participants to respond or not respond to a target when prompted by a probe. Some studies have adapted this task to prompt participants to report whether their thoughts were on- or off-task (McVay and Kane, 2009). To the author's knowledge, this task is yet to be carried out to assess the relationship between test anxiety and attentional control. Moreover, the vast majority of the studies in the present review measured the visual and thinking aspects of attentional

control. Therefore, it would be interesting to further explore whether similar effects occur in auditory and tactile measures of attention.

1.4.3. Limitations of review

In the present review, there are several limitations worthy of attention. Firstly, there was a risk of publication bias in the review, as only studies from peer reviewed journals were included, thus omitting the articles from the 'grey literature' (e.g. dissertations), which may have provided contrary data, non-significant results or additionally useful information. Similarly, the decision to focus only on quantitative studies restricted the depth of the literature available. Finally, having included articles only written in English, studies with different findings or more ethnically diverse samples may have been missed.

The search terms were conceptualised and chosen solely by the author and the selection of articles and the appraisal of articles were all conducted by the author only. The concept of attentional control was left broad, which enabled the author to critique a broader range of literature but may have resulted in forming too wide a concept that combined similar but functionally different variables.

To ensure the construct being described and discussed was clear, the present review focused on specific definitions of anxiety and test-anxiety. However, it could be argued that Barlow's (2005) definition of anxiety is somewhat narrow. It excludes the more primitive aspects of anxiety, such as flight, fight and freezing, as Barlow (2005) refers to these responses as 'fear', rather than anxiety. Consideration of studies using broader definitions of anxiety, such as those including physiological responses, may have provided different information and conclusions. Equally, focusing only on psychological retrospective self-report measures of test-anxiety provided greater clarity over the actual construct being discussed, but studies within the literature that has used an alternative definition may have been missed. For example, studies measuring the physiological responses to anxiety, such as heart rate and cortisol levels, may have provided valuable information.

It should be noted that there is still some confusion and lack of clarity around the construct of test-anxiety. For example, Putwain (2007b) described how there is a lack

of precision in the terminology used within the test-anxiety literature, stating that 'stress', 'anxiety' and 'worry' are used interchangeably and that there is often no clear distinction between academic and exam anxiety. Putwain (2007b) also argues that the term 'stress' has been used in reference to both the stimuli and subjective experience of the participant. Therefore, there is a need for future studies in this area to clearly define their terms and constructs.

1.4.4. Implications

There are many potential implications of this review for practice. The themes drawn from the literature provide some support for environmental modifications and the development of interventions designed to maximise attentional control and reduce test-anxiety. In relation to environmental modifications, it seems important to ensure that the number of potential distractions is kept to a minimum, during an exam but also during revision at home and in lessons. Reducing the number of relevant threatening stimuli, such as references to the exam, would be difficult and impractical to avoid. However, systematic desensitisation towards these perceived threats may be an effective alternative (Egbochuku & Obodo, 2005). Furthermore, guiding and directing the attention of individuals with HTA towards helpful stimuli may also help to counteract the deficit in performance during revision and exams (Sarason, 1984).

Several attention based interventions, designed to teach and develop skills, have shown promise as a way of reducing anxiety. For example, a recent meta-analysis concluded that attention bias modification treatment may be a new and effective approach to helping individuals with anxiety (Hakamata et al., 2010). In regards to test-anxiety, mindfulness training, an intervention shown to increase attentional control (Chambers, Lo & Allen, 2008), has demonstrated positive results (Napoli, Krech & Holley, 2005). In addition, hypnosis, an intervention thought to place individuals into a "state of heightened self-awareness and focused attention, in which critical faculties are reduced", (Liossi, Kuttner, Wood, & Zeltzer, 2013, p. 560), may be an effective intervention for focusing attention (Raz, Marinoff, Zephrani, Schweizer & Posner,2004; Raz, Fan, & Posner, 2005; Raz, Kirsch, Pollard, & Nitkin-Kaner, 2006) and reducing test-anxiety (Baker, Ainsworth, Torgerson & Torgerson, 2009; Ainsworth et al., 2010).

Some of the literature in the review indicated that, during a test, the attentional control of individuals with HTA may reduce over time and that that this may be due to the gradual depletion of attentional resources. According to Ofqual (2014), there will be an "increase in the minimum written exam assessment time for new GCSEs (to reflect the reduction in non-exam assessment)" (p. 13). Therefore, educators and Educational Psychologists (EPs) may need to be mindful of this when planning for young people and should consider providing regular short breaks for some individuals, such as those with attention difficulties (Daley & Birchwood, 2010).

1.4.5. Conclusion

The present review has examined the association between test-anxiety and attentional control, by examining a systematically searched body of literature, and provided a summary of the key findings. The literature indicates that test-anxiety is negatively associated with attentional control, in regards to both goal-driven and stimulus-driven attentional systems. Consequently, several educational implications and recommendations have been made; including the suggestion that environmental modifications and attention based test-anxiety interventions may be effective in reducing test-anxiety.

Empirical study

The effectiveness of a manualised hypnosis intervention in reducing test-anxiety in school aged children: A pilot randomised controlled trial.

2.1. Introduction

Anxiety is a "future-oriented mood state in which one is ready or prepared to attempt to cope with upcoming negative events." (Barlow, 2004; p. 64). Anxiety disorders are thought to be the most common forms of psychopathology in children and adolescents (Fergusson, Horwood, & Lynskey, 1993) and, in 2005, a meta-analysis review reported that around 10% of participants across studies aged 2-21 years old met the criteria for an anxiety disorder (Costello, Egger, Copeland, Erkanli, & Angold, 2005).

Anxiety can be triggered by a variety of different factors, both environmental and cognitive. One such factor is an approaching exam or test. Test-anxiety has been defined as a situation-specific anxiety state (Spielberger, Anton & Bedell, 1976), which Zeidner (1998) refers to as 'the individual's disposition to react with extensive worry, intrusive thoughts, mental disorganisation, tension, and physiological arousal when exposed to evaluative situations' (p. 18). More recently, Wren and Benson (2004) proposed that test-anxiety in children and young people consisted of three main components: 'thoughts', such as self-criticism and worries about performance; 'autonomic reactions', such as sweaty palms and increased heart rate; and 'off-task behaviours', such as fidgeting and looking around the room.

The majority of test-anxiety research has been carried out in western countries but recent cross-cultural research has indicated that, although there is some variation, test-anxiety is considered a universal construct, affecting many different cultures (Bodas, Ollendick & Sovani, 2008; Lowe & Ang, 2012). Although test-anxiety is thought to operate on a continuum, rather than being present or not, it has been reported that the extent to which tests and exams are causing anxiety for children and young people is rising (McDonald, 2001).

In the UK, female students, those from Asian or Black ethnic backgrounds and individuals of lower socio-economic status are more likely to experience test-anxiety (Putwain, 2007a). Putwain (2008a; 2009) proposed that young people experience anxiety during GCSE exams in the UK because of the potential consequences (educational and occupational), the relationship between exam-grade and self-esteem,

judgement from others and the repeated message from teachers that exams are important.

Test anxiety has been associated with a number of variables. For example, a relationship has been found, in an inverse direction, between test-anxiety and general self-efficacy (Onyeizugbo, 2010; Croyle, Weimer & Eisenman, 2012). This relationship could be explained by Zeidner and Matthews' (2005) self-referent executive function theory, which proposes that the perceived situational threat of an exam encourages the individual to reflect on previous experiences of perceived failure and negative self-beliefs about their ability to cope.

Test-anxiety has also been found to have a detrimental effect on academic performance (Eum & Rice, 2010; Miesner & Maki, 2007; Owens, Stevenson, Hadwin & Norgate, 2012a; von der Embse & Hasson, 2012), including for those in primary school (Nyroos & Wiklund-Hörnkvist, 2011). Explanations for this effect tend to be based on Eysenck and Calvo's (1992) *Processing Efficiency Theory* or the more recent, updated version of the theory, *Attentional Control Theory* (ACT; Eysenck, Santos, Derakshan & Calvo, 2007). These theories propose that high levels of anxiety increase the tendency for an individual to notice and fixate on perceived threats, while simultaneously reducing an individual's ability to process information and direct, shift and disengage attention effectively to achieve a goal. Therefore, according to ACT, individuals experiencing high levels of test-anxiety may become distracted by unhelpful thoughts (e.g. "I'm going to fail") and environmental stimuli, and, compared to less test-anxious individuals, less able to focus their attention on helpful on-task thoughts and behaviours.

Many studies have provided evidence in support of ACT, demonstrating that individuals with HTA have an attention bias towards threat (Putwain et al., 2011), are more likely to be distracted by negative, self-critical thoughts and tend to perform significantly worse than their low test-anxious peers when attentional resources are depleted (Bertrams et al., 2013; Calvo, 1983; Carver et al., 1985; O'Carroll & Fisher, 2013).

In recent years, there has been an increasing interest in test-anxiety in the UK. Putwain (2008b) suggests that this may be related to two political changes: using

students' test performance (e.g. Year 6 SATs) as a measure of school quality and placing greater emphasis on the global psychological well-being of children (DfES, 2001; 2003). The current UK government has now placed greater emphasis on academic achievement (DfE, 2010; Education Act, 2011) and plans to phase out coursework to concentrate on traditional end of year exams, which will also be made more demanding (Ofqual, 2014). Therefore, it is important for schools, researchers and EPs to consider the impact these changes will have on the children and young people's well-being and academic performance, and to develop and evaluate interventions that aim to reduce test-anxiety (von der Embse & Hasson, 2012; Weems et al., 2010).

Von der Embse, Barterian and Segool's (2013) recent systematic review identified several interventions that have demonstrated some promise in preventing or reducing test-anxiety. The interventions described in the review were based on systematic desensitisation, Cognitive-Behavioural Therapy (CBT), academic skill building, muscle relaxation and bio-feedback. However, some of these interventions can be expensive, time consuming and, with the exception of CBT based interventions, tend to focus on general anxiety, cognitive components or emotional components of test-anxiety. An increasing body of evidence suggests that the relationship between emotion and cognition is complex, bi-directional and that both cognitive and emotional systems need to be recruited in order to effectively change perceptions (Haidt, 2012; Kahneman, 2011). There is an alternative option to those mentioned above. Hypnosis may recruit both cognitive and emotional systems, can be applied specifically to test-anxiety and has the added benefit of being short and cost-effective (Gruzelier, 1998; Heap & Dryden, 2008).

Hypnosis is "a psychological state of heightened awareness and focused attention, in which critical faculties are reduced and susceptibility and receptiveness to ideas is greatly enhanced" (Liossi, Kuttner, Wood & Zeltzer, 2013; p. 560). Typically, following a hypnotic induction in which an extended initial suggestion is made for the individual to use their imagination and relax (although relaxation is not necessary), further suggestions are made to instigate a change. Such changes may relate to the individual's experience and perception of a situation (e.g., sensations, emotions or thoughts associated with a situation) or to the individual's behavioural response to a given situation (Green, Barabasz, Barrett & Montgomery, 2005).

The precise mechanisms behind hypnosis are still not fully understood. However, hypnosis is thought to help reduce anxiety by inducing a psychological state that encourages focused attention and enables the individual to set aside rational thinking and adopt a less critical, more open-minded state, which increases a susceptibility to suggestions and alternative interpretations relating to the anxiety-invoking stimuli (Heap & Dryden, 2008; Liossi, Kuttner, Wood & Zeltzer, 2013). Raz and colleagues (Raz, Marinoff, Zephrani, Schweizer & Posner, 2004; Raz, Fan & Posner, 2005; Raz, Kirsch, Pollard & Nitkin-Kaner, 2006) have published several articles demonstrating the effect of hypnotic suggestion on attention and, as stated in Chapter 1 in the literature review above, there is strong evidence to suggest that test-anxiety is linked to attentional control. Therefore, it seems reasonable to argue, as Spiegel (2013) has, that hypnosis may help to reduce anxiety by shifting focused attention away from negative thoughts and the somatic sensations of discomfort and anxiety.

Hypnosis may also help to increase self-efficacy and improve academic performance. Wark's (2011) literature review outlined several studies, carried out between 1954 and 2006, that have demonstrated an increase in academic performance as a result of hypnotic suggestion. Explanations for this have been related to encouraging a higher state of attentiveness and concentration (Wark, 2011). However, there are still questions around whether this effect may be facilitated, in part, by an increased self-efficacy, induced by the hypnotic suggestion. In addition to being negatively correlated with test-anxiety (Onyeizugbo, 2010; Croyle, Weimer & Eisenman, 2012) and positively associated with academic performance (Richardson, Abrahama & Bond, 2012), research has shown that self-efficacy may facilitate the effect of hypnosis on performance in physical activity (Barker, Jones & Greenlees, 2010; Barker, Jones & Greenlees, 2013). Therefore, hypnosis may help to reduce test-anxiety, increase self-efficacy and indirectly improve academic performance.

Hammond's (2010) review of hypnosis interventions found that hypnosis is a particularly effective technique for alleviating situation-specific state anxiety, such as test-anxiety, suggesting that it is a 'rapid, cost-effective, non-addictive and safe alternative to medication' (Hammond, 2010, p. 263). Hypnosis is an intervention tool that has shown promise in combatting test-anxiety in university (Ainsworth et al., 2010; Stanton, 1993), sixth-from (Hart & Hart, 1996) and high/secondary school populations

(Brown, Summers, Coffman & Riddell, 1996), with one study demonstrating positive effects up to 6 months later (Stanton, 1994). In most cases, researchers report a positive change in participants' experience of test-anxiety after delivering two to three one hour 'doses' of hypnosis to small groups of individuals. However, several studies report qualitative findings that cannot be generalised (e.g. Brown et al., 1996). Moreover, all known studies investigating the effect of hypnosis on test-anxiety used a small sample size (e.g. Ainsworth et al., 2010) and some did not include a control group (e.g. Hart & Hart, 1996). Very few studies have used a Randomised Controlled Trial (RCT) design (Baker et al., 2009) and, even when participants have been randomised, the process of randomisation has not been made clear (e.g. Stanton, 1994). In all of these studies, the researcher delivered the intervention, thus making the investigations vulnerable to experimenter bias. Furthermore, the present author could not find one study that provided the hypnosis script, thus making it impossible to fully replicate the study.

Reviews on the effectiveness of using hypnosis as an intervention for test-anxiety have called for further research (Hammond, 2010; Milling & Constantino, 2000), with a particular emphasis on conducting RCTs and assessing the impact on academic outcomes (Baker et al., 2009). Furthermore, there is clearly a need to conduct these investigations with school aged samples within the UK, as there is very little data available on this population's level of test-anxiety (Putwain, 2009; Putwain, Connors, & Symes, 2010).

In previous studies investigating the effect of hypnosis on test-anxiety, the intervention has been administered directly by the researcher. However, in some areas of the country, teaching assistants, known as ELSAs (Emotional Literacy Support Assistants), are being trained and supervised by EPs to deliver therapeutic support to individuals and small targeted groups (Burton, 2008), with positive results (Bravery & Harris, 2009; Burton, Trail & Norgate, 2009). Therefore, therapeutic interventions and support in schools are being delivered, increasingly, by para-professionals; a term defined as staff who are not qualified mental health professionals (Boer, Wiersma, Russo & Bosch, 2005, p.3).

School staff are being trained to deliver a range of different therapeutic interventions in school (Corrieri et al., 2013; O'Leary-Barrett, Mackie, Castellanos-Ryan, Al-Khudhairy & Conrod, 2010; Fisak, Richard & Mann, 2011). Neil and

Christensen (2009) reviewed a number of studies investigating various school-based interventions, including relaxation (Hiebert, Kirby, & Jaknavorian, 1989) and the communication of emotion (Garaigordobil, 2004). Interventions described as the most effective were also the most common, namely CBT based interventions that have been successful in enhancing children's wellbeing and reducing depression and anxiety, such as the FRIENDS programme (Barrett & Ryan, 2004). Two of the ten studies (Bradley et al., 2007; Gregor, 2005) discussed in Von der Embse et al.'s (2010) review evaluated the effectiveness of teacher administered interventions for test-anxiety (predominantly concerned with developing study skills and emotional management skills) and reported positive results.

Programs delivered by school staff facilitators have been considered, comparably, not as effective as when delivered by mental health professionals. Nonetheless, Neil and Christinensen (2009) still considered para-professional led interventions as effective and worthy of implementation, given the low cost and the wide number of children they could reach. However, many of the school-based interventions are time consuming, often taking at least six weeks to implement. Furthermore, there are concerns around fidelity and the skills of the facilitator, thus warranting further investigation (Corrieri et al., 2013).

The present study's primary aim was to investigate whether a manualised hypnosis intervention, delivered by a trained member of school staff (ELSA), would reduce test-anxiety in secondary school aged children. The secondary aim was to explore the impact the intervention might have on general self-efficacy. It was hypothesised that the experimental group would show a significantly greater reduction in test-anxiety scores and a significantly greater increase in self-efficacy scores than those of the waiting list control group. An additional aim was to examine, in an exploratory manner, any effects on academic achievement.

2.2. Method

The present study was the quantitative part of a larger mixed methods research project that aimed to conduct a pragmatic and ecologically valid investigation. The quantitative and the qualitative studies recruited the same participants in the same way. The qualitative aspect of the research project was carried out by Patterson (2014), who

interviewed the facilitator and participants from the present study's experimental group in order to gain an understanding of their experience of the intervention.

2.2.1. Participants

An opportunity sampling method was used to recruit participants from one local state, mixed secondary school in the south of England, following Head Teacher agreement to take part in the study. An outline of the recruitment process is outlined in Figure 2.

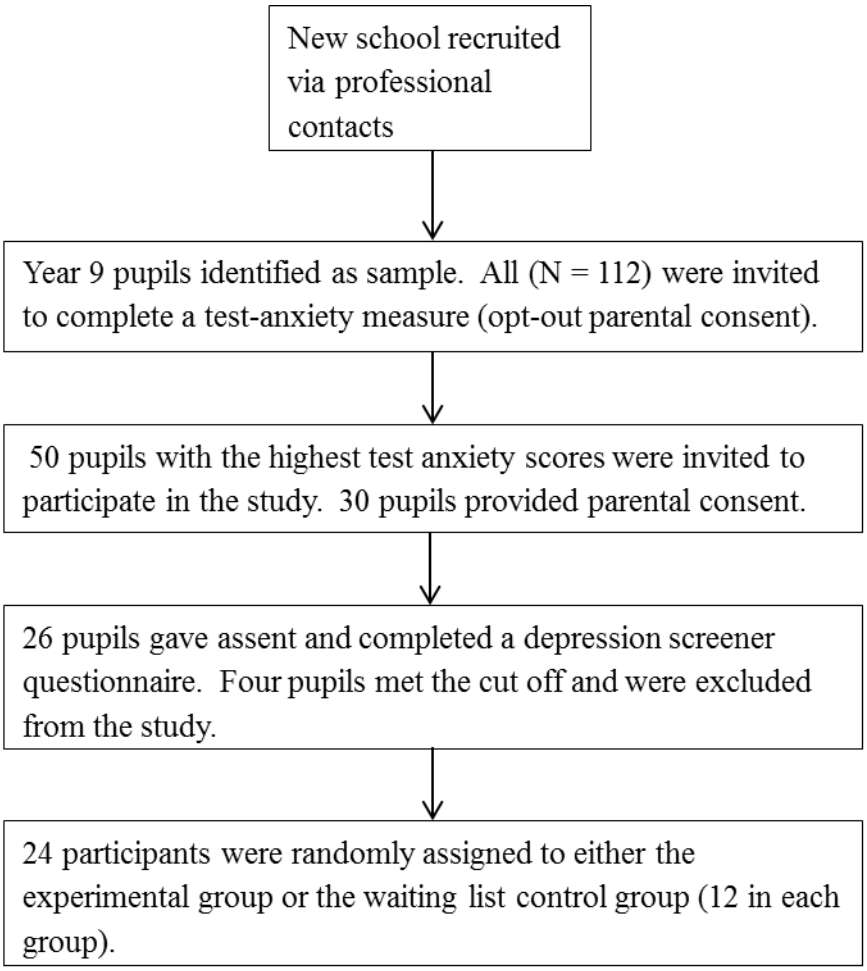

Figure 2. *Flow Diagram Illustrating Recruitment Process.*

An 'Information for Schools' briefing form (Appendix D) was sent out to the University of Southampton's approved research partner schools, explaining the details of the project, and a secondary school was recruited. Before the end of the summer term (2013), it was agreed that Year 10 pupils (14 to 15 years of age), sitting a module

of their GCSE English exam in the following December, would be the chosen sample. Unfortunately, a problem arose over the summer term, following a change in senior management in the school. The newly appointed member of senior staff given responsibility for managing the project expressed discomfort about using hypnosis as an intervention, particularly as an 'unqualified' member of staff would be delivering the intervention. Subsequently, the school withdrew from the research at the beginning of the autumn term.

Fortunately, after a considerable amount of effort, the researchers managed to recruit another school through professional networks but some compromises had to be made. Participants embarking on high stakes exams, such as GCSEs, would have been preferable; as research has shown that evaluative threat may influence the impact test-anxiety can have on academic performance (Hancock, 2001). Unfortunately, the only year group at the school taking exams within an appropriate time-frame were Year 9, who were sitting internal exams in the following January (2014).

In the first stage of recruitment, all 112 (56 male) Year 9 pupils (M_{age} = 13 years, 8 months; range = 13 years, 4 months – 14 years, 3 months) were invited to complete the Children's Test Anxiety Scale (CTAS; Wren & Benson, 2004), after obtaining parental consent via an information letter and opt-out consent slip (Appendix D). At this initial stage of the recruitment process, pupils were only being invited to be screened for test-anxiety and were not being invited to take part in the research trial. Pupils were given the option to opt-out of the screening process by simply not completing the CTAS.

In an effort to target the most anxious pupils, the second stage of the recruitment process involved inviting 50 pupils with the highest test-anxiety scores to participate in the research trial. Parental consent was gained via an additional information letter and an opt-in consent slip (Appendix D), which provided greater detail about the research trial and acted as an invitation to participate in the trial. Of these 50 pupils, 30 provided parental consent and signed assent forms to participate in the study. The inclusion and exclusion criteria are displayed in Table 2. The information letter advised that pupils with a medical diagnosis of, or in the receipt of any form of treatment for, any psychopathological disorder (e.g. anxiety disorders, mood disorders) should not participate in the study. This is to ensure the intervention did not interfere with their

treatment (Huynh, Vandvik & Diseth, 2008) and to ensure the ELSA, delivering the intervention, would not be expected to work with a level of severity greater than that at which she was trained. Pupils were excluded if teachers felt they were unlikely to be able to access the intervention (N = 4) due to language difficulties, learning difficulties or vulnerability, as they may not have been able to follow the hypnosis intervention (Coelho, Canter & Ernst, 2007).

The 30 pupils with parent consent were asked to complete a set of pre-intervention questionnaires, after having been given an information letter about the study and a verbal explanation. Pupils were given an option to opt in by completing the questionnaires. At this stage, pupils were screened for high depression scores, for the same reasons highlighted above and to reduce the chance of confounding variables. Four pupils scoring higher than the Children's Depression Inventory's (CDI) suggested cut off (T score > .65; Kovacs, 1992) were excluded from the study. Following identification of pupils with high depression scores, the School's Special Educational Needs Co-ordinator was informed, who then contacted the relevant parents so that appropriate support could be put in place. Two pupils were absent during the pre-questionnaire phase and so were also excluded from the study. Of the remaining 24 pupils, twelve (seven males; M_{age} = 13 years, 8 months) were randomly assigned to the intervention group and twelve (three males; M_{age} = 13 years, 9 months) were randomly assigned to the control group. Finally, prior to randomisation, all 24 pupils were given a presentation (Appendix H) about the research trial and an opportunity to ask questions and opt out.

Table 2
Table Showing Participant Recruitment Inclusion and Exclusion Criteria

Inclusion Criteria	**Exclusion Criteria**
Year 9 age group	Score on the CDI-S (Kovacs, 1992) above cut-off (T > .65)
High CTAS (Wren & Benson, 2004) score (within top 50 scores)	Teacher thought the pupil would not be able to access the intervention due to social communication or learning difficulties
	Any diagnosis, or in receipt of any treatment for, a psychopathological

disorder

2.2.2. Design

A pilot randomised controlled trial was employed to assess the effect of the hypnosis intervention. The group (experimental vs. waiting list control) served as the between-group variable and the two time points of measuring outcomes (pre-intervention [T1] and post-intervention [T2]) served as the within-groups variable. The dependent variables were the self-report test-anxiety scores, participants' academic performance and self-efficacy scores. The participants were randomised, via an online random number generator (http://www.randomizer.org), 1:1 to one of the two groups (experimental or waiting list control). The experimental group received the hypnosis intervention and the waiting list control group continued their education as usual (received no additional input). Confounding variables, such as the participants' depression, trait-anxiety and state-anxiety were controlled for by using questionnaire measures.

In line with a similar study by Koegh, Bond and Flaxman (2006), a decision was made not to run an experimental control/'placebo' group due to ethical and pragmatic reasons. It was felt that it would be unethical to withdraw pupils from lessons in order to place them in an intervention that is not expected to be helpful. Furthermore, this would have placed further demands on the school to make a room and member of staff available. The author acknowledges that, while this methodology was not ideal, it was nonetheless ethical and pragmatic.

Although Baker et al. (2009) recommend screening participants for hypnotic susceptibility, the majority of clinical samples are considered to be sufficiently susceptible to hypnosis (Montgomery, David, Winkel, Silverstein, & Bovbjerg, 2002). Therefore, it was felt unnecessary to place further demands on participants by asking them to undergo a 70 minute susceptibility measure (e.g. *Harvard Group Scale of Hypnotic Susceptibility, Form A,* Shor & Orne, 1961).

2.2.3. Measures and Instruments

2.2.3.1. Children's Test Anxiety Scale **(CTAS; Wren & Benson, 2004).** This 30-item, self-report questionnaire was used to measure test-anxiety. The questionnaire

invites participants to respond to statements on a four-point scale (almost never–almost always) that are preceded with the phrase, 'while I am taking tests…'. There are three subscales: thoughts (e.g., "I wonder if my answers are right"), off-task behaviours (e.g., "I look around the room") and autonomic reactions (e.g., "I feel nervous"). Adequate reliability and validity has been demonstrated by Wren and Benson (2004) and it has recently been used with 13 year old pupils in England (Roughan & Hadwin, 2011). In the present study, the reliability coefficients were excellent for the total scale ($\alpha = 0.94$) and at least good for each of the subscales ($\alpha \geq 0.8$).

2.2.3.2. General Self-Efficacy Scale **(GSES; Schwarzer & Jerusalem, 1995).** This ten item self-report questionnaire was used to measure self-efficacy. Participants respond to statements (such as, 'I am certain that I can accomplish my goals') on a four-point scale (not at all true–exactly true). The GSES has been developed for ages from 12 years and above and has high international construct validity (Scholz, Dona, Sud & Schwarzer, 2002). This measure has also been used by previous studies that have found significant negative correlations between test-anxiety and self-efficacy (Croyle et al., 2012). In the present study, the reliability coefficient was good ($\alpha = 0.88$). However, it should be noted that teachers commented on how they needed to help several pupils understand some of the phrases, such as 'when someone opposes me…' and 'thanks to my resourcefulness…'. Therefore, the reliability rating may be inaccurate.

2.2.3.3. State-Trait Anxiety Inventory for Children **(STAIC; Spielberger, 1973).** This is a 40 item measure of both state and trait anxiety. The trait scale contains 20 items that measure how the participant feels 'generally'. The participant is asked to rate, on a three-point scale (hardly ever - often), the frequency with which they experience 20 different features of anxiety (e.g., "I am scared", "I feel troubled"). The state scale is a 20-item measure that asks participants to rate how they feel at the moment of completing the scale (e.g. 'I feel…calm') by marking their response on a three-point scale (e.g. 'not calm' – 'very calm'). In the present study, the reliability coefficients were all good ($\alpha \geq 0.92$).

2.2.3.4. Children's Depression Inventory – Short version **(CDI-S; Kovacs, 1992).** This is a ten item quick self-rating scale for measuring symptoms of depression in children between 7 and 17 years of age. The participant is asked to mark one of three possible statements that best describes their perception of each of the ten different items

(e.g. 'I hate myself', 'I do not like myself' or 'I like myself'). The CDI-S is considered to be as sensitive as the Children's Depression Inventory (CDI; Allgaier et al., 2012). In the present study, reliability coefficient was good ($\alpha = 0.89$).

2.2.3.5. Predicted and actual English and maths grades for internal Year 9 exams. Academic performance was measured by the participants' predicted grades and actual grades for the internal English and maths exams. Predicted grades were generated and provided by each participant's teacher, based on the grades received for classwork, homework, in-class tests and end of term tests for the first term of Year 9. The teachers do not typically predict the grades for these exams and the author acknowledges the questionable validity of predicted grades (Fienberg & Shapiro, 2009) but felt this decision was more ethical than asking participants to sit a set of pre-exams.

2.2.3.6. Facilitator fidelity measure. Corrieri et al. (2013) commented on the variation in implementation fidelity of school-based facilitators that deliver interventions in school. Therefore, basic fidelity measures were kept. At the end of each session, the facilitator was asked to complete a brief seven item questionnaire (Appendix E) that consists of statements, preceded with the phrase 'During the sessions…', that refer to the fidelity of the intervention delivery, such as 'I read out the script exactly'. The questions were related to the environment (e.g. distractions), facilitator delivery (e.g. tone of voice) and pupil behaviour (e.g. following instructions).

2.2.3.7. Participant fidelity measure. To ensure the study did not place too great a demand on participants, and to maintain a pragmatic process, the fidelity measures were discussed and agreed jointly with the facilitator and Head of Year 9. After the exam, participants were asked to complete a brief four item questionnaire (Appendix F) that asked participants to rate the extent to which they applied the hypnosis techniques by marking one of three possible statements (e.g. 'I have practiced a few times').

2.2.3.8. Hypnosis manual. The hypnosis manual (see Appendix G) was created by the researchers with support from Dr. Christina Liossi; a health psychologist who is qualified and experienced in the use of clinical hypnosis. The hypnotic suggestions were adapted from, and guided by, scripts and suggestions from the *Handbook of Hypnotic Suggestions and Metaphors* (Hammond, 1990): *Progressive Relaxation Induction or Deepening Technique* (Hammond, 1990, p.156); *Suggestions for Studying,*

Concentration and Test Anxiety (Garver, 1990, p. 445); *Suggestions for Concentration, Studying and Overcoming Test Anxiety* (Pelletier, p. 460); and *Suggestions for Examination Phobia* (Waxman, 1990, p. 461). The manual clearly stated each step of the sessions and comprised of two hypnosis session plans, including hypnotic scripts, introductory and closing discussions, and additional scripts for unfavourable situations, such as 'if pupil starts giggling' and 'if pupil leaves the room'. Minor modifications were later discussed and agreed, such as shortening the content and changing some of the words, following discussions with the ELSA delivering the intervention. The first session's script focused on positive and helpful images, thoughts and feelings relating to revision, while the second and third session's scripts made suggestions in relation to the participants' ability to feel calm and in control during the exam itself.

2.2.4. Procedure

Ethical approval was received from the University of Southampton School of Psychology Ethics Committee (Appendix D).

There were several steps involved in carrying out the study. Figure 3 illustrates the procedure and each stage of the 'participant's journey'. It was agreed that the school's ELSA would deliver the hypnosis intervention. This is because the ELSA had experience and training in delivering therapeutic interventions to targeted groups, had a personal interest in hypnosis and was already receiving regular supervision from an EP as part of their role. Given Corrieri et al.'s (2013) comments regarding variation in the skillsets and qualifications of school-based facilitators that deliver interventions, the author felt it was important to note the ELSA's background: In addition to completing the ELSA training in 2009, the ELSA had gained a level 3 Diploma in Counselling skills and, during the present study, was in the process of completing a DipHE in Counselling.

The ELSA was given two 90 minute training sessions, in which Dr. Liossi assessed the ELSA's capacity to deliver the intervention, provided information on hypnosis and the necessary techniques required (e.g. tone of voice), read through and discussed the hypnosis manual with the ELSA and discussed any amendments that may be necessary. One of the training sessions took place at the University of Southampton, while the other took place at the school during normal working hours.

After gaining parental consent and informed assent, participants were asked to complete the pre-intervention measures (CTAS, GSES, STAIC, CDI-S) during tutor time. At this point, the Head of Year 9 was asked to provide the participants' predicted grades for English and maths. Once participants had been screened for high depression scores, the remaining participants were given a 25 minute presentation (Appendix H), delivered by the researchers, in which pupils were thanked for taking part, informed of the project details and were given an opportunity to ask questions.

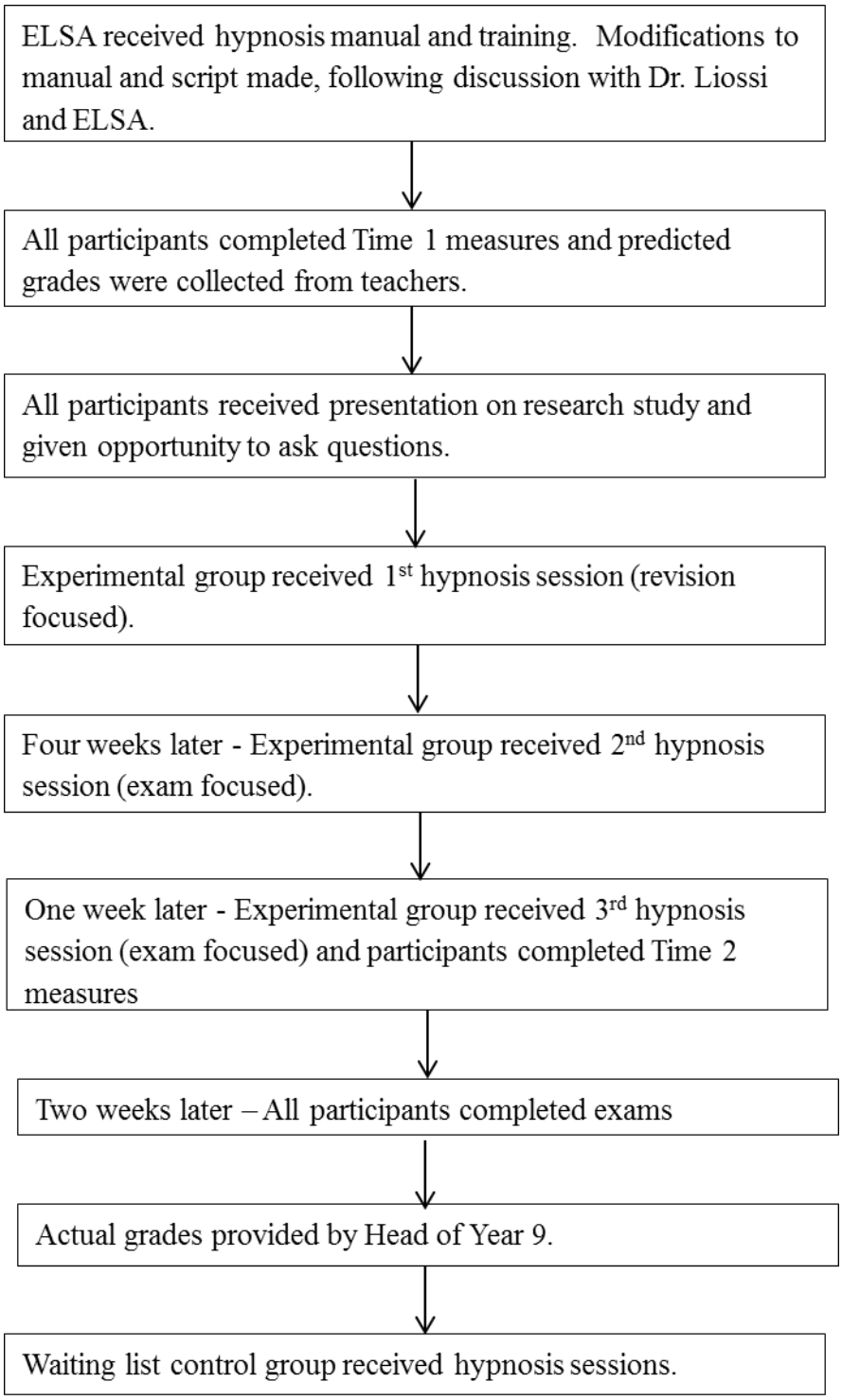

Figure 3. *Flow diagram showing procedure and participant journey*

Similar previous studies have administered between two and three 'doses' of hypnosis, lasting approximately 50 to 90 minutes each (Ainsworth et al., 2010; Stanton, 1994; 1993). After discussion with Dr. Liossi and the ELSA, it was decided that three 45 minute sessions (length of a normal class) of hypnosis would be administered to the

experimental group (the third session was a repeat of the second script). In line with previous studies, the original plan was for a one week gap between each session, with the final session being two weeks prior to the exams. Unfortunately, due to the timing of the exams, the two week Christmas holiday period and because of the general logistics of the school's timetable, there was a four week gap between sessions one and two. However, after all three sessions, the pupils were taught and encouraged to practise the post-hypnotic exercises as much as possible. Pupils were also given stress balls in the shape of brains, and post-hypnotic suggestions relating to the stress balls were included in the hypnosis script, to remind pupils to practise.

All participants (experimental and waiting list control) completed post-intervention questionnaires at the end of the week of the final hypnosis session and had a further two weeks to continue practising the exercises before their exams. The Head of Year 9 then provided the participants' actual grades for English and maths. The waiting list control group received the hypnosis intervention once the study was complete.

2.3. Results

2.3.1. Preliminary analysis

The mean test-anxiety score for the potential participants (N = 112, *M* = 65.03, *SD* = 15.98) was slightly lower than that found in Roughan & Hadwin's (2011) study (*M* = 69.71, *SD* = 9.67), whose participants were, although a more targeted sample (i.e. emotional and behavioural difficulties), of a similar age (M_{age} = 12.94 years) and also British. The experimental sample (n = 24) at Time 1 (T1) reported, on average, higher levels of test-anxiety (*M* = 77.08, *SD* = 11.09) than that of the potential participant mean, thus demonstrating that the experimental sample consisted of pupils with a higher than average level of test-anxiety.

Three participants in the control group did not complete the questionnaire measures at Time 2 (T2), due to absence. The sample size was small and when conducting an Analysis of Variance (ANOVA), it is important for the sample size in each group to be equal (Field, 2009). Consequently, the decision was made to maintain an even number of participants at T2 by using the Last Observation Carried Forward

(LOCF) strategy. This strategy has been used in several other RCT studies testing anxiety interventions (Carlbring et al., 2011; Reaven, Blakeley-Smith, Culhane-Shelburne & Hepburn, 2012) and involves replacing the missing value for each individual with the last observed value of that variable. Therefore, any variable scores missing at T2 were replaced by the participant's equivalent variable score at T1. Two participants in the experimental group attended only two of the three hypnosis sessions. However, consistent with previous randomised trial studies that have encountered a similar situation (Torgerson, Boldrin, Hauptman & Sjostrom, 2004), an intention to treat analysis (Hollis & Campbell, 1999) was carried out (including data from all participants that started the intervention).

Parametric assumptions were tested at T1 and T2 for each dependent variable and group. The control group's test-anxiety scores at T1 was significantly non-normal (D [12] = .25, $p < .05$), indicating that the distribution of scores were slightly positive skewed (a larger concentration of lower scores). However, all other assumptions were found to be within acceptable limits for normal distribution and homogeneity of variance. Furthermore, the ANOVA is considered to be a robust test that can produce statistically accurate results with data that has not met all the assumptions and it is not universally agreed that transforming the data results in any benefit to the analysis (Field, 2009). Therefore, the data was not transformed. Descriptive statistics (including mean scores and standard deviations) for each measure, under each time condition, for each group are shown in Table 3.

Independent t-tests were conducted to examine differences between the groups for trait anxiety (STAIC [trait]), state anxiety (STAIC [state]) and depression (CDI-S) at Time 1 (T1), to ensure the two groups were equivalent. The experimental group's trait anxiety scores were lower (M = 36.08, SD = 9.02) than the control group's (M = 42, SD = 7.32) but this was not significant, $t(22) = -1.76$, $p > 0.05$. The experimental group's state anxiety scores were lower (M = 34.42, SD = 5.60) than the control group's (M = 37.25, SD = 5.77) but this was not significant, $t(22) = -1.22$, $p > 0.05$. There was no significant difference in depression scores between the experimental group (M = 3.67, SD = 2.77) and the control group (M = 4.50, SD = 2.24), $t(22) = .43$, $p > 0.05$. To ensure the two groups were equivalent at T1 in regard to gender, a chi-square test was conducted, demonstrating that there was no significant difference between the number

of males (n = 7) and females (n = 5) in the experimental group compared to the number of males (n = 3) and females (n = 9) in the control group (X^2 (1) = 2.74, $p > 0.05$).

2x2 ANOVAs were conducted to test for main and interactive effects of time and group for test-anxiety (CTAS), self-efficacy (GSES) English grade and maths grade. Table 4 shows the results for each of these ANOVAs.

Table 3
Table Comparing the Mean Values and Standard Deviations for all Outcome Measures at Time 1 (T1) and Time 2 (T2) for both the Experimental and Control Groups.

	T1		T2	
Measure	Hypnosis N = 12	Control N = 12	Hypnosis N = 12	Control N = 12
CTAS	77.08 (12.64)	77.08 (9.88)	69.42 (17.75)	79.22 (16.10)
GSES	24.42 (4.58)	24.08 (5.92)	26.33 (3.37)	23.42 (5.74)
STAIC (trait)	36.08 (9.02)	42.00 (7.32)	-	-
STAIC (state)	34.42 (5.60)	37.25 (5.77)	-	-
CDI-S	3.67 (2.77)	4.5 (2.24)	-	-
English grade	6.12 (1.02)	6.42 (0.90)	4.5 (1.68)	3.92 (2.23)
Maths grade	6.67 (1.07)	6.17 (1.03)	4.33 (1.61)	4.42 (1.16)

Note. Standard deviations appear in parentheses below means; For English and maths grades, higher score represent higher grades; CTAS = Children's Test Anxiety Scale; GSES = General Self-Efficacy Scale; STAIC = State-Trait Anxiety Inventory; CDI-S = Children's Depression Inventory – Short.

2.3.2. Test Anxiety (CTAS)

To test the impact of the intervention, while taking the control group into account, a 2 (experimental group vs control group) x 2 (T1 vs T2) mixed ANOVA was

conducted on test-anxiety scores. The results showed that there was no significant main effect of time, $F(1, 22) = 1.44$, $p > 0.05$, $r = .25$, or group, $F(1, 22) = .80$, $p > 0.05$, $r = .19$. This indicates that any differences in test-anxiety scores were not due to time or group factors alone. There was a significant interaction effect between time and group, $F(1, 22) = 4.19$, $p < 0.05$, $r = .4$. This indicates that differences in test-anxiety scores between T1 and T2 were dependent on the group that participants were allocated. The mean test-anxiety scores, as illustrated in Table 3, indicate the direction of this interaction, and demonstrate that the hypnosis intervention was successful in reducing test-anxiety scores in participants in the experimental group, when compared to the control group, thus confirming the hypothesis.

T-tests were conducted to compare differences in test-anxiety between and within subjects. At T1, there was no significant difference in test-anxiety scores between the experimental group ($M = 77.08$, $SD = 12.67$) and the control group ($M = 77.08$, $SD = 9.88$), $t(22) = 0.00$, $p > 0.05$. At T2, there was no significant difference in test-anxiety scores between the experimental group ($M = 69.42$, $SD = 17.74$) and the control group ($M = 79.22$, $SD = 16.10$), $t(22) = -1.40$, $p > 0.05$. However, participants in the experimental group reported significantly lower test-anxiety at T2 ($M = 69.42$, $SD = 17.74$) than at T1 ($M = 77.08$, $SD = 12.67$), $t(11) = 2.52$, $p < 0.05$, $r = 0.6$. For the control group, there was no significant difference between TA scores at T1 ($M = 77.08$, $SD = 9.88$) and T2 ($M = 79.22$, $SD = 16.10$), $t(11) = -0.554$, $p > 0.05$. This indicates that the hypnosis intervention successfully reduced test-anxiety in those in the experimental group and that the control group experienced no change.

Table 4
Table Showing Results from the 2 (Experimental Group vs Control group) x 2 (Time 1 vs Time 2) Factorial Analysis of Variance for the Children's Test Anxiety Scale (CTAS), the General Self-Efficacy Scale (GSES), English Grade and Maths Grade

Source	*Df*	*F*	*r*	*p*
CTAS				
Group	1	.80	.19	= .38
(B) Time	1	1.44	.25	= .24
A x B (interaction)	1	4.19	.40	= .05*
Error (within groups)	22			
GSES				
(A) Group	1	.71	.18	= .41
(B) Time	1	.89	.20	= .36
A x B (interaction)	1	3.80	.38	= .06
Error (within groups)	22			
English Grade				
(A) Group	1	.94	.20	= .76
(B) Time	1	39.74	.80	= .00**
A x B (interaction)	1	1.59	.26	= .22
Error (within groups)	22			
Maths Grade				
(A) Group	1	.19	.09	= .67
(B) Time	1	147.55	.93	= .00**
A x B (interaction)	1	3.01	.35	= .10
Error (within groups)	22			

Note. * = $p \leq 0.05$., ** = $p \leq 0.01$

2.3.3. Self-efficacy (GSES)

To explore the impact of the intervention on self-efficacy, while taking the control group into account, a 2 (experimental group vs control group) x 2 (T1 vs T2) mixed ANOVA was conducted on self-efficacy scores. The results showed that there was no significant main effect of time, $F(1, 22) = .89$, $p > 0.05$, or group, $F(1, 22) = .71$, $p > 0.05$. This indicates that any difference in self-efficacy scores were not due to time or

group factors alone. There was no significant intervention effect between time and group, $F(1, 22) = 3.80$, $p > 0.05$, $r = .38$. This indicates that differences in self-efficacy scores between T1 and T2 were not dependent on the group participants were allocated. However, the interaction was nearly significant ($p = .06$). Given the small sample size, low power (.46) and mean trajectories of each group, it would be fair to say that there was a positive trend, indicating that the intervention may have increased the experimental group's self-efficacy.

2.3.4. Academic Achievement

For the academic performance measure, grades were converted from letters (A* - U) to numbers (9 – 1), with higher numbers representing a higher grade (e.g. 9 = A*). To explore the impact of the intervention on academic achievement, while taking the control group into account, a 2 (experimental group vs control group) x 2 (T1 vs T2) mixed ANOVA was conducted on English grades and maths grades. The results showed that there was no significant main effect of group for English, $F(1, 22)= .09$, $p > 0.05$, or maths grades, $F(1, 22)= .19$, $p > 0.05$, but there was a significant main effect of time for English, $F(1, 22) = 39.74$, $p < 0.01$ and for maths grades, $F(1, 22) = 147.55$, $p < 0.01$. This indicates that any difference in academic grades were not due to group factors alone. However, according to the mean scores, participants from both groups scored, on average, significantly lower than their predicted grades in English and maths. There was no significant interaction effect between time and group for English, $F(1, 22) = 1.59$, $p > 0.05$, $r = .26$, or maths grades, $F(1, 22) = 3.01$, $p > 0.05$, $r = .35$,. This indicates that any differences between predicted and actual grades were not dependent on the group with which participants were allocated.

2.3.5. Correlations

A Pearson's correlation coefficient was conducted on all of the measures at T1, across both groups. As illustrated in Table 5, test-anxiety was significantly related to self-efficacy ($r = -.41$, $p < .05$), state-anxiety ($r = .46$, $p < .05$) and trait-anxiety ($r = .52$, $p \leq .01$). Depression scores were significantly related to ratings of self-efficacy ($r = -.57$, $p \leq .01$), state-anxiety ($r = .67$, $p \leq .01$) and trait-anxiety ($r = .56$, $p \leq .01$). In addition to those mentioned above, self-efficacy was significantly related to state-anxiety ($r = -.78$, $p \leq .01$) and trait-anxiety ($r = -.50$, $p < .05$). State and trait anxiety

scores were also significantly related ($r = .72$, $p \leq .01$). Predicted maths and English grades significantly correlated only with each other ($r = .57$, $p \leq .01$).

Table 5
Pearson's Correlations Between Each Measure, across groups, at Time 1

	CTAS	GSES	STAIC (trait)	STAIC (state)	CDI-S	Pred. English	Pred. Maths
CTAS	1	-.41*	.52**	.46*	.23	-.09	-.18
GSES		1	-.50*	-.78**	-.57**	-.06	.07
STAIC (trait)			1	.72**	.56**	.11	-.13
STAIC (state)				1	.67**	.01	-.12
CDI-S					1	.10	.18
Pred.English						1	.57**
Pred.Maths							1

Note. * = $p \leq 0.05$; ** = $p \leq 0.01$; CTAS = Children's Test Anxiety Scale; GSES = General Self-Efficacy Scale; STAIC = State-Trait Anxiety Inventory; CDI-S = Children's Depression Inventory – Short; Pred.English = Predicted English grade; Pred.Maths = Predicted maths grade

2.3.6. Fidelity.

The facilitator's mean self-reported fidelity score, across the three hypnosis sessions, was 23 out of a possible 28. This was considered an acceptable level of fidelity. Table 6 shows the facilitator's mean scores for each item. In regards to participant fidelity, three participants in the experimental group reported that they practised 'most days', six participants said they practised 'a few times' and three stated that they did not practise at all.

Table 6
Table Showing the Facilitator's Self-Report Fidelity Scores for Each Item

Item	Mean score
I used a calm, soft tone.	4
I used a slow rate of speech.	3.67
I read out the script exactly.	2.67
I followed the order and structure of the planned session.	3.67
The students followed my instructions throughout the session.	3
The students remained quiet throughout the hypnosis activity and refrained from interrupting.	3.67
The session was free from interruptions and distractions.	3

Note. Higher score indicates higher fidelity. Highest item score = 4. Lowest item score = 1.

2.4. Discussion

The primary aim of this study was to test whether a manualised hypnosis intervention, delivered by a trained member of school staff (ELSA), would reduce test-anxiety in secondary school aged children. To the author's knowledge, no previous study has tested this research question to date. The results indicated that the intervention was successful in reducing test-anxiety in the experimental group, in comparison to the control group, thus confirming the hypothesis. Therefore, the study has demonstrated that it is possible to reduce test-anxiety in school aged children by training a member of school staff to deliver a manualised hypnosis intervention.

The secondary aim was to investigate whether the intervention would significantly increase self-efficacy. The results demonstrated that, although the difference was not significant, there was a positive trend: The experimental group showed signs of an increase in self-efficacy, indicating that the hypnosis intervention may have enhanced the participants' self-efficacy slightly. Furthermore, in an exploratory manner, the intervention's effect on academic achievement was also examined. The results showed that the hypnosis intervention had no effect on the participants' maths or English internal exams.

A colleague researcher (Patterson, 2014) conducted a qualitative analysis of the experiences of the experimental group and found, overall, similarly positive results. The participants reported a reduction in test-anxiety, an increased sense of calm, reduced worry and an increase in confidence. Additionally, the researcher found that participants found the hypnosis experience fun and enjoyable, a relaxing experience and were keen and willing to try hypnosis again. The present study's findings are similar to those of previous studies that have investigated the impact of hypnosis on test-anxiety in school aged children (Stanton, 1994) and undergraduate students (Stanton, 1993). As advised by Baker et al. (2009), a randomised controlled trial was conducted. The results are consistent with the qualitative results from Ainsworth et al.'s (2010) randomised controlled trial, in which undergraduate students described the hypnosis intervention as both helpful and useful in reducing test-anxiety.

Unlike Ainsworth et al.'s (2010) study, however, a significant quantitative result was found. There is little difference between the two study's sample size (N = 24) and intervention procedure (3 sessions in small groups) but there is a difference in the age of the participants: Ainsworth et al.'s (2010) participants were nursing students and had a mean age of 26 years. Due to their strong imaginations, children are often more easily hypnotised than adults (Huynh et al., 2008), which may help to explain the different outcomes.

Similar to Bradley et al.'s (2007) and Gregor's (2005) studies, a therapeutic school-based intervention was administered by a member of school staff and was effective in reducing test-anxiety. The effect size (r = .40) was smaller than that found in studies where the professional/researcher delivered the intervention, such as Stanton's (r = .71; 1994), which is consistent with the literature on the effectiveness of school-based anxiety interventions delivered by school-staff, compared to mental health professionals (Neil and Christensen, 2009).

As other research has demonstrated in undergraduates (Onyeizugbo, 2010; Croyle et al., 2012), a negative correlation was found between self-efficacy and test-anxiety: As test-anxiety reduced, self-efficacy increased. It was hypothesised that the intervention would increase self-efficacy, while reducing test-anxiety. Although the result was not significant, a definite trend was demonstrated. The lack of a significant result could be explained by the small sample size. However, it should also be noted that much of the

research investigating the effects of hypnosis on self-efficacy, not just confidence, has been for physical performance (Barker et al., 2013), rather than academic performance. Therefore, it may be useful to explore the effect of hypnosis on self-efficacy in different disciplines and whether one is more easily influenced than another. Furthermore, as previous studies have, the present study used a general measure of self-efficacy. Therefore, it would be useful for future research to replicate the study with a more specific academic self-efficacy measure.

As suggested by Baker et al. (2009), the impact the present study's hypnosis intervention made on academic performance was also explored. Inconsistent with Stanton's (1988) study and studies described in Wark's (2011) review, the present study's hypnosis intervention did not improve academic performance. Interestingly, however, Patterson's (2014) analysis of the interviews conducted by a colleague researcher with the present study's experimental group highlighted that some of participants believed the intervention did help to improve concentration, clarity of thought and even exam performance. Therefore, some individuals may have benefitted from the intervention but not all.

With the vast number of factors that might influence academic performance (Richardson et al., 2012), it is reasonable to assume that the hypnosis intervention was not sufficiently effective in improving academic performance for all. In studies where hypnosis interventions have been successful in improving cognitive and academic performance, the suggestions have tended to focus on the performance of particular skills and/or behaviours (De Vos & Louw, 2011; Macleod, 2011; Raz et al., 2004; 2005; 2006). In contrast, although some suggestions in the present study's script referred to concentration and revision, the primary focus was on reducing test-anxiety, not on test performance.

An additional explanation for the lack of impact on academic performance could be the low stakes of the exam. Evaluative threat has been shown to influence the detrimental effect test-anxiety can have on academic performance (Hancock, 2001). The internal exams, in the present study, bore no tangible consequences and so may have reduced the potential mediating effect of test-anxiety on every participant's performance. Furthermore, the teacher's predicted grades bore little resemblance to the

participants' actual exam grades, which may indicate that the participants were not motivated to revise.

In addition to contributing to the relatively scarce data on test-anxiety in young people the UK (Putwain, 2007a; 2009), the present study's findings have several implications for test-anxiety, the delivery of therapeutic interventions in schools, the public's perception of hypnosis and further research.

Having demonstrated that school staff are capable of delivering a brief hypnosis intervention effectively, the study has provided further evidence and support for schools to utilise this cost-effective method of intervention. The manualised hypnosis intervention described in the present study is highly relevant at this time, given the current government's push for a greater focus on exams (Ofqual, 2014), but it also benefits from requiring little time and resources to implement and could be easily distributed to schools to help a number of young people.

A clear advantage of enabling skilled school staff, rather than a psychologist, to deliver the intervention is the large number of children and young people that may be able to access the intervention. However, some individuals and organisations may have reservations about teachers or teaching assistants delivering interventions in general, and hypnosis in particular. The senior member of staff from the first school approached expressed such reservations when he chose to withdraw from the present study. In western countries, where stage hypnosis is used as entertainment, the general public (as well as trained professionals) form myths and misconceptions about hypnosis based on, predominantly, what they have seen in stage hypnosis shows or from the media in general (Johnson & Hauck, 1999; Wagstaff, 2008). Unfortunately, such misconceptions can cause, as they did in the present study, barriers to research on hypnosis in schools.

The British Psychological Society (2009) states that there is a need to protect the public from poor and harmful practice. Therefore, like with all therapeutic interventions, and as the researchers did in the present study, it is important to think carefully about who would be best placed to implement the intervention and to provide suitable supervision. Furthermore, it is important to evaluate and publish the effectiveness of interventions so that both the scientific community and the public can be better informed.

A growing body of literature has demonstrated the value and effectiveness of ELSAs, who currently deliver therapeutic interventions for such areas as emotional management, loss and bereavement and anxiety (Burton, 2008). Therefore, as long as they are working within their normal role and capacity, are following a specific script and are supervised appropriately, as demonstrated in the present study, this author believes ELSAs are well placed and suitably trained to use hypnosis as part of their practice. ELSAs are currently supervised by EPs and, overall, are reported to find this arrangement highly beneficial and effective (Osborne & Burton, 2014). Therefore, it seems appropriate for EPs to supervise ELSAs in the use of hypnosis.

Liossi, White and Hatira (2006; 2009) used hypnosis to reduce pain in children and involved parents in the facilitation of hypnosis. Parents stroked the child's cheek or hand as a prompt for the child to use hypnosis during a painful medical procedure. In the present study, stress balls were given to participants and used as a post-hypnotic suggestion to remind them practise. It may have been beneficial to involve parents at home as well, by asking them to remind their children to practise.

Few studies have published the hypnosis script, making it difficult to compare, critique and replicate interventions. Consequently, the present study has included the scripts (Appendix G) in a hope that future studies will do the same but also so that others can replicate the intervention with different samples, conditions and measures. It would be useful to test the intervention and script with a larger sample, with a shorter gap between sessions, with different age groups and with different methods of encouraging the participants to practise at home.

A larger sample size may help to unpick whether there is a particular aspect of test-anxiety that the intervention is effecting (e.g. thoughts, automatic reactions or off-task behaviours). In the current study, there was some variation in the extent to which participants practised and Patterson's (2014) qualitative analysis revealed that several participants were unsure of how to practise on their own. Therefore, it might be useful to test the impact of sending the participants home with a recording of the session, which they could potentially record on their own smart-phone.

The study offers some encouraging findings with regards to the use of a manualised hypnosis intervention in schools. However, there are some limitations, in

addition to those already mentioned above, that merit attention. The first of which, is the common logistical barrier of finding a willing school and willing participants to take part in the RCT, thus resulting in a small sample size.

Misplaced fears around hypnosis was one of the reasons the first school approached chose to withdraw from the study. Furthermore, Patterson's (2014) qualitative analysis identified that both the facilitator and participants reported inaccurate pre-conceptions and misplaced fears about hypnosis that appeared to be shaped by the media. It is important for future researchers to take this into account and be prepared for the fact that some school staff, parents and children may hold these negative misconceptions about hypnosis. Fortunately, however, participants reported that many school-staff, parents and peers were interested in the intervention and that the majority of the participants were keen and willing to try hypnosis again. Therefore, it may have helped to shift some people's perception of hypnosis.

To ensure pupils with the highest level of test-anxiety were recruited, participants were selected and invited to participate according to their test-anxiety (CTAS) score. Alternative methods of recruitment may have led to different results and difference sample sizes. Inviting teachers and parents to identify suitable pupils may not be the most effective approach, as neither group tend to make very accurate judgements about pupil test-anxiety (Karing, Dorfler & Artelt, 2013). Self-referral is a more typical feature of therapy and the impact of a therapeutic intervention is strongly influenced by expectation and the desire for change (Gibson, 2008; Westra, Dozois & Marcus, 2007). Therefore, including self-referrals, in addition to using the CTAS, may have influenced the effect and may have generated a greater number of participants.

The school-staff aspect of the study was a unique feature of the study. However, there is strong evidence to suggest that the therapeutic relationship is a greater predictor of client outcome than the type of therapeutic intervention (Lambert, Michael & Barley, 2001). Therefore, given that there was no experimental control group, it is not possible to rule out the possibility that the effect found in the present study was due to the positive relationship between the facilitator and the young people, not the hypnosis. It could also have been the result of participants simply having time out or feeling as though they are part of something special (Osterman, 2000). Therefore, further exploration is needed.

Given that almost all of the participants achieved lower grades than the teachers predicted, this may not have been a sufficient pre-measure of academic achievement. This is a difficult variable to measure, as the validity of predicted grades and teacher's judgements of student academic ability are considered questionable (Fienberg & Shapiro, 2009). However, introducing a test for the sake of the investigation would lack ecological validity and real-world consequences and would be less ethical. A longitudinal approach, where class based tests, mock exams and external exams are collated throughout the year, may be a possible alternative. A longitudinal approach would also have the benefit of testing the effects of hypnosis on test-anxiety and self-efficacy over time.

Corrieri et al. (2013) commented on the variation in implementation fidelity and skill-set of the school-based facilitators of interventions. Consequently, in the present study, efforts were made to carefully select an appropriate member of school staff and to report the facilitator's background. Fidelity measures were taken but, in an attempt to keep the burden on participants and the facilitator as minimal as possible, they were very basic and it would have been beneficial to have a more detailed assessment of this factor. Furthermore, with only one facilitator, it is not possible to compare and test whether any effects were due to the intervention or the individual facilitator's skills and characteristics.

In conclusion, the present study found that a manualised hypnosis intervention, delivered by a trained member of school staff (ELSA), successfully reduced test-anxiety in secondary school aged children. The results also indicated that the intervention had no effect on academic performance but may have improved self-efficacy slightly. Having conducted a pilot study, the next step would be to carry out the definitive study. Nonetheless, this study offers promising evidence for the support of para-professionals delivering therapeutic interventions in schools and suggests that, fundamentally, the use of hypnosis to reduce test-anxiety in young people is worthwhile.

Finally, the present author felt it was worth sharing some reflections on the experience of conducting research as an applied research practitioner. The author experienced some difficulty in balancing the conflict between conducting a methodologically sound research project while simultaneously ensuring the study is ecologically valid, relevant to EP practice and ethical. For example, the author is aware

that by informing the participants, the School and parents of the study's aims (i.e. to reduce test-anxiety) there was a potential risk of bias (such as demand characteristics). However, as an EP, the present author felt that providing detailed informed consent was not only more relevant to practice but also more ethical.

Appendix A

List of search terms used in the systematic review

Searches were conducted in each database. Following initial searches based on the search terms, limiters were applied to retrieve studies that met the inclusion criteria, such as 'peer reviewed journal' and 'English language'. Search terms were initially generated by the researcher and additional terms (based on keywords from relevant articles found during the search process) were later added, followed by a re-running of the search in each database.

1. PsycInfo (via Ebsco; 1970-2013): All search results from the search terms below were filtered by type of journal: 'peer reviewed'; language: 'English language'; and the exclusion of dissertations.

(test anxiety OR test stress OR exam anxiety OR exam stress)

AND

(attentive OR attention OR distract* OR hypervigilan* OR focus* OR concentrate*)*

2. Web of Science (via Web of Knowledge; 1970-2013): All search results from the search terms below were filtered by type of publication: 'peer reviewed' and 'article', and language: 'English'

(test anxiety OR test stress OR exam anxiety OR exam stress)

AND

(attentive OR attention OR distract* OR hypervigilan* OR focus* OR concentrate*)*

3. MEDLINE (via Web of Knowledge: 1970-2013): All search results from the search terms below were filtered by type of publication: 'peer reviewed' and 'article', and language: 'English'

(test anxiety OR test stress OR exam anxiety OR exam stress)

AND

(attentive OR attention OR distract* OR hypervigilan* OR focus* OR concentrate*)*

APPENDICES

Appendix B

Criteria for excluding papers

Following the searches 487 articles were identified, 113 papers were excluded due to duplicates between search databases. Following the screening of titles and abstracts, 334 papers were excluded. Following reading of the full text, a further 16 were excluded. Reasons for exclusions are listed below:

No specific measure of test-anxiety (n =7)
No measure of attentional control (n= 2)
Not an empirical study (e.g. review paper) (n = 5)
Brief report (n = 1)
Qualitative study (n = 1)

APPENDICES

Appendix C

Table Abbreviations:

F = Female
N = Number of participants
M.age = Mean age
BS = Between Subjects
WS = Within Subjects
IV = Independent Variable
TA = Test Anxiety
AC = Attentional Control
* = P < 0.05
** = p < 0.01

NS = Not significant (P > 0.05)
HTA = High Test Anxiety group
MTA Medium Test Anxiety group
LTA = Low Test-anxiety group

RTA = Revised Test Anxiety Questionnaire (RTA; Bemson et al., 1992)
TAS = Test Anxiety Scale (Sarason, 1978)
TASC = Test Anxiety Scale for Children (TASC, Sarason et al., 1958
PTA = Performance Test Anxiety Questionnaire (O-Carroll & Fisher, 2013)
TAI = Test Anxiety Inventory (Spielberger et al., 1980)
STAIs = State Trait Anxiety Scale (Spielberger et al., 1970)
RTT = Reaction to Test Scale (Sarason, 1984)

AB = Attention Bias
ET = Evaluative Threat (e.g. told the test relates to intelligence)
WCST = Wisconsin Card Sorting Task
Dot-P = Dot Probe task (MacLeod et al. (1986)
CIQ = Cognitive Interference Questionnaire (Sarason & Stroops, 1978)
ACS = Attentional Control Scale (Derryberry, 2002)
SRS: Self-Regulation Scale (Luszczynska et al., 2004)
SCS = Self-Consciousness Scale (Fenigstein et al., 1975)
CCAQ: Children's Cognitive Assessment Questionnaire (Zatz & Chassin, 1983)
CDS = Cognitive Distractions Scale (Hayes & Embreston, 2013)
EDS = Environmental Distractions Scale (Hayes & Embreston, 2013)

Study	Participants	Country	Design	AC & TA Measures	Relevant findings
Bertrams et al. (2013) Study 3.	**Characteristics:** Undergraduate students **N (Female):** 99 (58) **Age:** 23.99 (mean)	Germany	**Design:** BS & WS design **Group allocation:** Randomised **BS IV:** AC depletion (depleted condition vs non-depleted condition.	**AC:** Performance on arithmetic task Degree of distraction scale (based on TAI) **TA:** TAI	Relationship between TA and degree of distraction differed between two experimental conditions* In depletion condition, higher TA predicted greater degree of distraction* (Link was weaker in non-depleted group – NS) Higher degree of distraction predicted lower performance on arithmetic task* In depleted condition, the negative correlation between TA and performance on arithmetic task was mediated by degree of distraction* In non-depleted condition, the negative correlation between TA and performance on arithmetic task was NOT mediated by degree of distraction (NS)

O'Carroll & Fisher (2013)	**Characteristics:** Undergraduate students **N (Female):** 240 (54%) **Age:** 19.6 (mean)	UK	**Design:** Within subjects **IV:** AC: ACS	**TA:** PTA	PTA negatively correlated with ACS: focusing attention subscale BUT only in males* NS correlation between PTA & ACS: shifting attention subscale
Hayes & Embreston (2013)	**Characteristics:** Undergraduate students **N (Female):** 315 (not reported) **Age:** 20.2 (mean)	USA	**Design:** BS & WS design **Group allocation:** Randomised **BS IV:** Test setting (Home vs. School)	**AC:** SRS CDS EDS Performance on maths task **TA:** RTA	TA negatively correlated with CDS* NS correlation between TA & EDS or TA & SRS Negative correlation between TA & performance on maths task* Negative correlation between TA & performance on maths task partially mediated by CDS*. This indirect effect was also stronger in home condition than school condition**
Putwain et al. (2011)	**Characteristics:** Undergraduate students **N (Female):** 80 (54) **Age:** 24 (mean)	UK	**Design:** BS design **Group allocation:** TA, then randomised to ET condition **IV:** TA score (HTA vs LTA) ET condition (Low ET vs High ET)	**AC:** Dot probe response time & AB score **TA:** RTA	HTA demonstrated AB towards threat in High ET condition and AB away from threat in Low ET condition.* LTA demonstrated AB away from threat in both conditions. (NS) HTA responded faster to threat words than LTA* HTA responded faster to threat words in High ET condition than Low ET condition* Participants in High ET condition responded to threat words faster than those in the Low Et condition BUT NS (p = .06) LTA did not respond faster to threat words in either ET condition (NS)

Hopko et al. (2005)	**Characteristics:** Undergraduate students **N (Female):** 100 (72) **Age:** 19.8 (mean)	USA	**Design:** WS design	**AC:** Performance on attentional tasks: letter sequencing, recall of digits forwards & backwards, stroop task & PASAT-C. **TA:** TAI	TA predicted negative relationship on the following tasks: Letter sequencing task* Recall of digits backwards* TA did NOT predict any relationship with the following tasks: Recall of digits forwards (NS) Stroop task (NS) PASAT-C (NS)
Keogh et al. (2004)	**Characteristics:** Psychology undergraduate students **N (Female):** 106 (82) **Age:** 22 (mean)	UK	**Design:** BS & WS design **Group allocation:** TA **BS IV:** TA score (HTA, MTA or LTA) **WS IV:** Location cueing (Cued [+] vs. uncued [+++]) Distractor presence (present vs not-present) Distractor word valence (threat vs non-threat) Distractor word relevance (relevant vs irrelevant)	**AC:** Dot probe distraction score **TA:** RTA	***Dot probe distraction score***: HTA > LTA* TA group X distractor presence X location cueing* valence X location cueing* distractor presence X location cueing threat word > non-threat** valence X TA group* (HTA + threat) > (HTA + non-threat)** (MTA + threat) > (MTA + non-threat)** (LTA + threat) > (LTA + non-threat) NS (HTA + non-threat) < (LTA + non-threat)* cued < uncued** (HTA + uncued) < (LTA + uncued)* relevant > irrelevant* (did not follow up on this interaction)
Keogh & French (2001)	**Characteristics:** Undergraduate students **N (Female):** 72 (58) **Age:** 25 (mean)	UK	**Design:** BS & WS design **Group allocation:** TA, then randomly to ET condition **BS IV:** TA score (HTA vs. LTA) ET condition (ET vs no ET)	**AC:** Dot probe distraction score **TA:** TAS	***Dot probe distraction score:*** Distractor present > Distractor not-present** cued < uncued** Distractor presence X location cueing** Word valence X Word relevance** Word valence X Word relevance X location cueing** TA group X ET X word valence X location cueing* (HTA + ET) > (LTA + ET)* (HTA + ET) > (HTA + no ET)*

			WS IV: Location cueing (Cued [+] vs. uncued [+++]) Distractor presence (present vs not-present) Distractor word valence (threat vs non-threat) Distractor word relevance (relevant vs irrelevant)		(HTA + ET) > (LTA + no ET) NS (HTA + threat) > (HTA + non-threat)* HTA > LTA* only in ET condition.
Vasey et al. (1996)	**Characteristics:** 6th & 8th grade children **N (Female):** 40 (20) **Age:** Not reported	USA	**Design:** BS design **Group allocation:** TA **BS IV:** TA score (HTA vs. LTA)	**AC:** Dot probe AB score **TA:** TASC	Main effect for TA group* HTA demonstrated bias towards threat LTA demonstrated bias away from threat BUT only in males
Alting & Markham (1993)	**Characteristics:** Undergraduate students **N (Female):** 90 (not reported) **Age:** Not reported	Australia	**Design:** BS design **Group allocation:** TA, then randomly assigned to conditions **BS IV:** TA score (HTA vs LTA) ET condition (ET vs. no ET) Distraction (distractor vs. no distractor)	**AC:** Duration & number of off-task glances (measured by researcher) Distractibility questionnaire (self-report) **TA:** RTT	HTA spent more time glancing off-task than LTA when distractor was present in ET condition* No difference in duration of off-task glances between HTA and LTA were found in other conditions (NS) ***Self-reports of distraction:*** (HTA + distractor) > (LTA + distractor)* (HTA + no distractor) > (LTA + no distractor) NS ***Time spent glancing off-task:*** HTA + ET + distractor > HTA + no ET + no distractor during ET *

Calvo et al. (1990)	**Characteristics:** Undergraduate students **N (Female):** 32 (not reported) **Age:** 18 – 20 (range)	**Tenerife**	**Design:** BS & WS design **Group allocation:** TA, then randomly assigned to conditions **BS IV:** TA score (HTA vs LTA) ET condition (ET vs. no ET) WS IV: Attentional demands of task (High atten. vs Low atten.) Trial (1 & 2)	**AC:** Performance on tasks (time and accuracy) **TA:** TAI	HTA performed worse (time only) on high atten. task than LTA during trial 1 in ET condition ONLY* No difference in performance between HTA and LTA at trial 2, in any of low atten. task conditions or no ET conditions. (NS)
Hammermaster (1989)	**Characteristics:** Undergraduate students **N (Female):** 39 (21) **Age:** 27 (mean)	USA	**Design:** BS & WS design **Group allocation:** TA **BS IV:** TA score (HTA vs LTA)	**AC:** WCST score CIQ **TA:** TAS	***CIQ score:*** HTA > LTA ***WCST score*:** HTA < LTA
Rich & Woolever (1988)	**Characteristics:** Undergraduate students **N (Female):** 80 (46) **Age:** Not reported	USA	**Design:** BS & WS design **Group allocation:** TA, then randomly assigned to conditions **BS IV:** TA score (HTA vs LTA) Focused attention (Mirror vs no mirror) Feedback on word association test prior to Michegan Verbal intelligence test (pos vs neg)	**AC:** Performance on Michegan Verbal intelligence (MVI) test **TA:** TAI	***Performance on MVI:*** HTA > LTA* Performance on MVI in pos + mirror: HTA > LTA* Performance on MVI in neg + mirror: HTA < LTA* HTA performed better in pos condition than neg condition* LTA performed better in neg than pos conditions* Mirror & feedback mediated performance for HTA but not LTA

Flett et al. (1987)	**Characteristics:** Psychology Undergraduate students **N (Female):** 154 (100) **Age:** 20.4 (mean)	Canada	**Design:** WS design	**AC:** SCS **TA:** RTT	RTT negatively correlated with SCS (both private & public subscales)*
Calvo (1985)	**Characteristics:** College students **N (Female):** 80 (40) **Age:** 15 – 17 (range)	Tenerife	**Design:** BS & WS design **Group allocation:** TA, then randomly allocated to conditions **BS IV:** TA score (HTA vs LTA) Incentive (incentive vs no incentive) ET condition (ET vs no-ET)	**AC:** Performance on General Intelligence Test (GIT) **TA:** TAI	***Performance on GIT:*** (incentive + ET): HTA < LTA* BUT only on most difficult task. (no incentive + ET): HTA < LTA (NS) (LTA + incentive) > (LTA + no incentive)* (HTA + incentive) < (HTA + no incentive) NS (no ET + no incentive condition): No difference between TA groups (NS)
Ford, Pelham & Ross (1985)	**Characteristics:** 2^{nd}, 4^{th} & 6^{th} grade children **N (Female):** 38 (0) **Age:** Not reported	USA	**Design:** BS design **Group allocation:** TA & reading ability **BS IV:** TA score (HTA vs LTA) Reading ability (poor vs control)	**AC:** Performance on incidental & central learning tasks (visual & auditory) **TA:** TASC	***Performance on visual central learning task:*** HTA < LTA* ***Performance on visual incidental task:*** No difference between HTA & LTA (NS) ***Performance on auditory learning tasks (both incidental and central):*** No difference between HTA & LTA (NS) Reading did not mediate any effects found (NS)

Sarason (1984)	**Characteristics:** Psychology undergraduate students **N (Female):** 164 (not reported) **Age:** Not reported	USA	**Design:** BS design **Group allocation:** TA, then randomly assigned to condition **BS IV:** TA score (HTA vs LTA) ET condition (ET vs no ET) Support (attention directed, reassurance, control)	**AC:** CIQ Performance on attentionally demanding task **TA:** TAS	***CIQ scores:*** HTA > LTA* ***Performance on attentionally demanding task:*** HTA < LTA* Attention direct > reassurance or control* (HTA + Attention direct) > (HTA + reassurance or control)*
Carver et al. (1983)	**Characteristics:** Undergraduate students **N (Female):** 72 (72) **Age:** Not reported	USA	**Design:** BS design **Group allocation:** TA, then randomly assigned to condition **BS IV:** TA score (HTA vs LTA) Attention manipulation (mirror vs no mirror**)**	**AC:** Performance on anagram task Post-experimental questionnaire **TA:** TAI	***Performance on anagram task:*** HTA < LTA* Interaction effect between TA group & attention manipulation condition.* Difference between TA groups was only reliable in the mirror condition* No difference between TA groups in no mirror condition (NS) Post experimental questionnaire indicating time spent focusing on-task: Interaction effect between TA group and attention manipulation* Mirror condition associated with tendency for LTA to focus on-task more but HTA less, compared to no mirror condition*
Zatz & Chassin (1983)	**Characteristics:** 5th & 6th grade children **N (Female):** 294 (57%) **Age:** Not reported	USA	**Design:** BS & WS design **Group allocation:** TA **BS IV:** TA score (HTA, MTA or LTA)	**AC:** CCAQ (off-task thoughts subscale) **TA:** TASC	***CCAQ off-task thoughts subscale score:*** Negatively correlated with TASC* Difference between TA groups* (HTA > MTA > LTA) Particularly in reference to negative thoughts. HTA & MTA also reported higher number of on-task thoughts than LTA*

Papsdorf et al. (1982)	**Characteristics:** Undergraduate students **N (Female):** 64 (32) **Age:** Not reported	USA	**Design:** BS & WS design **Group allocation:** TA & then randomly assigned to condition **BS IV:** TA score (HTA vs LTA) Attention manipulation (distractor vs no distractor)	**AC**: Performance on anagram task (time & accuracy) **TA:** TAI	***Performance on anagram task:*** No overall interaction or effects found between TA group and attention manipulation (NS) ***Performance on "easier" anagram tasks:*** No overall interaction or effects found between TA group and attention manipulation (NS) ***Time spent on "harder" anagram tasks:*** Interaction between attention manipulation, TA group* Interaction between gender, attention manipulation and TA group* (HTA + distractor) > (LTA + distractor)* No differences found in the no distractor condition (NS) HTA females in distractor condition took longer than HTA females in no distractor condition* LTA females in distractor condition took less time than LTA females in no distractor condition. No difference between conditions for males (NS)
Slapion & Carver (1981)	**Characteristics:** Undergraduate students **N (Female):** 96 (33) **Age:** Not reported	**USA**	**Design:** BS & WS design **Group allocation:** TA & then randomly assigned to condition **BS IV:** TA score (HTA vs LTA) Attention manipulation (distractor vs no distractor) Trial (traial 1 vs trial 2)	**AC:** Performance on Wesman personnel intelligence test. Post-experimental questionnaire **TA:** TAI	***Performance on test:*** Interaction between TA group & attention manipulation.* In 1st trial., presence of mirror facilitated performance of HTA* BUT no difference in 2nd trial. Mirror manipulation did not result in differences in performance for LTA in either trial 1 or trial 2. (NS) HTA females performed poorer with mirror (than without mirror) ONLY in 1st trial, not 2nd. HTA males performed poorer with mirror (than without mirror) in both trials. ***Post-experimental questionnaire:*** 'Worry' subscale's negative effect on performance was mediated by mirror.* 'Emotionality' subscale affected performance* BUT NOT mediated by mirror. (NS) HTA paid more attention to bodily reactions & had more thoughts about themselves, less about the task than low TA.*

Deffenbacher (1978)	**Characteristics:** Psychology undergraduate students **N (Female):** 68 (41) **Age:** Not reported	USA	**Design:** BS & WS design **Group allocation:** TA **BS IV:** TA score (HTA vs LTA) ET condition (ET vs non ET)	**AC:** Performance on anagram task Post-task questionnaire **TA:** TAS	HTA performed worse on task than LTA* ***Post-task questionnaire:*** HTA reported greater interference and distraction from all 3 subscales (emotionality, worry & task generated interference)* 'Worry' & 'task generated interference' reported as most distracting
Nottelmann & Hill (1977)	**Characteristics:** 4th & 5th grade children **N (Female):** 48 (24) **Age:** Not reported	USA	**Design:** BS design **Group allocation:** TA BS IV: TA score (HTA, MTA vs LTA)	**AC:** Performance on anagram task Off-task glances (measured by researchers) – 96% agreement overall & 89% agreement for categories. **TA:** TASC	***Performance on task:*** Main effect for TA group* (HTA > MTA > LTA) Performance declined over time for all* ***Off-task glances observed:*** Main effect for TA group* (HTA > LTA & MTA) Off-task glances increased over time, for all.** ***Glances towards experimenter's task:*** Main effect for TA group* (HTA > MTA & LTA) ***Non-directed glances:*** Main effect for TA group* (HTA > LTA & MTA)
Dusek et al. (1976)	**Characteristics:** 2nd, 4th & 6th grade Children **N (Female):** 144 (72) **Age:** 7.8, 9.5 & 11.9 (mean for each grade)	**USA**	**Design:** BS & WS design **Group allocation:** TA **BS IV:** TA score (HTA, MTA vs LTA) WS IV: Task (Incidental vs central learning task)	**AC:** Performance on incidental and central learning task. **TA:** TASC	***Performance on central task:*** LTA > HTA** ***Performance on Incidental task:*** HTA > LTA** BUT only for 4th & 6th grade children NOT 2nd grade children.

Tobias et al. (1974)	**Characteristics:** Psychology Undergraduate students **N (Female):** 78 (not reported) **Age:** Not reported	USA	**Design:** BS design **Group allocation:** TA **BS IV:** TA score (HTA vs LTA)	**AC:** Performance on maths aptitude test (multiple choice, 'easy' & 'difficult' items) **TA:** TAS	***Performance on 'easy' items:*** No difference between TA groups (NS) ***Performance on 'difficult' items:*** HTA < LTA*

Appendix D

Information for schools form

RESEARCH IN PARTNERSHIP SCHEME **INFORMATION FOR SCHOOLS**
Project Title. The effectiveness of self-hypnosis in reducing test-anxiety
Background. *Our research supervisor, Dr Christina Liossi, has had success using self-hypnosis techniques with children to help manage pain (Liossi, White & Hatira, 2006; Liossi, 2009). We are two Trainee Educational Psychologists (and former secondary teachers) who have an interest in trying to support students to manage their anxiety around exams. We want to investigate, both qualitatively and quantitatively, whether a self-hypnosis intervention can support students to manage their own anxiety. In previous research, hypnosis has been found to be effective at helping students to manage their anxiety levels (Baker, 2009). However, most previous research has involved undergraduate students rather than those in Secondary School, and the researchers are keen to investigate the potential for self-hypnosis to support Secondary students to manage their test anxiety. Furthermore, research has demonstrated how therapeutic interventions delivered by trained school staff can be an economical and effective method of reaching a high number of students (e.g. Therapeutic story writing, FRIENDS, PATHS). Implementing self-hypnosis training in this manner is yet to be tested.*
Aims of the project. *The project aims to explore the extent to which self-hypnosis training, delivered by trained staff, is helpful to students as a means of controlling test anxiety (quantitative measures), and also to explore with some students the ways in which they applied self-hypnosis techniques prior to their exam and the extent to which they found it unhelpful or helpful (qualitative measures).*
Who is conducting and supervising the project? *The research will be conducted by two Year 2 Trainee Educational Psychologists (TEPs), who are both qualified and experienced secondary teachers. They are currently undertaking their Doctorate in Educational Psychology through the University of Southampton, and work as TEPs for Hampshire and Slough Borough Councils respectively. Both TEPs are fully CRB-checked.* *The TEPs are supervised by Dr Christina Liossi and Dr Felicity Bishop from the School of Psychology at the University of Southampton.*
What is the proposed start date and time frame? *We have submitted a research proposal and once this is approved we will need to seek ethical clearance through the University of Southampton. We are therefore unlikely to be ready to conduct the research in time for major summer exams in 2013, so would look to synchronise the self-hypnosis intervention with any mock or modular exams that the school undertakes in the Autumn term of 2013.*
What is the age group and gender? *We do not have any specific requirements around age group, beyond the fact that students are of Secondary School age and will be able to reflect on their own experiences. We would aim for a mixed-gender group if possible.*
What will we ask the school to do? *The school will be asked to allow the researchers and Dr Christina Liossi to come into school and provide*

two self-hypnosis training sessions (approximately 1.5 hours each) to school staff (hopefully ELSAs) who would like to engage with the project. We will then ask the trained staff to disseminate this training to students in groups of ten, over approximately two 1 hour sessions. Prior to students undertaking the self-hypnosis training they will be asked to complete a pre-intervention measure. Once the students have finished the training, they will be asked to complete an immediate post-measure. Then finally, approximately two months later (and hopefully after a test/exam, the students will be asked to complete a third and final post-intervention measure. A selection of students will also be asked to attend a focus group session with a researcher so that they can reflect on their experiences.
If the project is successful and the school would like us to, then there will be scope for the training to be delivered to the additional staff. In this way the school will be undertaking a psychologically research-led approach to supporting students with test anxiety.

What will we ask the young person to do?
Initially, the young person will be asked to complete a pre-intervention questionnaire in order to establish their levels of anxiety around an upcoming test/exam. The young person will then be asked to engage with some self-hypnosis training which will be delivered by a trained member of staff; this involves simple techniques of managing one's breathing and using one's imagination to calm the mind and body. The young person will be asked to use their learnt self-hypnosis techniques in the run-up to their test/exam. After using the technique the young person will be asked to complete post-intervention questionnaire at two points (immediate and two months later), and once their exam is over they will be asked to attend a focus group session with a researcher to reflect on their experiences. All of the training and research will be conducted on school property. The young people involved will be asked for fully informed consent, and will understand that they are free to withdraw from the research at any point in time; we will make it clear that if the students withdraw from the research then none of their information will be used by the researchers.

What are the benefits for the school and/or the young person?
Many students suffer from exam anxiety – this can make exam periods unpleasant, and for some students can hinder their exam success. We are hopeful that we will be able to demonstrate that self-hypnosis is a helpful intervention to support students to manage their test anxiety that will encourage a more optimistic and positive attitude towards exams. If our findings are positive, then both the school and students will know that there is a technique which can support their own and their peers' test anxiety in a positive way. If we find no positive results, then self-hypnosis is a technique which will do no harm, and will allow the students some time to reflect on their body's reaction to stress and anxiety.

The school will have the benefit of being involved in current psychological research into a possible intervention to support students' mental wellbeing surrounding the stressful experience of exams. An involvement in this type of research could feed into the School's Development Plan – with particular relevance to their Ofsted criteria of 'Achievement of Pupils' and also feeding into the mental wellbeing elements of both the 'Behaviour and Safety' of pupils, as well as the 'Spiritual, Moral, Social and Cultural Development' of pupils.

If the project is successful then the school will be able to train all their staff and pupils in the self-hypnosis techniques – thus all students could benefit from an intervention to support themselves during the exams they will encounter throughout their academic lives.

How will the project help us to understand child and adolescent development?
The project feeds-in to prior research around the potential benefits of self-hypnosis as an intervention to reduce test anxiety. Thus, it is increasing the body of evidence in a relatively under-researched area of both Educational and Health Psychology. If the research is found to be successful, then the researchers would aim to seek publication in academic journals in order to share their findings with the wider academic and practitioner psychologist communities.

UNIVERSITY OF Southampton
School of Psychology

PARENT/CARER QUESTIONNAIRE INFORMATION SHEET

ERGO Study ID number: 7071

Exploring test anxiety

Dear Parents/Carers of Year 9,

We are starting a research project at the school where we are investigating whether or not Year 9 students feel anxious about their exams and tests. We are then going to explore ways to help students feel less anxious about their exams or tests.

For the first stage of this research we are asking the whole of Year 9 to complete a questionnaire. It is called the Children's Test Anxiety Scale, and it will help us to see if people in Year 9 are feeling worried about their upcoming tests and exams.

We aren't going to give your son/daughter their score once they have completed the questionnaire, but we will use the results to inform the school if there are any students who need support with their test anxiety.

Please note that unless you send the slip attached to this letter back into school we are assuming that you agree for us to give this questionnaire to your son/daughter.

We will also send a letter to your son/daughter explaining to them about what we are doing.

If you are worried about this questionnaire then please talk to Mr Murray (Individual Learning Needs Coordinator) or Ms Walters (Emotional Literacy Support Assistant). You can also contact us, the researchers, by email at lcp1g11@soton.ac.uk.

If you do not want your child to complete the questionnaire then please return the slip below by Friday 11th October.

Many thanks for your help,

Ben Tayler and Lindsay Patterson

University of Southampton

UNIVERSITY OF Southampton
School of Psychology

PARENT/CARER QUESTIONNAIRE INFORMATION SHEET

ERGO Study ID number: 7071

Exploring test anxiety

By returning this slip I am **withdrawing my consent** for researchers from the University of Southampton (Lindsay Patterson and Ben Tayler) to ask my child to complete the Children's Test Anxiety Scale.

Name of child ……

Form Group ……...

Parent/carer name ……..

Parent/carer signature …….

Please return this slip to either your child's form tutor, Mr Murray (Individual Learning Needs Coordinator) or Ms Walters (Emotional Literacy Support Assistant).

Thank you

UNIVERSITY OF Southampton
School of Psychology

PARENT/CARER INFORMATION SHEET

ERGO Study ID number: 7071

Teaching self-hypnosis lessons in school to reduce test anxiety

Dear Parent/Carer,

We would like to invite your son/daughter to take part in a study which explores whether self-hypnosis can help students to worry less about taking tests and exams. We call this worry 'test anxiety'. Before you decide whether or not you would like your son/daughter to take part we would like you to understand why the study is being carried out and what it would involve.

What is the purpose of the research?

Research has found that test anxiety can affect students in the following ways:

- Students may feel worried about their approaching tests
- Students could feel stressed and unwell before and during their test
- Students may not be able to concentrate and remember as well as they normally can do in their tests.

Our current education system in the UK values the use of tests as a way of measuring students' progress and achievement; tests can determine whether students are able to go to college, university or to train for certain careers.

However, there is increasing interest in finding ways to support students who become anxious about their tests. The current project, therefore, aims to research whether self-hypnosis can help students to reduce their test anxiety; the project also aims to ask students whether or not they found the self-hypnosis intervention helpful, whether they would use it for future tests and if they think it is something which could help other students.

The two researchers, Ben Tayler and Lindsay Patterson, both used to be Secondary School teachers – they have always been interested in helping students to reduce their test anxiety. Ben and Lindsay are now training to be Educational Psychologists at the University of Southampton. This research forms part of their Doctorate in Educational Psychology.

Why has my son/daughter been invited to take part?

We would like to conduct this research with students who are beginning Year 9; it is at this age that students can start to become aware of the number of GCSE tests that they

will have to sit. Additionally, if we can establish whether or not self-hypnosis is a helpful way to reduce test anxiety at this stage in your son/daughter's GCSE courses then they will know whether or not it is something they could use in the future.

Your son/daughter has been identified through a questionnaire as someone who may worry about exams and tests. This does not mean that their worries will necessarily impact on their performance in their tests, but they may benefit from an intervention which could help them to reduce their worries.

Does my son/daughter have to take part?

Taking part in this research project is entirely voluntary. If you agree to your son/daughter taking part we will ask you to sign a consent form. We will also ask your son/daughter to sign a form giving their agreement to take part in the research. You are free to withdraw your son/daughter at any time, without giving a reason. Your son/daughter may also choose to withdraw at any time, without giving a reason. If you or your son/daughter choose to withdraw from the study, any portion of, or completed data will be destroyed and your data will not form part of the study.

Another reason you may not want your son/daughter to take part is if they have been diagnosed with any psychological difficulties (eg. depression, bi-polar disorder, schizophrenia). This is because we do not want the self-hypnosis to interfere with your child's treatment. If your son/daughter has been diagnosed on the Autistic Spectrum (ASD) then you may not want your child to take part in the study as not all people with ASD are able to access self-hypnosis.

Young people who have learning related diagnoses such Attention Deficit Hyperactivity Disorder (ADHD) or dyslexia will be fine to take part in the self-hypnosis though.

What will happen to my son/daughter if they take part?

Your son/daughter will initially be randomly placed in either the group who will receive the self-hypnosis intervention before February, or the group who will receive the self-hypnosis intervention after February. We have to set this structure in place so that we can be sure that any results we see are due to the self-hypnosis intervention rather than other factors.

If your son/daughter is in the pre-February intervention group then they will be invited to attend two lessons with Karla Walters, the Emotional Literacy Support Assistant (ELSA) at Crestwood College. One of these lessons will take place before the Christmas holidays and one after; the students will attend the lessons in groups of 10. Prior to these lessons Ms Walters will receive training in self-hypnosis techniques from Dr Christina Liossi at the University of Southampton, who has used hypnosis techniques in her previous research.

During these lessons Ms Walters will talk to the students about test anxiety, explaining what it is and how it can affect people. Ms Walters will then read from a pre-prepared hypnosis script to help your son/daughter experience deep relaxation. Whilst your son/daughter is feeling relaxed Ms Walters will continue to read from the script, talking to your son/daughter about feeling relaxed when they face their tests. Ms Walters will

then use the script to bring your son/daughter back from their relaxation. **During the entire self-hypnosis process your son/daughter will remain conscious and aware, they will not be under any type of control and will be able to open their eyes and end the relaxation at any time.**

Ms Walters will support the students to develop the skills to use self-hypnosis to relax themselves whenever they feel it will be useful. We will ask the students to practice the self-hypnosis techniques in the run-up to their school tests in January.

Before and after the set of self-hypnosis lessons, your son/daughter will be asked to complete a further few questionnaires exploring their anxiety levels, their mood and their sense of optimism. All participants will be asked to complete these questionnaires, whether they have received the self-hypnosis lessons or whether they are due to receive them after February. If your son/daughter is in the group who has received the self-hypnosis lessons then they will also be invited to attend an interview at Crestwood College with one of the researchers, Lindsay Patterson. This interview will explore your son/daughter's experiences of the self-hypnosis intervention and whether they will use the intervention in the future.

Prior to the school's tests in January, your son/daughter will be asked to complete the same set of questionnaires once more, so we can see if the self-hypnosis has had any further impact on your son/daughter's anxiety levels.

Once your son/daughter has finished their tests, and if they are in the pre-February intervention group, they will be invited to attend one further interview at Crestwood College with Lindsay Patterson, so that they can talk about their experiences of using self-hypnosis.

If your son/daughter is in the post-February intervention group then they will receive the self-hypnosis lessons with Ms Walters after the February half term and will not be interviewed by Lindsay Patterson.

What are the possible disadvantages and risks of taking part?

We do not foresee any disadvantages or risks through taking part in this research. However, it should be noted that not everyone enjoys experiencing deep relaxation through self-hypnosis. If this is the case for your son/daughter then they will be free to withdraw from the research at any time.

What are the possible benefits of taking part?

We hope that the results of this research will give us a better understanding of whether self-hypnosis can help students who experience test anxiety.

By using both questionnaires and interviews, we are also hoping to find out whether or not the students found the self-hypnosis intervention helpful. If students felt that the intervention was too time consuming or difficult then this will help to inform future research.

What if there is a problem?

If you have a concern about any aspect of the study, you should ask to speak to the researchers who will do their best to answer your questions (Lindsay Patterson email: lcp1g11@soton.ac.uk; Ben Tayler email: brt2g11@soton.ac.uk). If you remain unhappy and wish to complain formally, you can do this through contacting the Chair of the Ethics Committee, Psychology, University of Southampton, SO17 1BJ, UK. Phone: +44 (0)23 8059 4663, email slb1n10@soton.ac.uk.

As part of the research we will also ask your son/daughter to complete a short mood questionnaire (see '***What will happen to my son/daughter if they take part?'*** above). If your son/daughter scores at a level which suggests that they may be at risk for experiencing low mood, then they will not be asked to take part in the study and the school will contact you and also the school nurse as you may want to explore this further with your son/daughter. Please note, this questionnaire does not diagnose your son/daughter as having low mood or depression, but just acts as an indicator.

Will my son/daughter's details be kept confidential?

We would like to assure you that your son/daughter's details will be kept confidential. The questionnaires will be completed confidentially by the students. The interviews will be audio-recorded and subsequently typed up as a word document where your child's name and any identifying details will be removed in line with data protection regulations. Any data containing your son/daughter's name or any other identifying details will be kept separately from the anonymised research transcripts in a locked cabinet and/or password protected computer.

The only exception to this rule would be if the researcher conducting the interview became aware that your son/daughter was at serious risk of harming themself or others; or there were concerns for the neglect or abuse of children. If this were the case we would have to share your son/daughter's information with agencies, and this may be without your permission. If this happens we would discuss it with you first.

What will happen to the results of the research study?

Once we have collected and analysed the data (May 2014), you will receive a study summary to let you know what we have found. The research will also be shared with Crestwood College so that they can help test anxious students. The research may be submitted for publication in a journal or shared at conferences within the University of Southampton. However, in any presentation of the data or report, your son/daughter's anonymity will be protected.

Who has reviewed the study?

This study was given a favourable ethical opinion for conduct by School of Psychology, University of Southampton Research Ethics Committee.

Ethics approval

From: ERGO [ergo@soton.ac.uk]
Sent: 09 September 2013 11:33
To: Tayler B.R.
Subject: Research Governance Feedback on your Ethics Submission (Ethics ID:7071)

Submission Number 7071:
Submission Title Self-hypnosis as an exam anxiety intervention:
The Research Governance Office has reviewed and approved your submission

You can begin your research unless you are still awaiting specific Health and Safety approval (e.g. for a Genetic or Biological Materials Risk Assessment) or external ethics review (e.g. NRES).The following comments have been made:

"

This is to confirm the University of Southampton is prepared to act as 'Research Sponsor' for this study, and the work detailed in the protocol/study outline will be covered by the University of Southampton insurance programme.
As the Sponsor's representative for the University this office is tasked with:
1. Ensuring the researcher has obtained the necessary approvals for the study
2. Monitoring the conduct of the study
3. Registering and resolving any complaints arising from the study

As the Chief/Principle Investigator you are responsible for the conduct of the study and you are expected to:
1. Ensure the study is conducted as described in the protocol/study outline approved by this office
2. Advise this office of any change to the protocol, methodology, study documents, research team, participant numbers or start/end date of the study
3. Report to this office as soon as possible any concern, complaint or adverse event arising from the study

Failure to do any of the above may invalidate your ethics approval and therefore the insurance agreement, affect funding and/or sponsorship of your study; your study may need to be suspended and disciplinary proceedings may ensue.
On receipt of this letter you may commence your research but please be aware other approvals may be required by the host organisation if your research takes place outside the University. It is your responsibility to check with the host organisation and obtain the appropriate approvals before recruitment is underway in that location.
May I take this opportunity to wish you every success for your research
Submission ID : 7071
Submission Name: Self-hypnosis as an exam anxiety intervention
Date : 09 Sep 2013
Created by : Lindsay Patterson

"

ERGO : Ethics and Research Governance Online
http://www.ergo.soton.ac.uk

DO NOT REPLY TO THIS EMAIL

Appendix E

Hypnosis Session

Teacher Questionnaire

During the hypnosis sessions…	STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE
1. I used a calm, soft tone	1	2	3	4
2. I used a slow rate of speech	1	2	3	4
3. I read out the script exactly	1	2	3	4
4. I followed the order and structure of the planned session	1	2	3	4
5. The students followed my instructions throughout the session	1	2	3	4
6. The students remained quiet throughout the hypnosis activity and refrained from interrupting	1	2	3	4
7. The session was free from interruptions or distractions (e.g. noises, people coming into the room, people talking)	1	2	3	4

Any other comments:

APPENDICES

Appendix F

Participant Hypnosis Practice Questionnaire

The following 4 questions are about when, where and how often you have used the hypnosis techniques that you have learned. For each question, please tick the box that applies to you the most.

1) ☐ I have practiced most days.

☐ I have practiced a few times.

☐ I have not practiced at all.

2) ☐ I practiced every time I thought about exams.

☐ I sometimes practiced when I thought about exams.

☐ I never practiced when I thought about exams.

3) ☐ I practiced every time I was worried about anything.

☐ I sometimes practiced when I got worried about something.

☐ I never practiced when I was worried about something.

4) ☐ I practiced mostly at home.

☐ I practised mostly at school.

☐ I never practised at home or school.

APPENDICES

Appendix G

UNIVERSITY OF Southampton

HYPNOSIS FOR TEST-ANXIETY MANUAL

Study: Teaching self-hypnosis lessons in school to reduce test anxiety

Ben Tayler and Lindsay Patterson (Yr. 3 DEdPsy, University of Southampton)

Dr Christina Liossi and Dr Felicity Bishop (Supervisors, School of Psychology, University of Southampton)

Contents

Materials and Preparation

Ensure you have the following equipment:

- Flip-chart/white board
- Flip chart/white board pens
- Stress Balls

Ensure the environment is suitable for hypnosis:

- Sufficient seating and space to allow students to sit comfortably
- Quiet location, free from excessive/disruptive noise
- Free from interruptions (may want to consider putting a sign on the door)

Prior to Session 1:

- Familiarise yourself with the information, exercises and activities that you will you need in the session.

- Copy out the structure of the session plan onto a flip chart/white board:
    - *Welcome*
    - *Hypnosis experience 1*
    - *Closing Discussion*

Prior to Session2:

- Copy out structure of session onto a flip chart/white board:
    - *Welcome*
    - *Hypnosis experience 2*
    - *Closing Discussion*

Note: Instructions will be given in normal font, pauses are emphasised in **bold** and sections you will need to read out will be in *italics.*

Session 1 - Welcome & Introductions
(10 minutes)

1. Welcome the group, thank them for agreeing to take part and introduce yourself.

2. Tell the group that before you get started, it's important to discuss confidentiality:

***ALL INFORMATION SHARED WITHIN THE GROUP MUST STAY IN THE GROUP - Unless a group member shares information that indicates that you or someone else is at risk of harm*.**

3. Check the group understands the rules around confidentiality before moving on.

4. Ask each member of the group to introduce themselves by stating their name (if necessary) and volunteering one good thing that has happened to them recently (optional – can pass if they want to)

Reassure them that it can be big or small, giving examples of "*had my favourite dinner last night*", "*someone opened a door for me this morning*" or "*went fishing at the weekend*" – You start with your own example.

5. Thank the group for their contributions. Explain briefly what will happen in today's session.

6. Tell the group that you are now going to start the first hypnosis experience but before you do, check if the group have any questions and are happy to continue. Remind the group of the celebrities that Ben and Lindsay talked about who use hypnosis to improve their performance – for example Lennox Lewis and Lilly Allen.

7. At the end of the session and when the students are leaving the room, hand each member of the group a stress ball. Explain that these are going to remind them to practice hypnosis at home. Every time they will squeeze the ball they will experience feelings of control, calmness, relaxation and focused attention.

Session 1 – Hypnosis Experience 1
(30 minutes)

---

1. Ask the students to make themselves comfortable. Suggest sitting with their feet flat on the floor and hands on their thighs

2. If students are giggling or struggling to settle after you have started the hypnotic experience then you can use the script at the end of the manual to help settle them

3. Once everyone is comfortable and settled, read the following script (ensuring that you speak in a calm and soft tone, at a slow and gentle pace):

I'm going to ask you to hold your hand out here in front of you. Hold it a little higher than eye level, perhaps. Just hold it out in front of you like this. ***[Demonstrate holding out your arm for them to see]****. Just leave your hand limp and relaxed.* ***[Again, demonstrate with your own hand]****. As you do this, I want you to notice your arm and hand. I want you to find a spot that you can focus on, on the back of your hand. Maybe there's a hair on the back of your hand, or a mole or a mark on your skin. Maybe you have a bracelet you can see, or the cuff of your jumper or shirt. Find a spot that you can focus on. Keep your eyes focused on that spot as you keep your arm rigid in the air with your hand limply relaxed. Focus on that spot.* ***[Pause]*** *And as you focus you can take a deep breath in and out again.* ***[Pause, then say the following timed with your own breathing]*** *Breathe in, and breathe out.* ***[Pause]*** *As you focus on this spot, you might notice your arm begins to feel a little bit heavy. That is a normal sensation. Arms are heavy. Just hold your arm out straight as you are doing now, with your hand limply relaxed, and as you continue to stare at that spot on the back of your hand.* ***[Pause]*** *Now, close your eyes. Let them relax.* ***[Pause]*** *Keep your eyes closed from this point forward. Picture in your mind the suggestions that I offer to you. As your hand is extended out in front of you, I am going to place an imaginary sand bucket, one that a child might have at the beach, over the back of your hand. It's going to hang from your hand. It's very light. It's not heavy at all. It's a plastic sand bucket that a child might take to the beach. It, of course, comes with a little plastic spade. What I am going to do is take one scoop of sand with the spade. I'm going to put it in that bucket. It's not very heavy, but the added weight of the sand is something that you can feel. As you feel the added weight of the sand in the bucket hanging from your wrist, you become more relaxed.*

[Pause]

I'm going to add another scoop of sand to the bucket. As I do, you can feel the increased weight begin to draw your hand closer to your knee. The bucket is not heavy, but it is in fact a little bit heavier with an extra scoop of sand. I add a third scoop of sand to the bucket. As I do that, you can feel the increased weight of the sand bucket as you relax. Relaxation becomes more and more intense and the bucket becomes a little bit heavier and a little bit heavier. I'm going to add a fourth scoop of sand to your bucket. As I do, the weight of that sand begins to pull your arm down deeper as all of the muscles in your body become relaxed. ***[Pause]*** *Go ahead and rest your hand on your knee.* ***[Students' arms should fall to their laps - if not ask them to just let them rest on their lap]*** *That's fine.* ***[Pause]*** *Go ahead and allow yourself to experience just a moment of tranquillity and relaxation. Take a breath. Feel the air fill your lungs. As you exhale, note that you feel a sensation of peace and relaxation. In your mind, you have the ability to relax at any time, especially if you are experiencing hypnosis. You know that if you wanted to you could open eyes, but you simply don't want to at the moment.*

And as you settle comfortably, this will be an opportunity for you to become even more comfortable, and to experience a relaxed state, very easily, and very gently, and very comfortably.

And as you rest, you can begin noticing the feelings, and sensations in your body right now. Just notice some of the sensations that you can be aware of right now. For instance, as you keep listening to me you may become aware of the sensations as you breathe, noticing, for example, that the sensations are different when you breathe in **[timed to inhalation]** *and breathe out* **[timed to exhalation**].

Just notice those feelings as you breathe in ***[timed to inhalation]*** *and breathe out* ***[timed to exhalation]****, and fill your lungs; and then notice the sense of release, as you breathe out* [**said while exhaling simultaneously with the students**]. *And now I'd like you to concentrate particularly on the feelings in your toes and feet. Just allow all the muscles and fibres in your toes and feet to become very deeply relaxed. Perhaps even picturing what that would look like, for all those little muscles and tissues to relax, loosely and deeply. Allowing yourself to get the kind of feeling you have when you take off a pair of tight shoes that you've had on for a long time. And you can just let go of all the tension in your toes and feet, and feel the relaxation spread. [***Brief pause]**

*And now imagine that this comfort and relaxation is beginning to spread and flow, like a gentle river of relaxation, upward, through your ankles and all through your calves. Letting go of all the tension in your calves, allowing them to deeply, and restfully, and comfortably relax. And when it feels as if that comfort has spread all the way up to your knees, gently nod your head to let me know. [****Pause]… [Even if you don't receive many responses****:] Good.*

[This signal is a double check that the students are responding and it also allows the facilitator to gauge the amount of time needed for purposes of timing the rest of the induction].

…And allow that comfort to continue, flowing upward, into your knees and behind your knees and through your knees, and into your thighs, letting go of all the tension in your thighs. Perhaps once again imagining what that might look like, for all those large muscles and tissues to become soft and loose and deeply relaxed. Perhaps already noticing that sense of gentle heaviness in your legs, as they just sink down, limply and comfortably. And when you notice that sense of heaviness in your legs, gently nod your head again. **[Pause]**

…And continue to allow that comfort to flow and spread upward, at its own pace and speed, into the middle part of your body. Flowing into your tummy, [pause] through your hips and into your lower back. Letting that soothing, deep comfort spread, inch by inch, through your body, spreading from muscle group to muscle group. Gradually, progressively flowing into your chest, **[brief pause]** *into your back,* **[brief pause]** *between your shoulder blades,* **[brief pause]***, and into your shoulders. Just allow all the tension to loosen and flow away. As if somehow, just the act of breathing is increasing your comfort. As if somehow, every breath you take, is just draining the tension out of your body, taking you deeper,* **[timed to exhalation]***, and deeper into comfort, with every breath you take. And allow that comfort to flow into your neck and throat. Perhaps imagining once again what that would look like, for all of the little fibres and muscles in your neck and throat to deeply, softly, comfortably relax. Let that relaxation sink deep into your neck. And it can gradually flow up your neck, up into your scalp, and all out across your scalp, as if it's just bathing your head with waves of comfort and relaxation. And that relaxation can flow down into your forehead, and like a gentle wave, down across your face, into your eyes, your cheeks, your mouth and jaw, allowing those tissues and muscles to droop down, slack and relaxed.*

And now allow that comfort to flow back down your neck, and across your shoulders, and down into your arms. Letting that comfort flow down your arms, through your elbows, **[pause]** *through your wrists, through your hands and fingers, right down through your fingertips. Letting go of all the tension and tightness, letting go of all the stress, and strain, all through your body. Just allowing your body to rest and relax.* **[Pause]**
So, as you start to feel increasingly relaxed, safe, comfortable and in control, I'm going to ask you to imagine yourself at the top of a staircase. ***[Pause]*** *This staircase has ten steps, and it is entirely personal to you, you don't have to share it with anybody, it is something that you will enjoy walking down, somewhere where you feel safe and relaxed and calm. Your staircase might have thick, deep carpet that feels warm and soft under your feet. Your staircase may have a bannister running down it that you can hold as you walk down the steps. Your staircase might be wide and straight, filled with light from a window, or it could be a spiral staircase, gently curving its way to the bottom.* ***[Pause]*** *Whatever your staircase looks like, I'm now going to ask you to stand at the top of it and to really look carefully as your staircase stretches out in front of you.* **[Pause]** *I want you to admire the colours you see before you, I want*

you to notice whether your staircase is made from rich, elegant oak wood, or maybe it is crafted from cold and smooth steel that glistens in front of your eyes, or perhaps your staircase is simpler and softer, made from a warmly yellow pine wood. ***[Pause]*** *As you stand at the top of your staircase and admire its colours and textures, you are still feeling that your whole body is totally relaxed. Your legs and arms feel soft and heavy, you feel warm and happy as you stand there looking down at your staircase.*

I'm now going to ask you to take the first step down onto your staircase. **[Pause]** *This is step number 10, and you are breathing deeply as you take your first step down your staircase. As you take your first step down your staircase, notice how the steps feel under your feet. Notice if your step feels soft because of the thick, deep carpet under your foot, or does the step feel firm and well-worn where your foot rests onto the floor board; I want you to notice the sensation of feeling your foot on the step and to enjoy that feeling for a moment.* **[Pause]** *Now I'm going to ask you to gently take steps number 9 and 8 down your staircase.* **[Pause]** *I'm going to ask you to stop for a moment on step number 8. You are still breathing deeply and you are noticing that you are feeling more and more relaxed as you move down the steps of your staircase.* **[Pause]**

I'm going to ask you to take three more steps down your staircase in a moment, as you take each step you're going to keep noticing that you are becoming more and more relaxed with each step. As you walk down onto **[timing each step down with an exhalation]** *step 7,* **[pause]** *step 6,* **[pause],** *and step 5* **[pause].**

Now you are on step 5 you are halfway down your staircase and your body feels heavy with relaxation. You are feeling warm and comfortable as you stand on step 5, ready to take some more steps down, feeling more and more relaxed with every step that you take down your staircase. ***[Pause]*** *You then step down onto step 4,* **[pause]** *then onto step 3* **[pause].** *You stop for a moment on step 3, breathing slowly and feeling very, very relaxed and heavy now. As you stand on step 3 you look ahead of you to the bottom of the staircase, where you can see a door in front of you. Again, this door is personal to you. Only you know what your door looks like* ***[pause]****. I want you to spend a moment looking at your door ahead of you. Look at what the door is made of and what colour it is. Your door might be wooden,* **[pause]** *it might be painted in your favourite colour,* **[pause]** *look at what the handle is made of and which side of the door the handle is on.* **[Pause]**

Now you can see your door clearly ahead of you, I'm going to ask you to take the last three steps down into even better relaxation. As you take these last three steps you are going to find that your body feels heavier, your breathing is slower, and you feel warm and comfortable – you feel totally calm, relaxed and happy. **[Pause]** *You then move down onto step 2,* **[pause],** *then you move onto step 1* **[pause],** *then finally you step down onto the ground in front of your door* **[pause].**

You are totally and completely relaxed now. You feel calm and relaxed as you reach your hand out to the door handle on your door. As you do so you notice exactly what the door handle feels like under your hand **[pause]** *you notice whether it's rough or smooth, cold or warm, whether you have to turn the handle or push it down to open the door***. [Pause]** *I now want you to gently and slowly open the door.* **[Pause]**

You then step through the door into a place where you feel relaxed and safe. A place where you feel calm and in control. This may be a place that you know very well - it might be a favourite beach, or your bedroom, or the middle of a quiet field **[Pause].** *Wherever you find yourself when you step through your door, you feel calm, safe and completely in control there. You can move around in your favourite place, noticing the sounds, the sensations and the smells around you.* **[Pause]** *You are alone in this safe and special place, you feel quiet and content as you look at everything surrounding you. The colours in your special place are beautiful and vivid, the air is clean as you breathe it in slowly and breathe it out slowly.* **[Timing this to inhalation and exhalation].**

As you concentrate gently on your steady breathing you decide to sit down in this special place. You decide to relax down onto the ground or a seat beneath you, feeling warm and very relaxed, **[pause].** *You sit down and your body feels heavy and still, and your breathing is calm and regular; you sit there noticing as you breathe in…. and out…. And in…. and out….* **[timed to inhalation and exhalation].** *As you are sitting there, your mind starts wandering and you find yourself thinking about the exams that you have to take in the next few weeks. Your thoughts are positive and you start realising that over the coming weeks, as you are revising for your tests, you will feel calm and confident. When you sit down to revise, your mind will be clear and you will feel ready to read and learn. When you pick up your revision book your breathing will be steady and you will feel confident that you are able to take-in all the information that you need to. You will feel happy in the knowledge that you are preparing for the tests in the best possible way. You will give yourself plenty of time to learn everything that you need to for the test, and you will also allow yourself enough time to relax and have fun over the school holidays as well. You will be able to write yourself a simple revision timetable which will allow you to feel confident that you have plenty of time to revise, as well as time for enjoyable activities and seeing your friends and family.*

When you are revising you will feel relaxed and creative so that you are able to use drawings and images to help you to remember the information you need. You will feel confident about asking your teachers, friends or family if you need some help to understand anything when you are revising, and you will feel happy that you are able to use your revision time constructively and effectively.

When you think about your tests over the coming few weeks you will think positively about them. From now on, you will be able to approach your tests calmly and to feel relaxed and confident as you take them. When you enter the room in which the test is being given, the act of walking through the door will act as a trigger for your body to release a wave of confidence, helping you feel calm, prepared and in control. As you sit down at your desk, you will feel calm

and ready. You will start to become aware of your breathing….as you slowly breathe in…and out…in…and out…. **[timed to inhalation and exhalation]** *it will relax your body and mind, making you feel confident, calm and in control.* ***[Pause]*** *As you begin to look at the questions on the exam paper in front of you your mind and body will feel alert but focussed. The knowledge that you have learned will come flooding back to you effortlessly; you will be able to write your ideas and thoughts easily onto the exam paper.*

As you continue to practise hypnosis over the next few weeks, you are going to be thrilled and delighted at how much easier the entire process of taking tests is going to be, and at how much better you will be able to perform. You will feel positive about your approaching exams, looking forward to them as a chance to show your teachers and yourself how hard you are working and how much of your school work you understand.

In a few seconds, I will ask you to start counting backwards from five. When I do, and when you are ready, you will gradually become more aware of what is happening around you.

You will remember the suggestions given to you that you will feel calm and confident in your exam and that you will be able to remember lots of information and be able to concentrate, which will enable you to perform at your very best. You will remember to practise your hypnosis as your exam approaches, and you will understand that the more you practise the hypnosis the better you will become at training your mind and body to be ready for your exam. ***[Pause]*** *At the end of the session today I'm going to give you a stress ball to help remind you to practise your hypnosis. As you take the stress ball in your hands today it will remind you how relaxed and positive hypnosis makes you feel.* ***[Pause]*** *Every time that you see your stress ball you will be reminded to practise your hypnosis so that you can feel calm and prepared for your exams in January and in the future.* ***[Pause]***

Enjoy for a couple more seconds the feelings of calmness, relaxation and control ***[Pause]*** *when you are ready count backwards from five to one and when you reach one, open your eyes and your attention will return back to the room...and you will feel refreshed and alert…ready to continue with the rest of your day's activities* **[Pause for 20 seconds]**

[Wait until all students have opened their eyes, acknowledging each one of them individually as they open their eyes]

Now all have a good stretch

[Give the group time to re-focus. If any of the pupils are still in hypnosis at this point then use the script at the end of the manual.]

Session 1 – Closing
(10 minutes)

1. Once the group seem ready, ask them for their thoughts on the experience and have a short discussion.

2. Suggest to the group that, **if they would like** to experience the same sensation again at any time:
    a. Close your eyes
    b. Concentrate on and pay close attention to your breathing
    c. Go to a place you feel, calm, confident, relaxed and in control.
    d. See yourself confidently revising for your exams and also doing well during the exam itself…feeling in control, calm and focused.
    e. Count backwards from 5 to 1 and when you reach 1 open your eyes feeling alert and refreshed and ready to continue with the rest of your day. Finally, have a good stretch.

3. Explain that the more often they practise, the more effective it will become and that before bed, before school and when they feel stressed would be particularly useful times to practise.

4. Explain to the group that you are giving them each a stress ball to remind them to practise their hypnosis over the coming weeks. It is shaped like a brain to remind them to look after their brain through practising hypnosis. The stress ball is theirs to keep, and is designed to act as a reminder to encourage them to practise the hypnosis whenever they have time.

5. Check whether the group has any further questions or comments.

6. Thank the group for taking part and that you look forward to seeing them again after the holidays.

End of Session 1

Session 2 – Welcome

(10 minutes)

---

1. Welcome the group and thank them for coming to the second session.

2. Remind the group that:

ALL INFORMATION SHARED WITHIN THE GROUP MUST STAY IN THE GROUP - Unless a group member shares information that indicates that you or someone else is at risk of harm

3. Check that everyone in the group would still like to take part in the final session via verbal consent.

4. Lead a short discussion by asking the group:

    a. *What did we do in the session before the holidays?*

    b. How did you feel when you left that session?

    c. Has anyone felt or done anything differently since the last session?

5. Thank the group for their contributions. Explain briefly what will happen in today's session.

Session 2 - Hypnosis Experience 2
(30 minutes)

---

1. Ask the students to make themselves comfortable. Suggest sitting with their feet flat on the floor and hands on their thighs

2. If students are giggling or struggling to settle after you have started the hypnotic experience then you can use the script at the end of the manual to help settle them

3. Once everyone is comfortable and settled, read the following script (ensuring that you speak in a calm and soft tone, at a slow and gentle pace):

I'm going to ask you to hold your hand out here in front of you. Hold it a little higher than eye level, perhaps. Just hold it out in front of you like this. ***[Demonstrate holding out your arm for them to see]****. Just leave your hand limp and relaxed.* ***[Again, demonstrate with your own hand]****. As you do this, I want you to notice your arm and hand. I want you to find a spot that you can focus on, on the back of your hand. Maybe there's a hair on the back of your hand, or a mole or a mark on your skin. Maybe you have a bracelet you can see, or the cuff of your jumper or shirt. Find a spot that you can focus on. Keep your eyes focused on that spot as you keep your arm rigid in the air with your hand limply relaxed. Focus on that spot.* ***[Pause]*** *And as you focus you can take a deep breath in and out again.* ***[Pause, then say the following timed with your own breathing]*** *Breathe in, and breathe out.* ***[Pause]*** *As you focus on this spot, you might notice your arm begins to feel a little bit heavy. That is a normal sensation. Arms are heavy. Just hold your arm out straight as you are doing now, with your hand limply relaxed, and as you continue to stare at that spot on the back of your hand.* ***[Pause]*** *Now, close your eyes. Let them relax.* ***[Pause]*** *Keep your eyes closed from this point forward. Picture in your mind the suggestions that I offer to you. As your hand is extended out in front of you, I am going to place an imaginary sand bucket, one that a child might have at the beach, over the back of your hand. It's going to hang from your hand. It's very light. It's not heavy at all. It's a plastic sand bucket that a child might take to the beach. It, of course, comes with a little plastic spade. What I am going to do is take one scoop of sand with the spade. I'm going to put it in that bucket. It's not very heavy, but the added weight of the sand is something that you can feel. As you feel the added weight of the sand in the bucket hanging from your wrist, you become more relaxed.*

[Pause]

I'm going to add another scoop of sand to the bucket. As I do, you can feel the increased weight begin to draw your hand closer to your knee. The bucket is not heavy, but it is in fact a little bit heavier with an extra scoop of sand. I add a third scoop of sand to the bucket. As I do that, you can feel the increased weight of the sand bucket as you relax. Relaxation becomes more and more intense and the bucket becomes a little bit heavier and a little bit heavier. I'm going to add a fourth scoop of sand to your bucket. As I do, the weight of that sand begins to pull your arm down deeper as all of the muscles in your body become relaxed. ***[Pause]*** *Go ahead and rest your hand on your knee.* ***[Students' arms should fall to their laps - if not ask them to just let them rest on their lap]*** *That's fine.* ***[Pause]*** *Go ahead and allow yourself to experience just a moment of tranquillity and relaxation. Take a breath. Feel the air fill your lungs. As you exhale, note that you feel a sensation of peace and relaxation. In your mind, you have the ability to relax at any time, especially if you are experiencing hypnosis. You know that if you wanted to you could open eyes, but you simply don't want to at the moment.*

And as you settle comfortably, this will be an opportunity for you to become even more comfortable, and to experience a relaxed state, very easily, and very gently, and very comfortably.

And as you rest, you can begin noticing the feelings, and sensations in your body right now. Just notice some of the sensations that you can be aware of right now. For instance, as you keep listening to me you may become aware of the sensations as you breathe, noticing, for example, that the sensations are different when you breathe in **[timed to inhalation]** *and breathe out* **[timed to exhalation**].

Just notice those feelings as you breathe in ***[timed to inhalation]*** *and breathe out* ***[timed to exhalation]****, and fill your lungs; and then notice the sense of release, as you breathe out* [**said while exhaling simultaneously with the students**]. *And now I'd like you to concentrate particularly on the feelings in your toes and feet. Just allow all the muscles and fibres in your toes and feet to become very deeply relaxed. Perhaps even picturing what that would look like, for all those little muscles and tissues to relax, loosely and deeply. Allowing yourself to get the kind of feeling you have when you take off a pair of tight shoes that you've had on for a long time. And you can just let go of all the tension in your toes and feet, and feel the relaxation spread. [***Brief pause]**

*And now imagine that this comfort and relaxation is beginning to spread and flow, like a gentle river of relaxation, upward, through your ankles and all through your calves. Letting go of all the tension in your calves, allowing them to deeply, and restfully, and comfortably relax. And when it feels as if that comfort has spread all the way up to your knees, gently nod your head to let me know. [****Pause]… [Even if you don't receive many responses****:] Good.*

[This signal is a double check that the students are responding and it also allows the facilitator to gauge the amount of time needed for purposes of timing the rest of the induction].

…And allow that comfort to continue, flowing upward, into your knees and behind your knees and through your knees, and into your thighs, letting go of all the tension in your thighs. Perhaps once again imagining what that might look like, for all those large muscles and tissues to become soft and loose and deeply relaxed. Perhaps already noticing that sense of gentle heaviness in your legs, as they just sink down, limply and comfortably. And when you notice that sense of heaviness in your legs, gently nod your head again. **[Pause]**

…And continue to allow that comfort to flow and spread upward, at its own pace and speed, into the middle part of your body. Flowing into your tummy, [pause] through your hips and into your lower back. Letting that soothing, deep comfort spread, inch by inch, through your body, spreading from muscle group to muscle group. Gradually, progressively flowing into your chest, **[brief pause]** *into your back,* **[brief pause]** *between your shoulder blades,* **[brief pause]***, and into your shoulders. Just allow all the tension to loosen and flow away. As if somehow, just the act of breathing is increasing your comfort. As if somehow, every breath you take, is just draining the tension out of your body, taking you deeper,* **[timed to exhalation]***, and deeper into comfort, with every breath you take. And allow that comfort to flow into your neck and throat. Perhaps imagining once again what that would look like, for all of the little fibres and muscles in your neck and throat to deeply, softly, comfortably relax. Let that relaxation sink deep into your neck. And it can gradually flow up your neck, up into your scalp, and all out across your scalp, as if it's just bathing your head with waves of comfort and relaxation. And that relaxation can flow down into your forehead, and like a gentle wave, down across your face, into your eyes, your cheeks, your mouth and jaw, allowing those tissues and muscles to droop down, slack and relaxed.*

And now allow that comfort to flow back down your neck, and across your shoulders, and down into your arms. Letting that comfort flow down your arms, through your elbows, **[pause]** *through your wrists, through your hands and fingers, right down through your fingertips. Letting go of all the tension and tightness, letting go of all the stress, and strain, all through your body. Just allowing your body to rest and relax.* **[Pause]**
So, as you start to feel increasingly relaxed, safe, comfortable and in control, I'm going to ask you to imagine yourself at the top of a staircase. ***[Pause]*** *This staircase has ten steps, and it is entirely personal to you, you don't have to share it with anybody, it is something that you will enjoy walking down, somewhere where you feel safe and relaxed and calm. Your staircase might have thick, deep carpet that feels warm and soft under your feet. Your staircase may have a bannister running down it that you can hold as you walk down the steps. Your staircase might be wide and straight, filled with light from a window, or it could be a spiral staircase, gently curving its way to the bottom.* ***[Pause]*** *Whatever your staircase looks like, I'm now going to ask you to stand at the top of it and to really look carefully as your staircase stretches out in front of you.* **[Pause]** *I want you to admire the colours you see before you, I want*

you to notice whether your staircase is made from rich, elegant oak wood, or maybe it is crafted from cold and smooth steel that glistens in front of your eyes, or perhaps your staircase is simpler and softer, made from a warmly yellow pine wood. ***[Pause]*** *As you stand at the top of your staircase and admire its colours and textures, you are still feeling that your whole body is totally relaxed. Your legs and arms feel soft and heavy, you feel warm and happy as you stand there looking down at your staircase.*

I'm now going to ask you to take the first step down onto your staircase. **[Pause]** *This is step number 10, and you are breathing deeply as you take your first step down your staircase. As you take your first step down your staircase, notice how the steps feel under your feet. Notice if your step feels soft because of the thick, deep carpet under your foot, or does the step feel firm and well-worn where your foot rests onto the floor board; I want you to notice the sensation of feeling your foot on the step and to enjoy that feeling for a moment.* **[Pause]** *Now I'm going to ask you to gently take steps number 9 and 8 down your staircase.* **[Pause]** *I'm going to ask you to stop for a moment on step number 8. You are still breathing deeply and you are noticing that you are feeling more and more relaxed as you move down the steps of your staircase.* **[Pause]**

I'm going to ask you to take three more steps down your staircase in a moment, as you take each step you're going to keep noticing that you are becoming more and more relaxed with each step. As you walk down onto **[timing each step down with an exhalation]** *step 7,* **[pause]** *step 6,* **[pause],** *and step 5* **[pause].**

Now you are on step 5 you are halfway down your staircase and your body feels heavy with relaxation. You are feeling warm and comfortable as you stand on step 5, ready to take some more steps down, feeling more and more relaxed with every step that you take down your staircase. ***[Pause]*** *You then step down onto step 4,* **[pause]** *then onto step 3* **[pause].** *You stop for a moment on step 3, breathing slowly and feeling very, very relaxed and heavy now. As you stand on step 3 you look ahead of you to the bottom of the staircase, where you can see a door in front of you. Again, this door is personal to you. Only you know what your door looks like* ***[pause]****. I want you to spend a moment looking at your door ahead of you. Look at what the door is made of and what colour it is. Your door might be wooden,* **[pause]** *it might be painted in your favourite colour,* **[pause]** *look at what the handle is made of and which side of the door the handle is on.* **[Pause]**

Now you can see your door clearly ahead of you, I'm going to ask you to take the last three steps down into even better relaxation. As you take these last three steps you are going to find that your body feels heavier, your breathing is slower, and you feel warm and comfortable – you feel totally calm, relaxed and happy. **[Pause]** *You then move down onto step 2,* **[pause],** *then you move onto step 1* **[pause],** *then finally you step down onto the ground in front of your door* **[pause].**

You are totally and completely relaxed now. You feel calm and relaxed as you reach your hand out to the door handle on your door. As you do so you notice exactly what the door handle feels like under your hand **[pause]** *you notice whether it's rough or smooth, cold or warm, whether you have to turn the handle or push it down to open the door***. [Pause]** *I now want you to gently and slowly open the door.* **[Pause]**

You then step through the door into a place where you feel relaxed and safe. A place where you feel calm and in control. This may be a place that you know very well - it might be a favourite beach, or your bedroom, or the middle of a quiet field **[Pause].** *Wherever you find yourself when you step through your door, you feel calm, safe and completely in control there. You can move around in your favourite place, noticing the sounds, the sensations and the smells around you.* **[Pause]** *You are alone in this safe and special place, you feel quiet and content as you look at everything surrounding you. The colours in your special place are beautiful and vivid, the air is clean as you breathe it in slowly and breathe it out slowly.* **[Timing this to inhalation and exhalation].**

As you concentrate gently on your steady breathing you decide to sit down in this special place. You decide to relax down onto the ground or a seat beneath you, feeling warm and very relaxed, **[pause].** *You sit down and your body feels heavy and still, and your breathing is calm and regular; you sit there noticing as you breathe in…. and out…. And in…. and out….* **[timed to inhalation and exhalation].**
As you are sitting there, your mind starts wandering and you find yourself thinking about the exams that you have to take in the next few weeks. Your thoughts are positive and you start realising that from now on, you will be able to approach your tests calmly and feel relaxed and confident as you take them. When you enter the room in which the test is being given, the act of walking through the door will act as a trigger for your body to release a wave of confidence, helping you feel calm, prepared and in control. As you sit down at your desk, you will feel calm and ready. You will start to become aware of your breathing….as you slowly breathe in…and out…in…and out…. **[timed to inhalation and exhalation]** *it will relax your body and mind, making you feel confident, calm and in control.*

As you pick up your pen, you will feel focused, calm and in control. You will feel in just the right mood to perform at your very best. You will be keen to get started so you can show how much you know and who skilfully you can demonstrate your knowledge and understanding.

You will be able to remember lots of information, your thinking will be faster and more flexible, and you will be able to focus completely on the task. You will be able concentrate much more easily on the questions and think carefully and confidently in how you will answer them.

You will be able to remain perfectly calm and confident throughout the entire test as the ideas, facts and concepts continue to flow smoothly into your awareness. You will organise your thoughts naturally and almost spontaneously, as if they were flowing onto the paper by themselves.

You are going to be thrilled and delighted at how much easier the entire process of taking tests is going to be, and at how much better you will be able to perform. You will enjoy the feeling of confidence that you have throughout your tests, and you will feel satisfied and calm once the tests are over, knowing that whatever the outcome of your results, you will have done your best and worked hard.

In a few seconds, I will ask you to start counting backwards from five. When I do, and when you are ready, you will gradually become more aware of what is happening around you.

You will remember the suggestions given to you in regards to how you will feel calm and confident in your exam and that you will be able to remember lots of information and be able to concentrate, which will enable you to perform at your very best.

You will also remember to breathe in relaxation and confidence and breathe out tension and worries to help you feel calm, confident and in control.
Enjoy for a couple more seconds the feelings of calmness, relaxation and control ***[Pause]*** *when you are ready count backwards from five to one and when you reach one, open your eyes and your attention will return back to the room...and you will feel refreshed and alert…ready to continue with the rest of your day's activities* **[Pause for 20 seconds]**

[Wait until all students have opened their eyes, acknowledging each one of them individually as they open their eyes]

Now all have a good stretch

[Give the group time to re-focus. If any of the pupils are still in hypnosis at this point then use the script at the end of the manual.]

Session 2 – Closing
(10 minutes)

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1. Once the group seem ready, ask them for their thoughts on the experience and have a short discussion.

2. Suggest to the group that, **if they would like** to experience the same sensation again at any time:
    a. Close your eyes
    b. Concentrate on and pay close attention to your breathing
    c. Go to a place you feel, calm, confident, relaxed and in control.
    d. See yourself confidently revising for your exams and also doing well during the exam itself…feeling in control, calm and focused.
    e. Count backwards from 5 to 1 and when you reach 1 open your eyes feeling alert and refreshed and ready to continue with the rest of your day. Finally, have a good stretch.

3. Explain that the more often they practise, the more effective it will become and that before bed, before school and when they feel stressed would be particularly useful times to practise.

4. Explain to the group that you are giving them each a stress ball to remind them to practise their hypnosis over the coming weeks. It is shaped like a brain to remind them to look after their brain through practising hypnosis. The stress ball is theirs to keep, and is designed to act as a reminder to encourage them to practise the hypnosis whenever they have time.

5. Check whether the group has any further questions or comments.

6. Thank the group for taking part and that you look forward to seeing them again after the holidays.

End of Session 2

What to do if…

1. A student starts giggling:

"Sometimes people feel a bit silly when they start to relax. It's ok if relaxing feels strange or makes you giggle to begin with. ***[Pause]*** *I want you to focus on this hypnosis session which is going to help all of you to prepare for your exams, so I'm going to ask you to continue to breathe deeply in* ***[breathing in with students]*** *and breathe deeply out* ***[breathing out with students]****.*

I'm going to ask you to re-focus by settling back comfortably in your chair. And as you return to rest, you can begin noticing the feelings, and sensations in your body right now. Just notice some of the sensations that you can be aware of right now. For instance, as you keep listening to me you may become aware of the sensations as you breathe, noticing, for example, that the sensations are different when you breathe in **[timed to inhalation]** *and breathe out* **[timed to exhalation**].

Just notice those feelings as you breathe in ***[timed to inhalation]*** *and breathe out* ***[timed to exhalation]****, and fill your lungs; and then notice the sense of release, as you breathe out* [**said while exhaling simultaneously with the students**]. *And now I'd like you to concentrate particularly on the feelings in your toes and feet. Just allow all the muscles and fibres in your toes and feet to become very deeply relaxed. Perhaps even picturing what that would look like, for all those little muscles and tissues to relax, loosely and deeply. Allowing yourself to get the kind of feeling you have when you take off a pair of tight shoes that you've had on for a long time. And you can just let go of all the tension in your toes and feet, and feel the relaxation spread up through your body."* **[Carry on with the hypnosis session where you were interrupted from here]**

[If students are still struggling to settle then you can ask them to leave the room and re-settle the rest of the group by repeating the script above again]

2. A student walks out the room:

"It's a shame that ***[X]*** *doesn't want to stay and join us in hypnosis today, but that's his/her choice. I want to focus on this hypnosis session which is going to help all of you to prepare for your exams, so I'm going to ask you to continue to breathe deeply in* ***[breathing in with students]*** *and breathe deeply out* ***[breathing out with students]****.*

I'm going to ask you to re-focus by settling back comfortably in your chair. And as you return to rest, you can begin noticing the feelings, and sensations in your body right now. Just notice some of the sensations that you can be aware of right now. For instance, as you keep listening to me you may become aware of the sensations as you breathe, noticing, for example, that the sensations are different when you breathe in **[timed to inhalation]** *and breathe out* **[timed to exhalation**].

*Just notice those feelings as you breathe in **[timed to inhalation]** and breathe out **[timed to exhalation]**, and fill your lungs; and then notice the sense of release, as you breathe out* [**said while exhaling simultaneously with the students**]. *And now I'd like you to concentrate particularly on the feelings in your toes and feet. Just allow all the muscles and fibres in your toes and feet to become very deeply relaxed. Perhaps even picturing what that would look like, for all those little muscles and tissues to relax, loosely and deeply. Allowing yourself to get the kind of feeling you have when you take off a pair of tight shoes that you've had on for a long time. And you can just let go of all the tension in your toes and feet, and feel the relaxation spread up through your body.* **[Carry on with the hypnosis session where you were interrupted from here]**

3. A student becomes distressed:

*"It's ok if you feel a bit sad when you start to relax. **[Pause]** Sometimes feelings can be overwhelming when we start to relax and unwind. That's why, when you are in hypnosis, I ask you to imagine yourself in a safe place where you are comfortable. This safe place is personal to you, but I want it to be somewhere that you feel safe, secure and in complete control of your feelings. **[Pause]** You know where you feel safe, secure and happy, and I want you to imagine that you are there in that place as we focus on this hypnosis session which is going to help all of you to prepare for your exams. **[Pause]** So, as you imagine your safe and secure place I'm going to ask you to continue to breathe deeply in **[breathing in with students]** and breathe deeply out **[breathing out with students]**.*

I'm going to ask you to re-focus by settling back comfortably in your chair. And as you return to rest, you can begin noticing the feelings, and sensations in your body right now. Just notice some of the sensations that you can be aware of right now. For instance, as you keep listening to me you may become aware of the sensations as you breathe, noticing, for example, that the sensations are different when you breathe in **[timed to inhalation]** *and breathe out* **[timed to exhalation**].

*Just notice those feelings as you breathe in **[timed to inhalation]** and breathe out **[timed to exhalation]**, and fill your lungs; and then notice the sense of release, as you breathe out* [**said while exhaling simultaneously with the students**]. *And now I'd like you to concentrate particularly on the feelings in your toes and feet. Just allow all the muscles and fibres in your toes and feet to become very deeply relaxed. Perhaps even picturing what that would look like, for all those little muscles and tissues to relax, loosely and deeply. Allowing yourself to get the kind of feeling you have when you take off a pair of tight shoes that you've had on for a long time. And you can just let go of all the tension in your toes and feet, and feel the relaxation spread up through your body.* **[Carry on with the hypnosis session where you were interrupted from here]**

[If students are still upset then your co-therapist can take them out of the room and debrief. They need to stay with the student until the student is feeling better]

4. A student doesn't end the hypnotic experience initially:

"I know you are having a wonderful time relaxing in hypnosis, but it is now time to leave hypnosis and to re-focus on your day at school. I am going to give you one more minute to enjoy the hypnosis, and remember that you can come back to hypnosis any time you want to enjoy this feeling of relaxation again. So, in thirty more seconds I am going to count backwards from five to one and, when I reach one your attention will be fully back to this room...and you will feel refreshed and alert…ready to continue with the rest of your day's activities ***[Pause for 20 seconds]***

[In a firm, authoritative, slightly louder voice]

Five…
Four…
Three
Two...open your eyes
One… your attention has returned back to the room and you feel refreshed and alert, ready to continue with the rest of your day.

Now have a good stretch

Acknowledgements

The following text was used to aid the writing of this manual:

Hammond, D. C. (Ed.). (1990). *Handbook of Hypnotic Suggestions and Metaphors*. London: W.W. Norton.

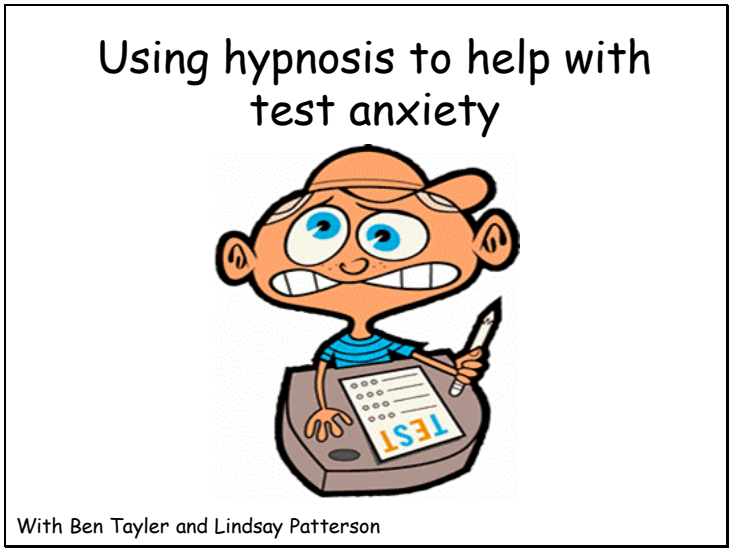
With further thanks to Dr. Christina Liossi for her support and advice on the production of this manual.

APPENDICES

Appendix H

Presentation to participants

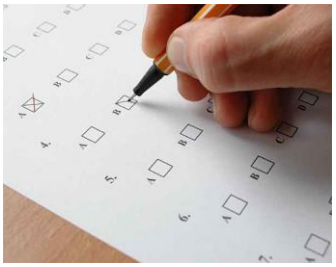
Slide 1



Slide 2

Slide 3

Why are you here?



Slide 4

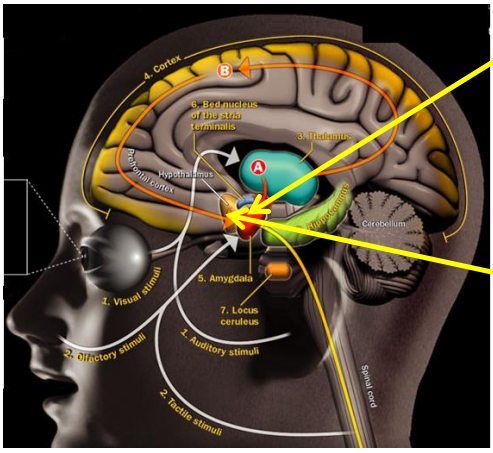
What is test anxiety?

Test anxiety is what we call getting worried about tests or exams.

Unfortunately if we get too worried about tests or exams it can make it harder to do well in them.

Slide 5

Test anxiety and our brains



The amygdala is our 'fear centre', It sends messages to our body to prepare it for something frightening.

The hypothalamus tells our adrenal glands to send lots of stress hormones (adrenaline and cortisol) round our body – we go into 'fight or flight' mode

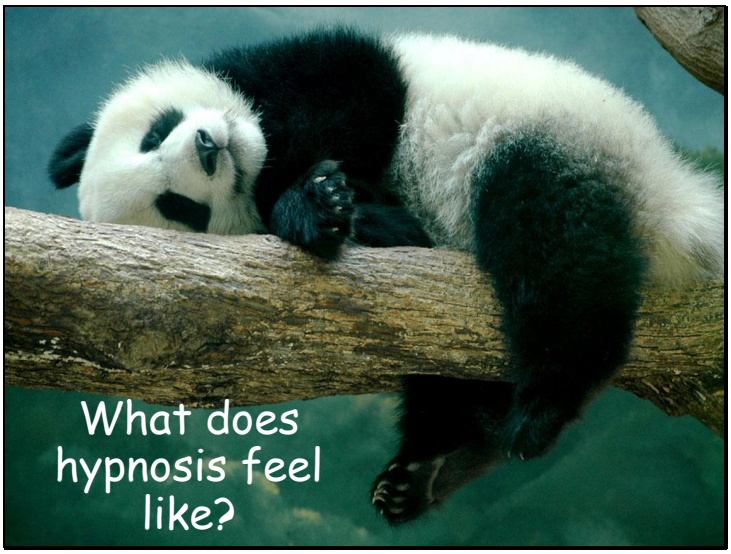
Slide 6

How can test anxiety affect us?

This is ok if we have to run away from a tiger, but it's not very helpful during an exam……

Slide 7

Slide 8



Slide 9

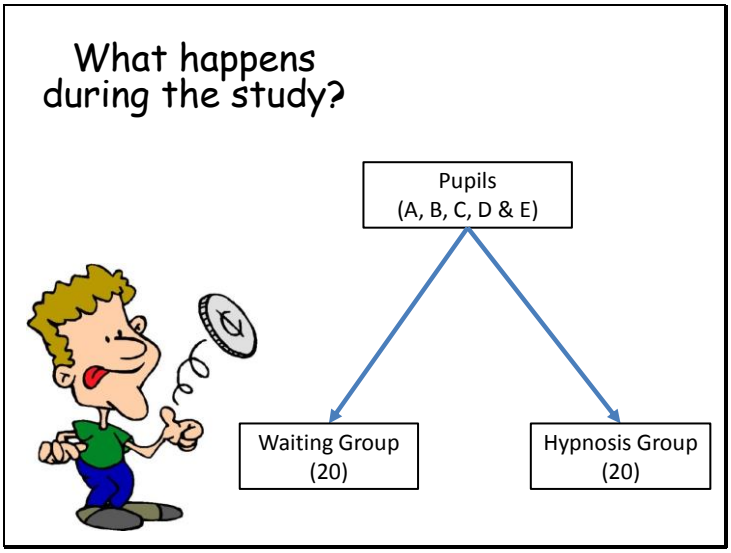
What happens during the study?

- ✓ Complete initial test anxiety questionnaires
- ✓ Receive permission from your parents/carers for you to take part
- ✓ Receive your agreement to take part
- ❑ We 'randomise' you into different groups (Hypnosis group or Waiting group)
- ❑ Hypnosis group receives hypnosis training (delivered by Ms Walters) and first interview before Christmas
- ❑ Hypnosis group have second & third hypnosis training after Christmas
- ❑ Tests in January & both hypnosis and waiting groups complete second set of questionnaires
- ❑ Hypnosis group invited to a second interview
- ❑ Waiting group receives hypnosis training

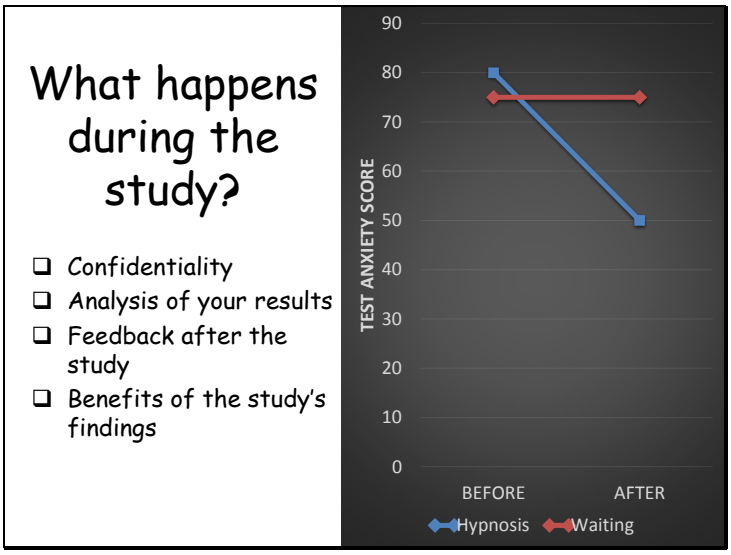
Slide 10

Why do you have to be 'randomised'?

Slide 11



Slide 12



Slide 13

APPENDICES

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