

**Turning a Negative to a Positive. Can Passive
Procrastinators develop into Active Procrastinators?**

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ABSTRACT

Recent research has revealed three different styles of procrastinating behaviour, the maladaptive passive procrastination and the more effective non procrastination and active procrastination. The present study investigated whether individuals changed their procrastination style as they progressed through secondary school and third level education. Contextual and demographic factors were also considered. Second and third level students completed the Decisional Procrastination Questionnaire and the Active Procrastination Measure. Biographical data was also collected. The results indicated that procrastination style is not affected by progress through the education system, age, the level of parents' education or by the number of their siblings. Higher levels of active procrastination were seen in participants who were in an exam year. This suggests that procrastination can change to more adaptive forms as a response to external factors.

INTRODUCTION

Ellis and Knaus (1977) defined procrastination as referring “to the postponement of academic goals to the point where optimal performance becomes unlikely.” Steel (2002) adds to this definition the idea that this postponement is irrational. “...to procrastinate is to voluntarily delay an intended course of action despite expecting to be worse off for the delay.”

Procrastination is a widespread form of behaviour (O’Brien, 2002) which has been shown to cause both material problems to the individual (McCowen & Johnson, 1989) and affective discomfort (Ferrari, Barnes & Steel, 2009). Despite this, procrastination remains an under researched area and little work has been carried out into methods for reducing procrastinating behaviour. Recent developments in the understanding of procrastination as a potentially positive behavioural style (Chu & Choi, 2005) require further investigation in the context of adolescence to establish whether it is possible for procrastinating behaviour to change from its negative form to the positive form. This will be the focus of the present study.

Research confirms that procrastination is highly widespread amongst the general population. Harriott & Ferrari (1966) found that 20% of the normal adult population procrastinates and McCowen & Johnson (1989) found that 25% of the population

reported themselves as serious procrastinators. Alexander & Onwuegbuzie (2007) stated that procrastination affects daily tasks and Schouwenburg (2004) reported that 20% of people procrastinate with paying bills and taxes.

There appear to be societal differences in the prevalence of procrastination. Hammer & Ferrari (2002) found higher levels of procrastination in white collar workers than in blue collar workers. They suggested that this difference may be related to the higher educational levels reported by the white collar professionals or to the higher levels of job insecurity felt by the blue collar workers. The current study will compare students in higher education and secondary school settings so Hammer & Ferrari's work would suggest that higher levels of procrastination may be seen in the higher education setting.

Ozer, Demir & Ferrari (2009) found a gender difference in academic procrastinating behaviour with procrastination more widespread in male Turkish university students than female Turkish university students. However findings in this area are mixed as many other studies have found that there was no gender difference in procrastination. (Effert & Ferrari, 1989; Rothblum et al., 1986; Solomon & Rothblum, 1984). A similar study with male and female Turkish high school pupils found no gender differences and attributed fear of failure, difficulty in making decisions, laziness, and risk taking as the reasons for procrastination. (Ozer, 2009)

Several researchers have investigated the cultural variations in procrastination. Procrastination was found to be equally common in the USA, UK and Australia (Ferrari,

O'Callahan & Newbegin, 2004) but Milgram, Dangour & Raviv (1992) found it to be less widespread in undeveloped countries. They linked the higher rates in technically advanced societies to the high level of commitments and deadlines required by the population.

Klassen, Ang, Wan Har, Krawchuk, Huan, Wong, (2009) looked at academic procrastination in a cross cultural context and found that Singaporean adolescents reported higher levels of procrastination and lower levels of self-efficacy for self-regulation than Canadian adolescents. They found that self-efficacy for self-regulation showed the strongest multivariate relationship with procrastination for adolescents in both settings while relationships between procrastination and the motivation variables showed similar patterns in Singapore and Canada.

In more recent years procrastination has been viewed as a more complex type of behaviour and different types of procrastination have been identified and it is the differences in procrastinating behaviour which will be the focus of this research. Knaus (2000) breaks procrastination down into two categories, differentiating between social and personal procrastination. Social procrastination he defines as being late in activities that involve others, he gives the examples of being late for appointments, for meeting friends or for completing work for a group project. Personal procrastination involves delaying action on matters that affect the self, such as failing to seek medical assistance or delaying beginning exam revision. A social procrastinator therefore causes problems

for others whilst personal procrastinators cause problems for themselves. Knaus points out that the two types of procrastination can co-exist in the same procrastinator.

Hammer & Ferrari (2002) outline three types of procrastinating behaviour. The first type is decisional procrastination, which has been defined as the “inability to make timely decisions in minor matters” (Milgram & Tenne, 2000). The second form is arousal procrastination. In this form delays are deliberately intended to bring about a ‘high’ in the individual when they complete the task in a rush. The third type is avoidant procrastination. In this case the behaviour is motivated by a desire to avoid feelings of failure. Avoidant procrastinators feel anxiety about their work being evaluated and to protect their self esteem they delay producing the work. (Ferrari, Özer, & Demir, 2009).

An important development in the understanding of types of procrastination has come from the work of Chu and Choi (2005). They have introduced a more complex account of procrastination allowing for two forms, traditional procrastination which they term passive procrastination, and a second, more positive procrastination in which the individual makes deliberate decisions to postpone the task and which allows for more successful outcomes. They have named this active procrastination. The current study investigates these two types of procrastination further.

The detrimental consequences of procrastination are well documented. 40% of serious procrastinators reported to McCowen & Johnson (1989) that they suffered financial loss as a result of their behaviour. Procrastinating on tax payments caused individuals to make

errors as they made the payments under time pressure. This cost them an average of \$400. Tax overpayments in the USA in 2002 amounted to \$473 million. (Kasper, 2004). Akerlof (1991) and O'Donoghue & Rabin (1999) also suggested that neglecting to arrange a pension or savings for retirement was a type of procrastination and one with serious consequences to the quality of life of the elderly.

Several researchers have highlighted the area of health as one that suffers in consequence of procrastination. (Morris, Menashe Anderson, Malinow & Illingworth, 1990; White, Wearing & Hill, 1994). Delays in seeking medical help and in following treatment can result in health problems that could have been prevented by early attention.

The general health of procrastinators is likely to be affected as well. Glen (2002) reported that procrastinators were more likely to have poor sleep patterns, higher rates of smoking and drinking. Digestive ailments and cold and flu symptoms were also mentioned as occurring with higher frequencies in procrastinating individuals.

Detrimental consequences, such as these to health and finances, make it unsurprising that 95% of procrastinators wish they could reduce the behaviour. (O'Brien, 2002) and individuals commonly characterize procrastination as being "bad, harmful and foolish" (Briody, 1980).

However, some positive results of procrastination have been found. In 1997 Tice and Baumeister found that procrastinators have lower stress levels and better physical health

than non-procrastinators while the deadlines are distant, although this reverses as the deadlines get nearer. Baumeister, Heatherton, & Tice (1994) suggested that procrastination was a strategy to reduce negative emotions albeit only in the short term.

David Futrelle (2005) also argues that positive benefits can derive from procrastination. He cites a professor at Stanford who wrote an essay on procrastination whilst avoiding working on a chapter of his book as an example of the tasks of either marginal or substantial use that procrastinators channel their energies into whilst they are avoiding working on the set task.

Bernstein (1998) also highlighted an advantage of procrastination; that of benefiting from new information that only becomes known close to the deadline.

“Once we act we forfeit the option of waiting until new information comes along. As a result no-acting has value. The more uncertain the outcome the greater may be the value of procrastination.” (Bernstein, 1998).

In an academic context this could lead to students benefiting from the experience of those who have completed the assignments earlier or extra help from teachers close to the deadline.

A high number of studies into procrastination focus on the area of academic procrastination. This uses samples from students from the school and college population and relates to academic behaviour. School and college life involves constant working to deadlines and procrastination can manifest itself in delays in studying for exams,

completing assignments or other administrative tasks relating to an individual's studies. Academic procrastination can lead to missed deadlines, missed classes and conflicts with friends, families or academic staff. Research in this area has revealed procrastination to be considerably more widespread in the academic field than in the general population. Schowenburg, Lay, Pychyl & Ferrari (2004) found that 70% of university students are procrastinators in academic matters. Ellis & Knaus (1977) and O'Brien (2002) found even higher levels, reporting that 80-95% of students procrastinate. Examining specific academic tasks it was found that 46% of university students procrastinated on writing assignments (Soloman & Rothblum, 1984).

In 1982 Aitken stated that 25% of students had a moderate or severe problem with procrastination and in 2000 Day, Mensink & O'Sullivan found that 50% of students procrastinate consistently and problematically. In a self report study 75% of college students considered themselves procrastinators (Potts, 1987). Gallagher, Golin, and Kelleher's research in 1992 found that 60% of the students they surveyed self reported a need for special help to tackle their procrastination. Pychyl, Lee, Thibodeau & Blunt (2000) reported that students claimed that procrastination takes a third of their day. Whilst delaying working on academic tasks the students mostly spent their time sleeping, playing or watching television, activities which are linked to their age and student lifestyle.

Academic procrastination was found to negatively affect students' academic achievement and quality of life (Moon & Illingworth, 2005; Taraban, Maki & Rynearson, 1999;

Tuckman, 2002). In the area of exams findings have so far proved inconclusive. Pychl, Morin & Salmon (2001) were unable to find a relationship between procrastination and exam performance whilst two years later Zuriff (2003) demonstrated that procrastination did have a relationship to poor exam results.

Beyond merely documenting the existence of procrastination it is important to identify factors that have been found to correlate with it. A lot of the research in the area of procrastination has looked at its correlations. Findings have demonstrated procrastination's relationship to various personality traits, cognitive abilities, affective states and demographic details.

Several studies have highlighted personality traits that appear to have a relationship to procrastination. In the 1930s Allport introduced the concept of personality consisting in a number of traits, which are defined by their frequency, intensity and by the range of situations in which they appear. These traits act as a mediator between stimuli and responses. Factor analysis developed trait theory to identify dimensions, which are groups of traits that correlate with each other. The current study is concerned with the question of whether procrastination changes over time so an important aspect of trait theory is that while traits are considered to be fairly stable they can change, and some traits, such as extroversion, are more prone to change than others. (Casi & Roberts, 1999).

In his meta-analysis Steel (2002) found task aversiveness, task delay, low self- efficacy, impulsiveness and low conscientiousness to be strong predictors of procrastination. These findings support the work of Tang et al (2008) who identified self efficacy as negatively correlated to procrastination, along with that of Chu & Choi (2005) who claimed that weak self efficacy correlated with traditional (passive) procrastination.

Milgram & Tenne (2000) argue that the different forms of procrastination have different correlates. They identify relationships between neuroticism and decisional procrastination and between conscientiousness and task avoidant procrastination. Effert & Ferrari (1989) related decisional procrastination to low self esteem and Steel, Brothen & Wambach (2001) found correlations between self concept and procrastination. Hess, Sherman, and Goodmand (2000) found a relationship between academic procrastination, neuroticism and being a night person. These may be relevant to the high levels of academic procrastination found in university settings since it has been found that there is an evening orientation among undergraduates (Adan & Natale, 2002). Diaz-Morales, Ferrari & Cohen (2008) also found this significant correlation between procrastination and a preference for a certain time of day. Their research found that avoidant procrastination related to being a ‘night person’.

Ferrari & Diaz-Morales (2007) looked at procrastinators’ locus of control. They found that avoidant procrastinators commonly exhibited an external locus of control and a fatalistic view of time. They felt that fate and predestination controlled their actions and their outcomes and that they were not personally in a position to affect the situation. As a

result they sometimes felt pessimistic about the future. Rothman, Soloman & Murakami (1986) found that high procrastinators were more likely than low procrastinators to attribute exam success to external factors. Ferrari & Diaz-Morales (2007) contrasted this attitude with that of the arousal procrastinator, who they found had a hedonistic risk taking attitude towards life and low orientation towards thinking about the future.

Ferrari (1991) suggested that procrastinators were using a downward social comparison rather than appropriate self evaluation. This allowed them to avoid forming a negative self concept by comparing themselves with those whose situation was worse than their own.

Further research (Ferrari & Tice, 2000) found that procrastination was affected by motivation levels. The study found that procrastination levels were lower in students who believed that their performance would be evaluated than in those who believed their work would not be evaluated. Similar results were found by Senecal, Lavoie, and Koestner (1997). The current study will include participants who will be taking state exams at the end of the academic year. Their levels of procrastination will be compared with the rest of the sample.

Brownlow & Raesinger (2000) looked at the effects of internal and external motivation on academic procrastination amongst college students. Internal motivation describes the individual's own drive to complete the task while external motivation refers to environmental factors such as monetary rewards and deadlines. They found that the

tendency towards procrastination was increased by low extrinsic motivation combined with perfectionism and an external locus of control. They showed the tendency to attribute their successes to impersonal causes such as luck and so felt they had not played an active part in their achievements. Students who only displayed low levels of procrastination were found to be more motivated by intrinsic and extrinsic motivation than the rest. Joseph Ferrari found that he decreased procrastination in his university classes when he offered bonus points for the early submission of work. 80% of a class submitted by the course midway point in order to qualify for the bonus points rather than the 50% who would usually submit by that point. (Hoover, 2005) The current study will examine the effects of an extrinsic motivational factor on procrastination as some of the sample will be studying in an exam year.

Further research found a relationship between procrastination and a past orientation. Janis & Mann (1977) explained procrastination as a result of thinking about past experiences which the individual values negatively. Ferrari & Emmons (1995) theorized that chronic procrastinators had a preference for short term pleasure and rewards over future goals. A theory which Knipe (2009) took further by suggesting that procrastination constituted a type of addiction. He said that procrastinators chased short term gains at the expense of more valuable long term ones. Knipe noted that as with other types of addict procrastinators can suffer a loss of self esteem.

Some gender differences were identified relating to the causes of procrastination. Ozer, Demir & Ferrar (2009) found more females reporting that their procrastination was due to

fear of failure and laziness while males attributed their procrastination to risk taking and rebellion against control.

Procrastination has been found to correlate to a number of cognitive issues. Dewitte & Schouwenburg (2002) found procrastinators had damaged organisational functioning and that this resulted in poor performance. While Effert & Ferrari (1989) highlighted a tendency toward cognitive failures such as forgetfulness as a factor in the slower work rate and impatience of a decisional procrastinator. Knaus (2000) stated that procrastination was found in those with dysfunctional cognitive behaviour avoidance processes, with a complex change resistant process and he highlighted that procrastination was more common in those who received rewards for the behaviour such as group work team mates doing their work for them.

Several studies identified emotional states that were commonly found in procrastinators with many researchers reporting findings that procrastinators are more unhappy than non-procrastinators. (Knaus, 1973, Lay & Schouwenburg, 1993; Tice & Baumeister, 1997).

Rawlins (1995) found anxiety and depression to be positively correlated with procrastination. This is supported by Soloman & Murakami's 1986 study which found high procrastinators, particularly female high procrastinators, to experience more feelings of anxiety and more physical symptoms of anxiety than low procrastinators. Soloman, Murakami, Greenberger & Rothblum's work in 1983 suggested that the high levels of anxiety experienced by procrastinators served an important role in the task completion

process. They found evidence to suggest that the procrastinators only ceased delaying when their anxiety levels reached their peak.

Ferrari, Barnes & Steel (2009) found that regret was more common in certain areas of life for procrastinators. In the areas of educational pursuits, which will be the concern of the school children and college students in the present study, parenting, family and friend interactions, health and wellness, and financial planning procrastinators showed higher levels of regret than non-procrastinators. However no significant difference in the levels of regret was found in relation to feelings about romance, career planning, and spiritual and self-improvements.

Tice, Bratslavsky, & Baumeister (2001) claimed that emotional distress caused the individual to lose the motivation to regulate their behaviour. They argued that the distressed individual no longer cares about the benefits their behaviour might bring and so they no longer bother with self regulation. This lack of self regulation in turn leads to procrastination.

Several studies have looked at the relationship between procrastination and demographic and details relating to context. Rawlins (1995) found differences in the experience and manifestation of procrastination in middle school aged children and college aged adults

Hammar & Ferrari (2002) found that in decisional procrastination level of education was a significant factor. College or post college educated individuals reported less indecision than those without a college education.

Davis (2001) was unable to support his hypothesis that culture would affect procrastinating behaviour and concluded instead that academic procrastination among the high school pupils in the sample was principally a function of social status, parenting styles and the pupils' perception of the opportunities and fair play offered by the institutions.

The family context's relationship with academic procrastination was explored by Nadeau, Senecal & Guay in 2003. They found that the quality of the relationship between parents and children and the child's level of self determination in family activities were both positively associated with the child's level of self system processes, by which they mean autonomy competence and relatedness. They found that these self system processes were negatively associated with academic procrastination. This study will look at the family context as a potential influence on the individual's procrastinating behaviour.

Senécal, Julien, & Guay (2003) looked at procrastination and self-determinism. Self determinism refers to whether the individual feels that they are acting out of personal choice or interest (self determined) or whether they feels they are acting in response to external motivations, such as rewards or internal motivations, such as guilt. They found that amongst the university sample that they surveyed low self determinism had a tendency to lead to role conflict in which students were conflicted over whether to respond to the demands of their studies, such as deadlines, or the demands of their

personal life, such as friends who want them to socialize. This role confusion then lead to higher levels of procrastination.

On a similar theme Rosario, Nunez, Salgado, Gonzales-Pianda, Valle & Joly (2008) found that procrastination decreases in school children when their parents have a college education. They also found that the more siblings the child had and the more they exhibited underachievement academically the higher the level of procrastination they displayed. This issue will be looked at in relation to passive and active procrastination in the present study.

Research carried out by Milgram, Mey-Tal, & Levison (1998) cast some doubt on the role of parents in their children's procrastinating behaviour. They asked university students and their parents to report on the students' procrastination habits as a child and the parents' level of involvement in the child's various activities. They found that the parents, especially the mothers, were highly involved in the child's behaviour at home but not with the child's activities at school. Despite this procrastination was found to be generalised with procrastinators exhibiting procrastination to a similar extent both at home and at school. This suggests that the role of the parent is not significant in the child's procrastinating behaviour.

Muszynski & Akamatsu (1991) found demographic and context variables, such as living close to the university and having a supportive advisor correlated with PhD student's procrastination in completing their thesis.

Prohaska, Morrill, Atilas & Perez (2000) found age to be a significant factor in procrastination levels finding lower levels of academic procrastination in older students from a sample of university psychology students and community college students. They found that being the first member of the family to attend college or university did not significantly effect the procrastination levels. The affect of age on procrastination will be examined in the current study.

There has been little work done into strategies to change procrastinating behaviour despite the detrimental effects that have been shown to result from it. The present research hopes to provide a basis on which future change strategies for parents and teachers to use can be based.

Knaus (2000) put forward a 5 phase framework for overcoming procrastination. He proposed that learning new study skills and adopting his “do it now” techniques would reduce procrastination. These new skills should then be practiced until they became a consistent extension of themselves. His five phases are Awareness, when procrastination patterns are recognized, Action, which involves taking the behavioural steps of the “do it now” programme, Accommodation, in which the new behaviour is practiced, Acceptance, in which relapse is accepted, and Actualization, at which point the individual is able to live as a non-procrastinator.

Professor Lay in Toronto runs a support group for procrastinators that focuses on low conscientiousness as being an important correlate of procrastination. His 10 step

programme encourages the students to spend more time on important tasks and to work without waiting to be in the mood for working. (Fillion, 2006).

These programmes run contrary to the recommendations of Joseph Ferrari who believes that time management techniques cannot help a chronic procrastinator.

"Telling a chronic academic procrastinator to 'just do it' is not going to work," Mr. Ferrari says. "It's like telling a clinically depressed person to cheer up." (Hoover, 2005).

Cook (2000) found that procrastinating behaviour reduced when procrastinators' counsellors asserted that it was important not to specify a cause for the procrastination as opposed to agreeing or disagreeing with their clients theories as to causes.

The research of Shoham-Salomon, Avner & Neeman (1989) worked with participants with low reactance, which they defined as, "a state of mind aroused by a threat to one's perceived legitimate freedom, motivating the individual to restore the thwarted freedom". They found that the participants responded well to paradoxical interventions in which they were asked to force themselves to procrastinate, to ruminate and not study for half an hour each day for 6 days of the week. On the 7th day they could choose either to study or not study. Reactant participants reported reduced procrastination up to 4 weeks after the experiment,

None of the existing programmes to help procrastinators to manage their behaviour have

been designed with the distinction made between passive and active procrastination. It is possible that it may be an easier and more attainable transition for an individual displaying passive procrastination and suffering negative consequences to develop into active procrastination which will remove the negative results than to cease procrastination. However, the current study will not attempt to bring about change but rather to observe whether change occurs from passive procrastination to active procrastination or non procrastination. Identifying factors which are significant to any changes will also be an important part of the current study and will be important to inform any future programmes.

Active procrastination was discovered in a strand of research which is fundamental to the current study, research which has investigated potentially positive aspects of procrastination. In 2005 Chu & Choi demonstrated that procrastination could be a positive behaviour. They differentiated between what they termed active procrastination (positive) and passive procrastination (negative). Whilst passive procrastinators behaved in the traditionally accepted model, delaying work, producing poor quality work and often failing to complete work in time for deadlines, active procrastinators were found to make a choice to procrastinate, to have a preference for time pressure and to produce satisfactory work and to meet deadlines.

“although active procrastinators reported the same level of procrastination as did their traditional or passive counterparts, they demonstrated time perceptions, attitudes,

coping styles, and academic performance that were nearly identical to (and in some cases even better than) those of non procrastinators.” (Chu & Moran, 2009).

Chu & Moran’s 2009 research confirmed the findings of the 2005 study and also found that active procrastination had a relationship to 2 of the big five personality traits. Active procrastination was positively correlated with self reliance and stability and with active and energetic engagement with others and the task in hand.

Whilst Chu & Choi have demonstrated the existence of the three styles of procrastinating behaviour there has been no research carried out into whether individuals can develop from one style to another. There would be social benefits to discovering whether an individual who initially exhibits a passive procrastination style might later in life exhibit an active procrastination style. Moreover, if this change were possible it should be investigated what factors might bring about this desirable change. To this end, the current study aims to investigate whether changes in active, passive and non-procrastination styles occur between the first year of secondary school and the second year of college education. It will also investigate the relationship between procrastinating behaviour and age, motivation, number of siblings and the educational background of the individual’s parents.

Since research has shown a link with procrastination and low academic performance, financial loss, health issues and quality of life any research that extends current understanding in this area is valuable. Information on the changeability of procrastinating

styles and any correlating factors that accompany this change may go onto inform interventions to encourage change from passive procrastination to active procrastination or non-procrastination.

Participants will complete the Chu Active Procrastination Scale (Chu & Moran, 2009) and the Decisional Procrastination Scale (Mann 1982), which are the same scales used by Chu & Moran (2005), to identify them as Active Procrastinators, Passive Procrastinators or Non-Procrastinators. Scores will be summed and converted into a score out of 5 for each test. The participants will be male and female pupils from 1st year, 2nd year, 5th year and 6th year of secondary school and students from the 1st year of a full time degree programme. Both institutions are located in Dublin's city centre.

Hypothesis 1:

It is hypothesised that a significantly higher number of participants will report active procrastination at 5th, 6th year secondary and 1st year third level than in lower years.

Hypothesis 2:

It is hypothesised that a significantly higher number of participants will report active procrastination in exam years (4th and 6th) than in non-exam years.

Hypothesis 3:

It is hypothesised that a significantly higher number of participants will report passive procrastination at 1st, 2nd and 3rd year secondary than in higher years.

Hypothesis 4:

It is hypothesised that individuals with parents who attended university will report less passive procrastination than other individuals.

Hypothesis 5:

It is hypothesised that individuals with two or more siblings will report more passive procrastination than individuals with one or zero siblings.

METHOD

Materials

The study used two existing psychological measures and collected biographical information. The Decisional Procrastination Questionnaire was developed by Mann in 1982 to measure traditional procrastination. Choi and Moran used the Decisional Procrastination Questionnaire to measure passive procrastination in their 2009 research, '*Why Not Procrastinate? Development and Validation of a New Active Procrastination Scale*' The measure uses 5 items scored on a 5 point Likert scale ranging from 1 (not true for me) to 5 (true for me). Scores were summed to give an overall score for passive procrastination, with higher scores denoting higher levels of passive procrastination. The Decisional Procrastination Questionnaire has a Cronbach Alpha of .74.

Active Procrastination was measured using Choi and Moran's Active Procrastination Scale (2009). This scale comprises 40 items which measure task failure (10 items), outcome satisfaction (10 items), intentional procrastination (10 items) and a preference for pressure (10 items). The items are statement such as "I prefer tasks with specific deadlines" and "I want to change my bad habit of doing things at the last moment." The scale uses a 5 point Likert scale ranging from 1 (not true for me) to 5 (true for me). Scores can be summed for each category and to give an overall score for active procrastination. The higher the score the higher level of active procrastination exhibited by the participant. Choi and Moran (2009) found the four dimensions of their scale to have a Cronbach Alpha ranging between .70 and .83.

The third section of the questionnaire collected the biographical details of the participants' age, school year, number of siblings and the highest level of education achieved by both their mother and father.

The questionnaires were administered along with a cover letter explaining the purpose of the research. A copy of the questionnaire and the cover letter can be found in the appendix.

Participants

106 participants took part in this study. of the participants were secondary school pupils. There were 11 first year pupils, 7 second year pupils, 19 fifth year pupils and 21 sixth year pupils. There were also 48 third level students in their first year of a business studies degree programme. Participants were sourced from a secondary school in Dublin, and from a third level private college in Dublin. Participation was voluntary and no incentives were offered.

Design

This study was a between groups experimental design. The criterion variable was whether the participant was an active procrastinator, passive procrastinator or non procrastinator. This was measured by the scores of section B and section C of the questionnaire. The predictor variables were the participants' age, school year, whether they were in an exam year, the number of siblings that they had and the highest level of

education achieved by their mother and father. These variables were measured by section A of the questionnaire.

Procedure

The researcher attained permission from the secondary school to distribute parental consent forms to the pupils in years 1, 2, 5 and 6. Pupils who returned a consent form signed by their parents were invited to attend a research session held in the school during the school day. At the research session the researcher explained the purpose of the study and gave instructions for completing the questionnaire. She remained on hand to answer any queries while the questionnaires were filled out. Participants were given as long as they needed to complete the questionnaires and the maximum time needed was 15 minutes. After the final questionnaires were collected in the participants were thanked and debriefed.

In the third level college permission was also attained to use the first part of business studies lecture for first year degree students to introduce the study and distribute questionnaires to any students willing to participate. As in the secondary school, the researcher was on hand throughout to answer queries and the procedure was as outlined above. All participants, in both the school and the college, completed the same questionnaire with one question altered. The first question asked the school pupils to identify which school year they were in, 1-6, and this was changed to ask the college students which year of study on their degree programme they were in, 1-3.

RESULTS

The data was analysed to investigate the variations in procrastinating behaviour across the school years and age range. Differences in procrastination were also examined according to number of siblings and level of parent's education.

Percentages of the different procrastination styles were calculated for each school year.

These are shown in Table 1 and Figure 1 below.

Table 1

Frequencies of procrastination styles for different school years.

School Year	Passive Procrastination	Active Procrastination	Non Procrastination	Active & Passive Procrastination
1st	4 36.36%	3 27.27%	3 27.27%	0 0%
2 nd	2 28.57%	0 0%	3 42.86%	1 14.29%
5 th	2 10.53%	5 26.32%	4 21.05%	4 21.05%
6 th	4 19.05%	10 47.62%	6 28.57%	0 0%
2 nd Year College	13 27.08%	11 22.92%	8 16.67%	11 22.92%

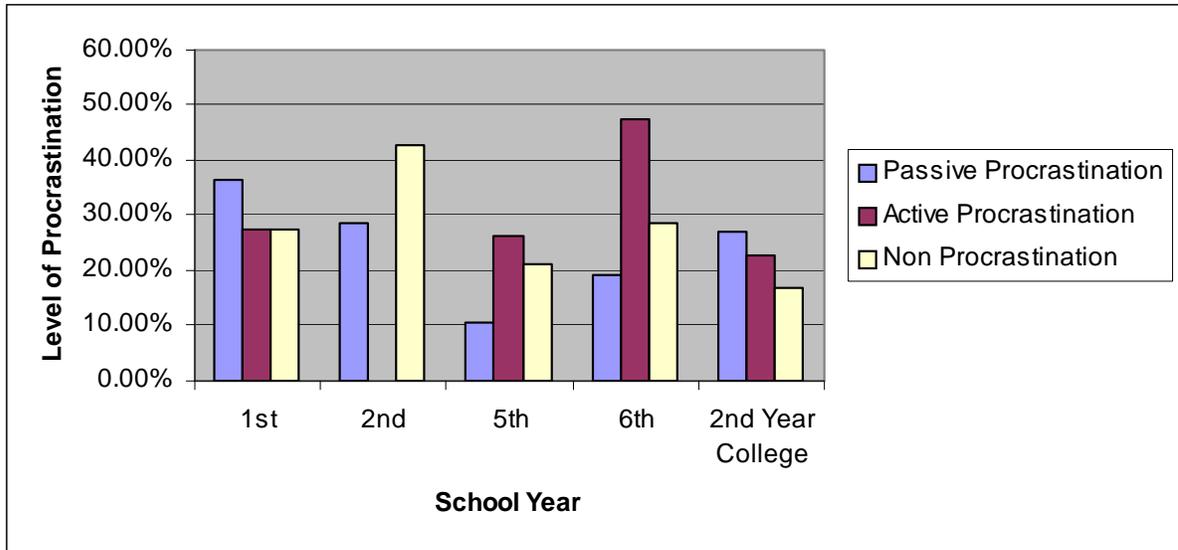


Figure 1

Percentages of procrastination styles for different school years

These showed high levels of passive procrastination in first year school pupils (36.36%), an increase in non-procrastination in second year school pupils (42.86%) and an increase in active procrastination in sixth year school pupils (47.62%).

The differences between the groups were compared using a Kruskal Wallis test and no significant differences were found. [(1st years, n=11, 2nd years, n=7, 5th years, n=19, 6th years, n=21, College, n=48), $X^2 = (3, n=107) = 3.754, P=.289$].

Table 2 shows the descriptive statistics for procrastination styles for different ages.

Table 2

Descriptive Statistics of procrastination styles and age.

	N	Mean	Minimum age	Maximum age
Passive Procrastinators	25	19.56	12	30
Active Procrastinators	29	19.62	13	43
Non Procrastinators	23	17.70	13	28
Active & Passive Procrastinators	15	20.07	14	27

A One Way Analysis of Variance was conducted on the data to compare procrastination type across the different ages but no significant differences were found between the means. [F (4, 99) =.828, P=.510].

A Chi Square found significant frequencies occurring in procrastination style when participants were grouped as being in an exam year or not in an exam year, $X^2(4, n=106) = 9.513$; $P = .049$. Monte Carlo sig (2-sided) .37.

Chi Square tests found no unexpected frequencies in procrastination style when participants were grouped by the education levels of the participants' fathers [$\chi^2(12, n=75) = 11.999, P=.446$] or mothers [$\chi^2(12, n=80) = 21.771, P=.04$. Monte Carlo = .056]. The data was recoded into a new variable indicating the highest level of education of either the mother or father but a Chi Test again showed no unexpected frequencies in procrastination style. [$\chi^2(12, n=71) = 18.397, P=.104$].

Finally participants were grouped according to the number of siblings they had and a One Way Analysis of Variance demonstrated no difference between the means when procrastination style was examined [$F(4,100) = .738, P=.568$].

DISCUSSION

The present study examined whether maladaptive passive procrastination may develop into the more effective active procrastination or non-procrastination styles as the individual progresses through the education system. It also studied the role that age or the motivational factor of an upcoming exam might have in any changes in procrastination. Finally it examined whether the number of siblings or level of parents' education had a relationship with procrastination style. The level of active procrastination was measured using the Measure of Active Procrastination (Choi & Moran, 2009) Respondents who scored 3/5 or higher on the test were classified as active procrastinators. The level of passive procrastination was measured using the Decisional Procrastination Questionnaire (Mann, 1982). Respondents scoring 3/5 or higher on this test were classified as passive procrastinators. A score of less than 3/5 on both measures classified the participant as a non-procrastinator. Some respondents' scores were 3/5 or higher on both tests and so a fourth category, active and passive procrastinator, was created

No significant difference was found between the procrastination styles of the different school years. Although descriptive statistics showed a reduction in levels of passive procrastination after the first year of secondary school a Kruskal Wallis test did not find the differences to be statistically significant. Active procrastination peaked in the sixth school year but fell to lower levels again in the second year college sample. The highest levels of non-procrastination were seen in the second year of secondary school but non-

procrastination dropped to its lowest levels in the second year of college sample. The first hypothesis, that a significantly higher number of participants will report active procrastination at 5th, 6th year secondary and 1st year third level than in lower years, and the third hypothesis, that a significantly higher number of participants will report passive procrastination at 1st, 2nd and 3rd year secondary than in higher years, were not supported by the data.

The ages of participants ranged from 12 years to 43 years and the variation in procrastinating behaviour across the age range was examined. A One Way Analysis of Variance found no differences between procrastination styles across the age range.

This suggests that merely going through the education system does not result in improved procrastinating behaviour. Similarly, just getting older does not lead to an improvement. This differs from Rawlins' 1995 research which showed differences in the manifestation of procrastination in middle school aged children and college aged adults. The present study revealed no significant differences in the current sample between the two levels of education.

The second hypothesis, that a significantly higher number of participants will report active procrastination in exam years (4th and 6th) than in non-exam years, was supported. 6th year, Leaving Certificate pupils showed higher levels of active procrastination (46.2%) than any other school or college year.

The high levels of active procrastination exhibited amongst the exam year respondents suggests that some pupils have changed their procrastinating behaviour from previous years. Since active procrastination levels fell to 22.92% in the college sample this rise can be attributed to the temporary motivational factor of the Leaving Certificate exam rather than to the developmental process.

Ferrari & Tice's research in 2000 found higher levels of traditional procrastination when work, was due to be examined or evaluated. Amongst the 6th school year sample the prospect of their exams seems to cause the pupils to delay starting their work but not to the extent of being damaging to their performance. Active procrastination may even be a more beneficial style of procrastination than non procrastination in a stressful exam year since according to Baumeister, Heatherton, & Tice (1994) by shortening the amount of time spent on unpleasant tasks procrastination reduces negative feelings and allows more short term enjoyment.

Chu & Moran (2009) argued that one of the characteristics of active procrastination is an ability to prioritize tasks. This could account for the increase in its appearance in the exam year as the students may be prioritizing school work now that it is deemed important in a way that previously they did not consider justified.

As the levels of active procrastination increased in the sixth school year respondents' a decrease in the levels of passive procrastination would be expected. In fact the passive procrastination levels for sixth school year respondents were higher than for the fifth

school year group, although lower than all other school years. Non Procrastination levels had risen from the previous year for the sixth school year participants however non procrastination peaked in the second school year group which exhibited the highest levels of non procrastination (42.86%).

This may suggest that whilst the pressure of the upcoming exam causes a large number of pupils in the exam class to make extra efforts in their work and to treat deadlines more seriously it has the opposite effect on a smaller section of the class. The 6th school year pupils who become passive procrastinators in their exam year may do so as a response to feelings of low self efficacy in the face of an exam they perceive as important and challenging. This would be supported by the findings of Steel (2002), Tang et al (2008) and Chu & Choi (2005), all of whom found low self efficacy to be a predictor of traditional or passive procrastination.

Alternatively the reduction in passive procrastination seen in the 5th school year could be a response to the start of the Leaving Certificate course. The Irish Leaving Certificate is studied over two academic years. 5th year pupils may begin the course of study with high levels of interest, enthusiasm and with high expectations for their own performance. Chu & Moran (2009) found that active procrastination was more prevalent when there was active and energetic engagement with others and the task in hand.

By the 6th school year the group who have become passive procrastinators may have found that their interest and enthusiasm has waned with time and that poor grades they have received may have damaged their hopes for good results. From Ferrari & Diaz-Morales' work on procrastination and locus of control (2007) it appears that pupils who feel that their future grades are a foregone conclusion and that they will not be able to improve on their standard to date will exhibit high levels of avoidant procrastination. Rosario et al (2008) found that poor academic performance leads to increased procrastination. Studying active, passive and non procrastination in exam years and tracking students grades would be an area for future research.

The findings of Rosario et al (2008) were not supported when passive and active procrastination were considered. While the original study found lower levels of procrastination in children whose parents had a university education, the current study found that the education level of the individual's parents did not affect the procrastination style. The fourth hypothesis, individuals with parents who attended university would report less passive procrastination than other individuals, was therefore not supported. The education levels of mothers and fathers were considered separately and combined but a Chi square test failed to demonstrate any significant difference in frequencies of procrastinating behaviour.

Rosario et al's findings (2008) also showed that the children with more siblings exhibited higher levels of procrastination. Again this was not found to be the case in respect of Chu & Choi's model of active and passive procrastinating behaviour (2005). A One Way

Analysis of Variance found no significant association between the number of sibling and procrastination styles. The fifth hypothesis, that individuals with two or more siblings would report more passive procrastination than individuals with one or zero siblings was not supported.

Harriott & Ferrari (1966) found that 20% of the normal adult population procrastinates. The percentage of overall population within this sample was considerably higher. The year groups varied between 57% (2nd school year) and 83% (2nd college year) procrastinators (both active, passive and active/passive combined). This is in line with the findings of researchers looking at academic procrastination, who found 70% levels of procrastination in university students (Schowenburg, Lay, Pychyl & Ferrari, 2004) and 80-95% (Ellis & Knaus, 1977 and O'Brien, 2002)

Aitkin's (1982) findings that 25% of university students have a moderate or severe problem with procrastination is similar to the levels of passive procrastination found in the present study. Of the college students 27.08% reported passive procrastination, which is the type of procrastination linked to negative outcomes. The numbers vary through the school years but remain between 10.53% and 36.36%.

The findings support Ferrari's theory (2002) that the high levels of procrastination in white collars workers might be due to the higher educational levels they reported. The present study shows a sharp increase in the overall levels of procrastination at third level to 83%, although only 27% of these students are passive procrastinators.

The results showed support for the work of Chu & Choi (2005) as the measures identified passive procrastinators, active procrastinators and non procrastinators. However the active procrastination measure (Choi & Moran, 2009) used in conjunction with the decisional procrastination questionnaire (Mann, 1982) did not separate the sample into three groups, active, passive and non procrastinators, but produced a fourth group who scored above 3/5 in both measures indicating that they have elements of both passive and active procrastination. This may either signal the existence of a combined procrastination style or denote invalidity in the Choi & Moran' measure.

A limitation of the current study is the high percentage of the sample that came from the second year college group (45%) compared to the smaller sized school year groups. There were 43 college based participants but the smallest school year group was the 2nd year sample which only had 7 participants. A larger sample with more participants in each of the school years would provide more valuable data.

The demographic of pupils from the secondary school that participated was quite different from that of the third level college. Differences in the participants' socioeconomic status may have been a confounding variable. Collecting data from school pupils and college students with similar demographic profiles would eliminate this threat. Alternatively research could be carried out in a number of second and third level institutions with a range of demographics represented.

In addition, Academic ability and achievement differed across the sample. College entrance requirements mean that the college sample will all have achieved a certain standard of academic achievement in their Leaving Certificate exams or Leaving Certificate equivalent exams whereas the secondary school respondents can be assumed to represent a wider range of academic performances.

The measures used, the Active Procrastination Scale (Choi and Moran, 2009) and the Decisional Procrastination Questionnaire (Mann, 1982) were both designed for use with an adult sample. Some rewrites were carried out to enable children as young as 11 years to understand the items but some children had to ask the researcher to explain some meanings. Furthermore it may be inferred that others may have had similar problems understanding but guessed at the meaning rather than asking for help. This could have lead to inaccurate results. Further rewrites to the measures would make them clearer to understand for all the age groups surveyed.

In addition, many of the children were unaware of their parents' educational backgrounds leading to a lot of missing data for the variables, mother's highest level of education and father's highest level of education. The majority of college students were able to complete the parents' education questions and so more of the data than would be expected comes from the college group. This information could perhaps have been collected directly from the parents as a section on the consent form to allow for a more accurate examination of the relationship between procrastination style and parents' education.

A significant difference was found in the exam class' procrastination behaviour and the non exam classes'. The only exam class in this study was sixth year school pupils who were preparing to take their Leaving Certificate exams. The findings would have been strengthened if the same results had been found with other exam classes, such as fourth years preparing for their Junior Certificate and final year college students preparing for their final undergraduate exams. This would eliminate the possibility that it is another feature of the sixth year secondary school pupils' environment that affects procrastination behaviour.

Participants from the school sample were required to return parental consent forms before participating in the study. This may be a source of bias and random selection of participants would better allow for generalisation of the results.

The findings demonstrate that age and progressing through the education system do not bring about an improvement in procrastinating behaviour. However the fact that a change in procrastination behaviour was seen in the respondents who were facing an important exam demonstrates that procrastination style is not a fixed characteristic. The change occurring in an exam year suggests that environmental factors, such as motivation levels can effect procrastination. It would be beneficial to investigate ways that the school environment could be adapted to prompt the pupils to learn better procrastination skills. Better understanding of the relationship between motivation and procrastination would allow this knowledge to be applied in the classroom and the syllabus. Further research

into the effect of other environmental factors, which have not been explored by this study, on procrastination could allow greater understanding of ways to assist children in developing better study skills.

The results of the present study show deterioration in procrastinating behaviour following the transition from secondary school to college. Passive procrastination increases by 8% while both active procrastination and non procrastination decrease. (22.92% active procrastination and 16.67% non procrastination). This shift from effective procrastinating behaviour towards maladaptive styles is surprising since more maturity and experience with an academic workload might have been expected to generate improvements in this area. The change could be due to the reduction in support and attention from the teacher / lecturer. Further studies could compare the procrastination styles of secondary school pupils with all years of undergraduate study since the present study doesn't indicate whether this drop is consistent throughout third level study or may be a feature of being midway through a longer course.

While the present study was a between groups study of pupils and students in different years of academic study a further research focus might be to examine procrastinating behaviour in a longitudinal study. Measuring the procrastination styles of the same participants when they are in first, second, fifth and sixth year of school and then in their second year of college would provide more detail on the extent to which their procrastination styles vary. Possible factors associated with the changes could also be considered.

Research carried out into the procrastination styles of primary school pupils would also be of interest to the area of procrastination. Irish primary school children are assigned homework tasks and these are probably the child's first experiences of having to manage their own tasks. These early habits could exert an influence on later behaviour. Identifying which variables are involved in forming an effective or ineffective procrastination style at this early age would enable parents to try to support their child in learning the most useful habits.

A final area for future research would be to investigate changes in procrastinating behaviour as participants move from education into the workplace. Identifying whether there is an improvement or deterioration in procrastination style after leaving the education system would be beneficial as would investigating whether the workplace offers motivation, such as promotions, pay rises, status or the threat of disciplinary action that improves procrastination and that is absent from the education system.

The results of the present study do not support the notion that maladaptive passive procrastination develops into active procrastination or non-procrastination with age or as the individual progresses through the education system. However the increase in levels of active procrastination seen in pupils in their exam year suggests that procrastination can change. This has several implications for psychologists whose further research should identify factors which can trigger this change and for the education sector who can use this knowledge to encourage children to develop good procrastination habits.

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APPENDICES

List of Appendices

Appendix A

Consent Form

Appendix B

Questionnaire

APPENDIX A

CONSENT FORM

Marino College has agreed to participate in a research project carried out by Carol Clifford. This research is an assessed component of a BA in Psychology at Dublin Business School. It is supervised by Martin Humphreys and the research has been approved by the Dublin Business School Research Committee. Pupils will need to have permission from a parent or guardian before they can participate so please read the following information to decide if you wish to give your permission.

The study is a questionnaire based survey examining learning styles of second level pupils and third level students. Pupils will be asked to provide some biographical details and then rate the frequency with which they carry out the study behaviours listed. Participation is entirely voluntary and participants are free to withdraw at any time. It will take approximately 15 minutes to complete the questionnaire and it will be given out in class time.

There are no foreseeable risks involved in participating in the study. The information gathered will be very useful in improving understanding of study habits. Data collection will be strictly anonymous and the information collected will not be associated with participants' names.

If you have any questions or comments, please contact Carol Clifford (carol.clifford@dbs.ie). You may also contact the faculty member supervising this work: Martin Humphreys (martin.humphreys@dbs.ie).

If you are happy to allow your child to participate in this research please complete the section below and return it to the school.

I agree that my son or daughter may participate in the study described above. [If you do not agree, simply do not return this form.]

Son or daughter's name [printed] _____
Your name [printed] _____
Your relationship to this pupil _____
Your signature _____
Date _____

APPENDIX B

The purpose of this study is to collect information on the learning styles of second level pupils and third level students.

In this study you will be asked to complete a questionnaire. It will be in three sections. In the first section you will be asked for some information about yourself and your family. In the second and third sections you will be asked to answer how often you behave or feel in the way described. You will not be asked to put your name on the questionnaire and the answers you give will not be connected with your name or identity.

The questionnaire should take approximately 15 minutes to complete. You can stop filling in the questionnaire at any time.

Thank you for your participation.

Learning Styles Questionnaire

Section A

Current School Year (circle answer)

1st 2nd 3rd 4th 5th 6th

Age (in years)

_____ Years

Number of brothers and sisters (circle answer)

0 1 2 3 4 Other number _____

Mother's education (circle highest completed)

Primary Secondary University Degree Postgraduate Don't know

Father's education (circle highest completed)

Primary Secondary University Degree Postgraduate Don't know

Section B

Please tick the appropriate box

	Not true for me	Often untrue for me	Sometimes true for me	Often true for me	True for me
I waste a lot of time on unimportant details before making a final decision.					
Even after I have made a decision I delay carrying it out.					
I don't make decisions unless I really have to					
I delay making decisions until it is too late.					
I put off making decisions.					

Section C

Please tick the appropriate box

	Not true for me	Often untrue for me	Sometimes true for me	Often true for me	True for me
I often start things at the last minute and find it difficult to complete them on time.					
It's hard to keep myself motivated while worrying about deadlines.					
When I feel there is no way that I can finish a task I've been given on time, I feel like giving it up.					
Even though I tend to work on homework or study for exams at the last moment, I'm still motivated to do my best.					
I don't do well if I have to rush through a task.					
Since I often start working on things at the last moment, I have trouble finishing them most of the time.					
I often fail to achieve goals that I set for myself.					
I'm often running late for getting things done.					
I delay making tough decisions because I'm afraid of not being able to complete them well enough.					
I have difficulty in finishing activities once I have started them.					
I'm not satisfied with the outcomes of my work if I put it off until the last moment.					

	Not true for me	Often untrue for me	Sometimes true for me	Often true for me	True for me
I find the rewards for working under deadlines is great.					
I often wish that I could start and finish my work earlier in order to achieve better performance.					
Most of the time I'm able to pull things off at the last minute.					
I tend to produce better results when I start working right before deadlines.					
I often feel that I could do better if I was given more time or I had started the task earlier.					
I want to change my bad habit of— doing things at the last moment.					
I achieve better results if I complete a task in a slower pace well ahead of the deadline.					
My performance tends to suffer when I have to race against deadlines.					
Having sufficient time to prepare for a task often improves my performance.					
When I'm rushed to finish a task, the outcome doesn't measure up to my ability.					
I feel that putting work off until the last minute does not do me any good.					
Working under pressure does not bring me good results.					

	Not true for me	Often untrue for me	Sometimes true for me	Often true for me	True for me
I intentionally put off work to increase my motivation.					
To use my time more efficiently, I deliberately postpone some tasks.					
I tend to delay finishing tasks that are important without any particular reason.					
I often put off things with farther deadlines in order to spend time for more urgent things.					
When I change my work schedule, it's based on having thought carefully about the situation.					
I'm quite flexible in changing my schedule to deal with unexpected events.					
I prioritize tasks according to their importance and urgency even though it might not always work out.					
I like to gather sufficient information before taking actions.					
I finish most of my assignments right before the deadlines because I choose to do so.					
In order to make better use of my time, I intentionally put off some tasks.					
I'm more focused and motivated while I'm working against deadlines.					

	Not true for me	Often untrue for me	Sometimes true for me	Often true for me	True for me
I tend to work better under pressure.					
I'm a "deadline person."					
I become more focused when I realize that the deadline is coming soon.					
Related to my work or study, I enjoy the feeling of time pressure.					
Without deadlines, I accomplish nothing.					
I'm frustrated when I have to rush through deadlines.					
I prefer tasks with specific deadlines.					
One of my strengths is to be able to work under pressure.					
I feel tense and cannot concentrate when there's too much time pressure on me.					
It's really a pain for me to work under upcoming deadlines.					
I'm upset and reluctant when I'm forced to work under pressure.					
I concentrate better when I face time pressure.					

Thank you for completing this survey

