Gap between Intention and Action: The Role of Self-Efficacy, Self-Regulation and Self- Continuity in Predicting Academic Procrastination.

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Abstract

A cross-sectional quantitative study aim to assess to the role of Self-Efficacy, Self-Regulation, future self-continuity in Academic Procrastination. A total sample (N=110) of college students from the republic of Ireland (males 51% and females 49%, mean age are 23 years old, SD= 6.44) 35.5% of participants were psychology students, 26.4 % were business students, 27.3% were computing students and 10.9% were Hospitality and Tourism students. Through convenient sampling, participants completed self-report measures via Google form including a general procrastination scale, Self-efficacy scale, self-regulation scale and time perspectives scale. The correlational analysis revealed significant negative relationship between self-regulation, self-efficacy, mental imagery future and year of college with academic procrastination. Furthermore, multiple regression analysis identified 7 predictive variables accounted for 38% of the variance in academic procrastination.

T-test analysis found that Male procrastinates more than female, The first-year undergraduate procrastinates more than the final year undergraduate students. Anova analysis found that Hospitality and Tourism students procrastinate more than Psychology students. Due to high prevalence in procrastination and several negative consequences that follow due to procrastination (Klingsieck, 2013). Research into procrastination should be ongoing. Implication and limitation are further discussed.

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Introduction

General Procrastination

Several attempted has been made to try to explain the defeating behavioural pattern Steel (2007) shown that
Procrastination is a global predominant what affect almost everyone, it is a complex psychological behaviour that can be defined as   the voluntary, irrational delay of an intended action that interfere with the performance of the task, usually involves negative outcome as a consequences (Klingsieck, 2013) due to self-regulatory failure (Ferrari, Johnson, & McCown, 1995;Gailliot et al , 2008 ; Pychyl & Flett, 2012). Several attempt has been made from various angles of research, with the aim to established the theoretical understanding of the multi-facets components associated with procrastination.

Academic procrastination can be described as intentionally delaying or deferring deadlines of college work (Shraw, Watkins & Olafson, 2007). All nighters it is a common phenomenon where many of college students go through the struggle of catching up with project assignment deadlines, cramming for exams, doing assigned reading. Many students reported they have postponed the task due to the lack of motivation (Ackerman & Gross, 2005).   It can be defined as the discrepancy between intention and action (Ryan & Deci, 2000). According to Tuchman (2002a), procrastination was associated with lower grade poor academic performance. The degree in which procrastination affect individual differs from person to person. Many procrastinators may identify themselves as work best under pressure. However, due to the time restriction, it may not allow an individual to deliver the best performance. For many Procrastination act as a self-defeating behaviour, where Procrastination may be defined as "needlessly delaying tasks to the point of experiencing subjective discomfort" (Solomon & Rothblum, 1984, p. 503). Students may experience a gap between the intention and action, An intention to starting a task on the expected time frame

and the lack of the action, unable to follow through their intention into action due to procrastination. As a result the experience of discomfort (Ferrari, 1998; Lay, 1986, 1995).

The severe problems associated with procrastination may cause a disruption in individual's personal, social, and problem-related to responsibility (Andreou, 2007). The tendency to put themselves under massive pressure on the intended task often lead individual to experience several of adverse outcomes in their physical health and mental health (Ellis & Knaus, 1977; Ferrari, Johnson, & McCown, 1995). Chronic procrastinators often experience anxiety due to the unreasonable delay due to procrastination (Ferrari, Johnson, & McCown, 1995; Sirois & Gick, 2002; Nasiri et al., 2015). Research has explored various of reason to why student procrastinates, the complex underlying mechanism involved. Meta-analysis steel (2007) assessed 691 previous studies on various of factors that correlate and explain procrastination. Many researchers suggested that procrastination may be caused due to a deficit in self-regulated performance (Chu and Choi 2005; DeRoma et al. 2003).

Prevalence of Procrastination

In recent years, procrastination and its high prevalence have become a central issue which is difficult to ignore. According to research from Ellis & Knaus (1977) 80% to 95% of student engage in procrastination, with 50% reported that it has been destructive and causing interference in their life (Steel, 2007; Solomon & Ruthblum, 1984; Day, Mensink, & O'Sullivan, 2000).Finding from Klassen et al (2010) found that student spent approximately 3 hours procrastinating per day. It is estimated that in the adult population 15%- 20% identified as chronic procrastinators (Harriott & Ferrari, 1996). There has been increasing interest in trying to reduce procrastination especially in a college setting, as they are the population that are most likely to suffer most from it (Ellis & Knaus, 1977; Nasiri et al., 2015). The evidence supports the prevalence of procrastination is obtained exclusively through procrastination self-report questionnaires. Therefore, it is difficult to draw general agreement on the accuracy of the estimated prevalence of research as procrastination can be captured from various of ways, differentiating the different ranges of procrastination to what

extent it is categorised to be general or severely problematic create some drawback (Steel, 2007).

History of procrastination

The nature of procrastination can be traced back since 800 BC during the time of ancient civilisations. Traditionally it was viewed as a complex behaviour predominant where individual are taking time out to think and evaluate upon making their decision before acting it out (Ferrari et al.,1995). According to various of scholar's early writings procrastination is viewed in a positive light cited by (Steel 2007; Thakkar,2009). Procrastination became more prominent in the modern days due to the advancement and the accessibility of technology. The societal attitude and the way of life have become increasingly easier, offers distractions equation into daily life (Thakkar,2009).

In the modern days, it is viewed more with negativity.   In the recent years has increasingly gained interest in research mainstream. The tendencies to put things off until it is too late is a common global predominant which affects in many of life domain personal health, increasing academic anxiety, reduce chances of academic achievement, decrease work productivity. The attempt in addressing the issue has raised attention from scientific communities to behavioural economics (Solomon & Rothblum, 1984; Lynch & Zauberman, 2006; Alexander & Onwuegbuzie, 2007)

Gender and procrastination

The research found that male procrastinates slightly more than female (Van Eerde,2003; Steel, 2007; Özer, Demir & Ferrari,2009), especially on academic task (Prohaska, Morrill, Atiles & Perez, 2000; Özer and Ferrari, 2011). Finding on the relationship between procrastination and gender differences relies heavily upon empirical Meta-analytic and theoretical reviewed by steel (2007), overall suggested that the relationship is small and somewhat uncertain. However, the differences in gender proposed relating to

differences in self-control constructs that was measured in capturing procrastination (Meyer,2000). According to Sharma and Kaur (2011) found that male displayed the higher score on more rebelliousness or risk taking behaviour in explaining their procrastination, whereas female shown more fear of failure response in explaining their engagement in procrastination (Özer, Demir & Ferrari,2009). Female shown the greater score on effortful control than males. The research found a small negative correlation of (r=-.08) (ElseQuest, Hyde, Goldsmith, & Van Hulle, 2006). Some contradicting evidence found no differences in gender   (Sepehrian and Lotf, 2011; Sharma and Kaur, 2011).

Age and years of college

Previous studies have reported that procrastination decreases as age increase, explanation has been made procrastination decrease through experience. As individual aged they developed strategies to manage their sense of self-control and formed schemes to help them to avoid procrastination (O'Donoghue and Rabin, 1999). However, as many of research use a broad population sample, the evidence for this relationship is inconclusive.

Recent evidence suggests procrastination increase with age. Using college sample research found that older students procrastinate more than younger students, research concludes that due to the impact of life responsibility such as work circumstances and family commitments may provide an explanation for their higher level on procrastination (Rabin, Fogel and Nutter-Upham, 2011).

Self-efficacy and procrastination

A large body of research investigated the relationship between self-efficacy and procrastination. According to Van Eerde (2003) suggested low self-efficacy is one of the primary variables that significantly correlate with a high score on procrastination.
The concept was coined by Bandura (1997) as a part of the construct of social cognitive theory. Self-efficacy is defined as the perceived level of competencies in which one belief in

his or her ability to do successfully a particular task (Gore, 2006). It has been heavily explored in the context of work and academic domains.

A meta-analysis by steel (2007) suggested that low self-efficacy is a central reason for procrastination in a university context.

Klassen et al (2010) identify self-efficacy as a motivational variable of learning. The research found that students who score highly on self-efficacy scale tense to view challenging tasks as something to be mastered therefore they often take more time and considerations into the way they approach school related tasks. Evidence found that having high self-efficacy rate can potentially mediate the role of motivation and achievement (Prat-Sala & Redford,2010) and it mediate achievement goals in physical education classes such as sport (Gao et al.,2011). Whereas students who score lower on self-efficacy would more likely to avoid the task or less liable to be committed to following through the task (Prat-Sala and Redford, 2010). Procrastination has been linked with poor academic performance (Klassen et al., 2010; Steel, 2007). Previous meta-analysis study has reported largest effect sizes, r = -0.44 found between variance shared between low self-efficacy and high level of procrastination among college sample (Van Eerde,2003). Along with several Research identified self-efficacy as one of the core variables that provides insight into one of the multi-facets factors that may explain the reason students procrastinate (Sirois, 2004; steel, 2007; van eerde, 2003; Wolters, 2003; Klassen et al. 2008)

Self-regulation and Procrastination:

A considerable amount of literature has investigated the impact of the role of self-regulation play a role in procrastination. According to Baumeister & Vohs (2007), Self-regulation can be defined a complex ability that allows an individual to regulate and control their thought or behaviour. Accordance to pursuing different goals, expectations or ideas (Shah and Kruglanski, 2000). According to Beckmann & Kellmann (2004), Self-regulation constructs primary focus on the organisation of control process in the area of cognition of thinking, attention and concentration.

Self-regulation allows individual to be able to adjust flexibly to changes and be able to respond to daily demands (Siegel, 2007). Previous research has identified the influence of poor self-regulation and how the underlying processes influence procrastination behaviour

(Borca and Yoen, 1987; Ferrari & Dovidio, 2001; steel, 2007; Wolters, 2003). Having poor self-regulation skill can lead to engaging in avoidance behaviour (Brown,1992).

Moffitt et al. (2011) have identified moderate correlations between poor self-regulation and procrastination behaviour.Furthermore, self-regulation accounted for 25% of the shared variance which suggested explaining procrastination (Senécal, Koestner & Vallerand,1995). According to Klassen and Kuzucu (2009) found that when the variable of self-regulation and self-efficacy has combined the strength of the connection is greater. A problem associated with poor self-regulation linked with lacking an awareness of how to plan and monitor a given task, along with having poor organisation strategies (Howell & Watson, 2007; Rabin et al., 2011).

The ability to self-regulate is a crucial human skill. Research has shown that Students identified having high self-regulatory skills tend to be more academically motivated and learn more than others (Pintrich, 2003). Good self-regulatory skills also found to associated with various of positive outcomes such as great college attainment, college achievement, good maintenance of personal health and general well-being (Aspinwall, 2004; Skowron et al., 2003). However, literature has emerged that offers contradictory findings that having too high self-efficacy might influence learner to procrastinate even more due to the tendency of avoidance (Van Eerde, 2000) however, data is unclear as the method that has been applied are somewhat generalizable it is difficult to draw conclusion to observe the meaningful difference with procrastination. From neurological research found executive functioning and its association with the prefrontal cortex found to be the part of the brain that process self-regulation (Roth et al., 2006) the part of the brain that evolves (Barkley, 2001)

Time Perspectives and Procrastination

The ability to travel through time is one of the most important capability of human being. The basis of our cognition of memory allows us to reflect on the past and project ourselves into the future through the process of our imagination (Sunddendorf and Corballis, 1997). Little research has examined the relationship between procrastination and time perspective. Furthermore, studies have suggested the interrelationship between

procrastination to poor planning, disorganisation, poor emotional control (Dewitte & Lens, 2000) much previous research suggested that the primary cause of procrastination is the inability to see or underestimate time (Markus and Nurius 1986).

A multitude of procrastination can be conceptualized as the experience of disconnection between present self and future self. The concept of future self-continuity has coined by Hershfield et al (2009)   proposed the attempt procrastination can be understood through the process of time. It refers to ''the extent to which individual feels connected and similar to his or her future self a sense of identity that continues over the perspective of time''. Hershfield and colleague experimentally predicted how much people are likely to invest in their long-term retirement plans. Using the developed self-continuity scale designed to assess individual perceived sense of self whether they viewed their future self to be a direct extension of their present self or a total stranger to them. finding suggested once individuals are experimentally conditioned to felt connected to their future self, they are less likely to make the decision that their future self will regret (Hershfield et al., 2009). Similar research by Blouin-Hudon & Pychyl (2015) found the students who have high future self-continuity (presence and future self are connected) are less likely to procrastinate. The student who experience a discontinuity in their past and future self tense to be detached in the way they make decisions for their current self. Often leave work up until the last minute as the result future self will be responsible for the outcome. Severe procrastinator often seeks out for an instance rewards in the present time (steel,2007).   Individual have difficulty in projecting themselves into the future, therefore, they are more likely to engage in procrastinating behaviour due to the self-defeating behaviour future self often perceived as a stranger (Zimbardo 1999; Sirois & Pychyl, 2013). Chronic procrastination negatively correlated with future time orientation (Ferrari and Diaz - Morales, 2007).

According to Boyd and Zimbardo (2005), Human time perspective of the past, present and future allow individual to form effectively a sense of goals and expectations through the cognitive process of encoding, storing and recalling memories or life events. According to Chandler (1994), he emphasises the importance of self-continuity in the beneficial context of how it provide an individual with a coherent sense of awareness of who they are and who they desire to become. Furthermore, future self-continuity allows individual to be more effective in their responses and the way they make a decision that can guide their action

(Damasio, 2010; Greenwald, 1980), The sense of awareness in ourselves can subsequently influence the long-term choices that we make (Sirois & Pychyl,2013).

Neuroscience research indicated that the areas of the brain activated differently when individual think of their current self versus when they think of their future self. The Cortical Midline structures of the brain largely activated in a person with low perceived future self-continuity. These part of the brain controls for function regard the notion of the self-awareness such as self-evaluation, motivation and emotion. Individual with low self-continuity tense to perceived their future self to be a stranger to them. (Ersner-Hershfield, Wimmer, & Knutson, 2009b; Northoff & Bermpohl, 2004). The role of executive functions associated with the frontal region of the brain is an important area that shaped oneself regulatory process. The dysfunction of this part of the brain offers some explanation for the dysfunction of procrastinating behaviour (Roth, Randolph, Koven, & Isquith, 2006)

Mental imagery and procrastination

Recently, researchers have shown an increased interest the role of Mental imagery how the imagination process may offer insight into understanding procrastination. It was first introduced by Sir Francis Galton (1883). Mental imagery can be imagined as the ability to control or capture pictures in the mind or a visual representation or cognitive modalities such as vision, taste, smell and hearing in the absence of environmental inputs (Serruya & Grant, 2009; Spence & Deroy, 2012).
The imaginative ability that human being have, allow us to project ourselves into the past, present and the future. Capacity to form internal images based on our experiences and imaginations enable us to feel connected to ourselves (Blouin-Hudon & Pychyl, 2015). Mental imagery often acts as a motivational drive for the behaviour to meet the desired reality (Nussbaum, 1978). According to Ley (1979), Mental imagery has many beneficial used as it offers a direct link into our emotion process. Understand of the interaction may offer a new research tool which helps the further advancement of understanding of procrastination. Research by Hershfield et al. (2011) investigated the influence of how mental imagery and self-continuity relating to time orientations by conditioned participants feel more connected to their future self. He experimentally created a virtual reality by which

individual saw a digitally aged picture of themselves. Participants were asked how much they are likely to invest in their retirement plans. The research found that people felt emotionally connected with their future self, resulting making better choices for their long term retirement plans than the group that did not see a digitally aged picture of themselves.

Objectives of current study

This thesis intends to determine the extent to which Self-Efficacy, Self-Regulation and Future Self- Continuity predict academic Procrastination. Steel (2007) shown that 95% of students wish to reduce their procrastination as it has been interfering with their academic life. Given the high rate of prevalence has becoming increasingly difficult to ignore in order to understand why students procrastinate research must establish what variables influences procrastination in the first place. The main aim of this investigation is to expand current understanding of the contributory factors between the gap between intention and action, Due to some contradiction finding from the literature, research on procrastination must be ongoing. After examined the previous research revealed that little is known about the influence of the role of time perspectives and mental imagery to procrastination. Specifically, between the role of future self-continuity between past self, current self and future self and its influence on procrastination. In particular, this dissertation will examine eight main research questions.

Hypotheses

H1: There will be a negative relationship between self-efficacy, self-regulation, years in college to academic procrastination.

H2: Lower self-efficacy will significantly predict the high score on academic procrastination.

H3: Lower score on self-regulation will significantly predict a high score on academic procrastination.

H4: low score on future-self-continuity will predict a high score on academic procrastination.
H5:   There will be a significant relationship between mental imagery and procrastination.

H6: there will be no difference in procrastination score between types of course study to procrastination.

H7: There will be a difference in Procrastination score between First year and final year students.

H8: Male will procrastinate more than female.

Method

Participants

Total sample of 110 participants, consisted of males 51% and females 49% of college students from undergraduate and postgraduate courses in the Republic of Ireland. The mean age of the participants was 23 years old (M= 23.31, SD= 6.44), ranging from 18 - 57 years old. 35.5% of participants were psychology students, 26.4 % were business students, 27.3% were computing students and 10.9% were Hospitality and Tourism students. Participants were recruited through convenience sampling technique. See Table 1 for frequency and valid percent of the sample.

Design

The methods used in this investigation was a quantitative, mixed design study. The study employed a cross-sectional correlational design to investigate the relationship between Independent variables (see Table 3) and academic procrastination. Furthermore, multiple regression was used. The predictor variables including Self-efficacy, Self-regulation, and Future self-continuity, past self-continuity, Gender, Mental imagery (past & future) with Criterion variable of academic procrastination. The comparative part of the study used a quasi-experimental design to investigate the differences in Gender and year of college and course study (independent variable) and academic procrastination (dependent variable).

Materials

The materials and measurements used were four sections of self-report questionnaires including a set of demographic questions (Appendix B), consent form (Appendix A), General procrastination scale (Lay, 1986; Appendix C) , The Generalised Self-Efficacy Scale (Schwarzer & Jerusalem, 1995; Appendix E),Self- Regulation scale (Schwarzer, Diehl & Schmitz, 1999; Appendix D), Future Self-continuity & Past Self-continuity (Ersner-

Hershfield et al, 2009; Appendix F,G) and The Vividness of Imagery Questionnaire future & past (Mark,1987; Appendix H,I).

General procrastination scale (Lay, 1986; Appendix C) is a 20-item scale assesses individual's behavioural traits and tendencies towards procrastination. The questionnaire contains everyday life statements which participant must rate to what extent the statement describe themselves (e.g., 2. ''I do not do assignments until just before they are to be handed in''). The scale items are scored on a 5 point Likert scale which ranging from 1 being (extremely uncharacteristic), 3 being (Neutral) and 5 being (extremely characteristic).The minimum and the maximum value of the scale ranging from 20 to 100 points. The higher scores reflecting a greater tendency to procrastinate. The scale contained ten reversed items that need to be recoded before calculate up to get a total score these reversed items are questions (3,4,6,8,11,13,14,15,18,20). The scale is suitable for assessing student population. The scale reported having a good internal consistency of Cronbach's α of 0.82 (Lay, 1986; Schouwenburg, 1994). The internal consistency reliability in the current study was (α = .84).

Self- Regulation scale (Schwarzer, Diehl & Schmitz, 1999; Appendix D) is a 10 items scale used to assess participant's level of self-regulation (SRS) , It measures how individual maintain their focus attention when facing challenges in achieving a goal, The scale specifically designed to capture attention control in the process of goal pursuit. (e.g. 'If I am distracted from an activity, I don't have any problem coming back to the topic quickly''. The scale items are scored on a 4 point Likert scale which ranging from 1 being '' not at all true'' to 4 being ''exactly true''. The score is ranging from 10 to 40 points. Higher scores reflecting greater ability to control and maintain one's attention (e.g., self-regulation) and lower score indicate lower self-regulation. There are ten reverse scores in the SRS, these are the number (5,7,9), Responses are calculated up to get a total score.The scale designed for the use of general adult population. The scale was translated from German into English. The original German version of the SRS reported good internal consistency of the measure with a Cronbach's α of .82 (Panebianco-Warrens, Fletcher & Kreutz,2015). In cross-cultural research by Luszcynska et al. (2004), SRS remain its good internal consistency Cronbach's α of .75. The internal consistency reliability in the current study was (α = .74).

The General Self-Efficacy Scale (Swhwarzer & Jerusalem, 1995; Appendix E) is 10 item scale (English version) It measures individual's general sense of perceived self-efficacy to cope effectively with stressful life events (e.g., ' I am confident that I could deal efficiently with unexpected events'). The scale designed for the use of general adult population. The scale items are scored on a 4 point Likert scale which ranging from 1 being ('' not at all true'') to 4 being (''exactly true''). The score ranging from 10 to 40 points, higher scores reflecting greater believe in their ability overcome difficult task and lower score indicates a lower belief in one self's ability. Responses are calculated up to get a total score. According to Psychometric findings from 25 countries by Scholz, Sud, Schwarzer (2002) GES contain Internal consistency of the subscales ranged from Cronbach's (α .81 to .86). Internal consistency in the current study was (α = .89).

Future Self-continuity (Ersner- Hershfield et al., 2009; Appendix G) is a single item scale used to measures How connected individual feel to their future self at the end of the semester. The scale designed to examine the degree to which people feel their current self is similar or disconnected to their future self..The participants were asked a question "Sometimes our future selves can feel very close to us, like a good friend, or very distant as if they were a stranger. On the scale below, please indicate how similar/connected you feel to your future self at the end of the semester (e.g. May 2016). Circles that overlap represent greater closeness to the future self." Future Self-continuity scale depicted by two circles intersecting into one another by intervals (e.g., Venn diagram). The scale items were scored ranging from 1 to 7 point Likert scale, at point 1 of the scale the circles depicting no overlap represent (''Not similar/connected at all), at point 7 the circles depicting almost complete overlap represent (''Completely similar/connected).Higher scores and more overlapping circles indicated that individual perceive their future self to be a continuous extension of their current self and a lower score indicates lower future self-continuity represents individual that perceive their future self as a stranger. According to Blouin-Hudon & Pychyl (2015), The scale contains internal reliability consistency of (α = .76)

Past self-continuity (Appendix F) the self-developed measure derived from future self-continuity scale (Ersner-Hershfield et al., 2009) the term ''future'' is replaced by the term ''past'' a single item scale used to measures how connected individual feel their past self at the end of semester, for the purpose of this research the scale was used to examine the degree to which people feel their current self is similar or disconnected to their past self. The scale items were scored ranging from 1 to 7 point Likert scale, at point 1 of the scale the circles depicting no overlap represent (''Not similar/connected at all), at point 7 the circles representing almost complete overlap represent (''Completely similar/connected).The participants were asked a question '' Sometimes our Past Selves can feel very close to us, like a good friend, or very distant as if they were a stranger. Look at the picture below; please indicate how similar/connected you feel to your Past Self at the end of the semester (e.g. May 2015). Circles that overlap represent greater closeness to the Past self ''.

The Vividness of Imagery Questionnaire (Future self) (Marks, 1987; Appendix I) is a modified single item scale designed to assess the vividness of mental imagery of the future self. The scale items are scored on a 5 point Likert scale which ranging from 1 (Perfectly clear and as vivid as normal vision, smell, taste, touch, and/or hearing)   and 5 (No image at all, you only "know" that you are thinking of you future self) the lowest scale demonstrated the more vivid of the visualize imagery and the highest score represent no vivid connection at all. Participants were asked to "Please close your eyes and imagine your future self at the end of the academic semester. Rate the vividness of the visual image, touch, smell, and sound of your future self at the end of the academic semester(e.g. May 2016)".   According to Blouin-Hudon & Pychyl (2015), This item demonstrated good test-retest reliability across all three times points ($\alpha = .719$).

The Vividness of Imagery Questionnaire -Past self (Marks, 1987; Appendix H). Self-developed questionnaire derived from (Blouin-Hudon & Pychyl, 2015), a modified single item scale that designed to assess the vividness of mental imagery of the past self. Participants were asked to ''Please close your eyes and imagine your past self at the end of last year's academic semester (e.g. May 2015). Rate the vividness of the visual image, touch, smell, and sound of your future self at the end of the academic semester. Please indicate

whichever number you feel is most appropriate for you.'' The scale items are scored on a 5 point Likert scale which ranging from 1 (Perfectly clear and as vivid as normal vision, smell, taste, touch, and/or hearing) and 5 (No image at all, you only "know" that you are thinking of you future self) the lowest scale demonstrated the more vivid of the visualize imagery and the highest score represent no vivid connection at all.

Procedures

The participant was administered a link which directly open up an online self-reported questionnaire via Google form. The cover page of the questionnaire outlined a brief explanation regarding nature and the purpose of the study. The participant was fully informed that the questionnaire consisted of six parts which set out to investigate some of the reasons why students procrastinate. Specifically its relationship to Self-Efficacy, Self-Regulation, and components of time perspectives. The cover page further outlined the time duration which questionnaire will take and information regard Ethical considerations of anonymity, confidentiality, and informed consent (See Appendix A). Details of the supervisors and the authors were also provided. Participant must click agreed to the term and conditions before they were allowed to continue the self-report questionnaire. In the first part of questionnaires asked demographic questions (i.e., gender, age, year of college, course study (Appendix B). Followed by measures of general procrastination (Lay, 1986; Appendix C), Self- Regulation Scale (Schwarzer, Diehl & Schmitz, 1999; Appendix D), The General Self-Efficacy Scale (Swhwarzer & Jerusalem, 1995; Appendix E), Past self-continuity (Ersner-Hershfield, Garton; Appendix F), Vividness of Imagery of past self (Marks, 1973, 1987; Appendix H), Future self-continuity (Ersner-Hershfield, Garton; Appendix G), Vividness of Imagery of Future self (Marks, 1973, 1987; Appendix I). The questionnaire took approximately 6 minutes to complete. The additional box was provided at the end of the questionnaire for any inquiry or concern regard the study. Once completed, the data automatically stored in Google form and it available for the researcher to do a future analysis.

Descriptive Statistics

Table 1: Present a summary of the frequency and valid percentages of the demographic characteristic of participants. The descriptive statistics of all continuous variables including mean score, Standard deviation, and the min and max can be found in Table 2. Data was then further analysed using Pearson's product moment correlation coefficient, Spearman's rho, unrelated one-way ANOVA, multiple regression and independent sample t-tests was conducted.

Test of normality

The assumption of normality was tested, Kolmogorov-Smirnov and Shapiro-Wilk were performed. Overall the three measures of Procrastination, Self-efficacy and Self-regulation satisfied the assumption of normality ($p > 0.05$), however, the time perspectives measures of The self-continuity (past & present) and The mental imagery (past & present) was not satisfied the normality test assumption ($p < .000$). However, this may be because these scale measures contained a single item which was measured on 1 –7 points Likert scale. Further inspection of The Normal Q-Q Plot, the Histogram, outliers and the skewness and Kurtosis was investigated. The skewness and Kurtosis were found to be less than [2.0] and [9.0] in all of the measures suggested that overall data was relatively normally distributed.

Table 1: Descriptive of sample characteristics.

Frequencies for the current sample of college students and courses they study (N = 110)

Variables	Frequency	Valid Percent
Gender		
Male	56	50.9
Female	54	49.1
Course Study		
Psychology	39	35.5
Business	29	26.4
Computing	30	27.3
Hospitality & Tourism	12	10.9
Year in college		
1St year undergraduate	33	30
Middle years undergraduate	27	24.5
Final year undergraduate	28	25.5
1St year postgraduate	12	10.9
Middle year postgraduate	0	0
Final year postgraduate	10	9.1

Table 2: Descriptive statistics of all continuous variables

Descriptive Statistics of general mean of Psychological Measures of General Procrastination Scale, Self-Regulation Scale, Self-Efficacy Scale, Past Self continuity scale, future Self Continuity scale, Mental Imagery Past scale, Mental Imagery Future Scale.

Variable	M	SD	Min	Max
Procrastination	61.28	11.54	35	89
Self-Regulation	25.20	4.64	14	36
Self-Efficacy	29.10	5.50	15	40
Past Self Continuity	4.25	1.60	1	7
Mental Imagery Past	3.10	1.06	1	5
Future Self Continuity	3.85	1.68	1	7
Mental Imagery Future	2.90	1.03	1	5
Age	23.31	6.44	18	57

Note. N=110

Correlation Analysis

Correlations of all variables of interest are presented in Table 3. In order to test the hypothesis 1 that there will be a negative relationship between self-efficacy, self-regulation, years in college to academic procrastination. Pearson product-moment correlation was investigated. In addition, Spearman's rho correlation coefficient was used for ordinal variable of (year in college), to explorer the monotonic relationship with other variable. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a negative relationship between all independent variables to academic procrastination. As shown in this Table 3, the strongest correlation are between self-regulation and procrastination were significantly correlated, $r = -.48$, $p =.00$ Followed by Self-efficacy and procrastination were significantly correlated, $r = -.36$, $p = .00$ and Mental Imagery Future and procrastination were significantly correlated, $r = -.24$, $p = .00$ and Year in college and procrastination was correlated $r = -.19$, $p = .04$.

Table 3. Correlations between all continuous variables.

Measures	1	2	3	4	5	6	7	8	9
1.Procrastination	-								
2. Self-regulation	-.48**	-							
3. Self-Efficacy	-.36**	.54**	-						
4. Age	-.07	.26**	.13	-					
5. Year in college	-.19*	.30**	.25**	.00	-				
6.Future Self continuity	-.08	.20*	.34	.05	.18	-			
7. Past Self Continuity	-.02	.18	.20	-.13	.14	.06	-		
8. Mental Imagery Past	-.18	.17	.20*	-.05	.14	.07	.07	-	
9. Mental Imagery Future	-.24*	.43**	.46**	.28**	.13	.48**	.15	.23*	-

Note. Statistical significance: *p < .05; **p < .01

Multiple regression analysis

In order to test hypothesis (2,3,4,5), Multiple linear regression analysis was used to investigate whether the factor of self-efficacy, Self-regulation, Gender, Mental Imagery past, Mental imagery Future, Past Self-Continuity, Future self-continuity significantly predicted the level of Academic Procrastination. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. Data shown a weak to moderate correlations they were ranging between r = .03, *p* =.74 and r = -.44, *p* = .00. This indicates that multicollinearity was unlikely to be a problem (see Tabachnick and Fidell, 2007). The correlations between the predictor variables included in the study were examined and these are presented in Table 4. The results indicated that these seven predictors explained 38% of the variance in Academic Procrastination (R^2 = .37.7, F(7,102)=8.83, *p*=.00). In the final model three predictor variables were statistically significant, with Self-regulation recording a higher Beta value (β = -.44, p = .00) than Gender (β = -.35, p = .00) and Self-

efficacy (β = -.19, p = .05). There was no significant predictor found for mental imagery future, Future Self-Continuity, Mental imagery Past, Past Self-continuity.

Table 4 Summary of Multiple Regression model of Predictors of Total Procrastination among college students.

	R^2	β	B	*SE*	*p*	95% CI for (B)
Model	.37***					
Self-Regulation		-.44**	-1.1	.24	.00	-1.5/-.63
Self-Efficacy		-.19	-.40	.21	.06	-.82/.01
Gender		-.35**	-7.9	1.9	.00	-11/-4.2
Mental Imagery Past		-.14	-1.5	.99	.12	-3.4/.41
Mental Imagery Future		.08	.99	1.1	.39	-1.3/3.2
Future Self Continuity		.03	.21	.64	.74	-1.6/1.5
Past Self Continuity		.09	.66	.66	.31	-.64/1.9

*Note. N=110; Statistical significance: *p < .05; ** p < .001*

One-way Anova analysis:

The descriptive statistic associated with the level of procrastination across the four courses groups are reported in Table 1.

In order to test the hypothesis 6, that there will be no a difference in procrastination score between types of courses study. A one-way between groups ANOVA was conducted. Course studied by the participants made up of four groups these are (psychology, Business, Computing and Hospitality and tourism). Furthermore, the assumption of homogeneity of variances was tested and satisfied based on Levene's F-test, $F_{(3,106)}$=.69, *p*= .56.

There was a statistically significant difference in the level of procrastination scores for four of the groups F (3, 106) = 2.58, *p* = .05. Despite reaching statistical significance, the actual difference in mean scores between groups was medium. The effect size, calculated using eta squared, was .07. The Bar chart of the courses study and procrastination are presented in Figure 1.

Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Hospitality and Tourism (M= 68.50, SD = 10.86) was significantly higher (p = .05) Psychology (M= 58.94, SD = 10.88). Therefore, the significant mean difference indicated that Hospitality students procrastinate more than Psychology students. There was no statistically significant difference found in mean level of procrastination between business students (M = 59.72, SD= 12.68), computing students (M = 62.93, SD=10.54). The descriptive mean of the analysis are presented in Table 5.

A one-way between groups analysis of variance was conducted to explore the impact of years in college on procrastination score.(See Table 5),Year in college consisted of 6 groups (First-year undergraduate, Middle Years undergraduate, final year undergraduate, First-year postgraduate, Middle years Postgraduate and final year postgraduate). However, The assumption of homogeneity of variances was tested and did not satisfy the assumption based on Levene's F-test, F $(4,105)$=.69, p= .056, therefore, the test could not be run.

Independent sample T-Test: Year in college and procrastination

In order to test the hypothesis 7: that first year will procrastinate more than final year. An independent samples t-test was conducted to compare Procrastination scores between First Year Undergraduate students and Final Year Undergraduate students. There was a significant differences in the scores between the two groups, t(59) = 2.31, p = .02, two-tailed with First-Year Undergraduate (M = 64.42, SD = 10.02) scoring higher than Final Year Undergraduate students (M = 58.28, SD = 10.67). The magnitude of the differences in the means (mean difference = 6.13, 95% CI: 0.828 to 11.44) was medium to large (eta-squared = .08).

Table 5: Mean of Year in college and course study to procrastination.

Variable	N	M	SD	Min	Max
Course study					
Psychology	39	58.94	10.87	40	89
Business	29	59.72	12.68	35	79
Computing	30	62.93	10.54	44	82
Hospitality & tourism	12	68.50	10.86	56	89
Year in College					
First Year Undergraduate	33	64.42	10.02	40	89
Middle Years Undergraduate	27	61.66	13.22	43	89
Final Year Undergraduate	28	58.28	10.67	35	75

T-Test: Gender differences and procrastination

In the final model, Gender differences and procrastination was investigated. Male (N= 56) was associated with higher score on procrastination (M = 64.39, SD = 10.32), by comparison to Female (N=54) was associated with a numerically smaller score on procrastination (M = 58.05, SD = 11.94). In order to test the hypothesis that Male significantly procrastinate more than female. An independent sample t-test was conducted. Frequencies of participants are presented in Table 1. There were statistically significant differences in the scores between male and female, $t(108) = 2.98$, *p* = .004, two-tailed. Male procrastinates higher than female with the magnitude of the differences in the means (mean difference = 6.34, 95% CI: 2.12 to 10.55) was medium to large (eta-squared = .07). Overall, there is strong support for Hypothesis 6.
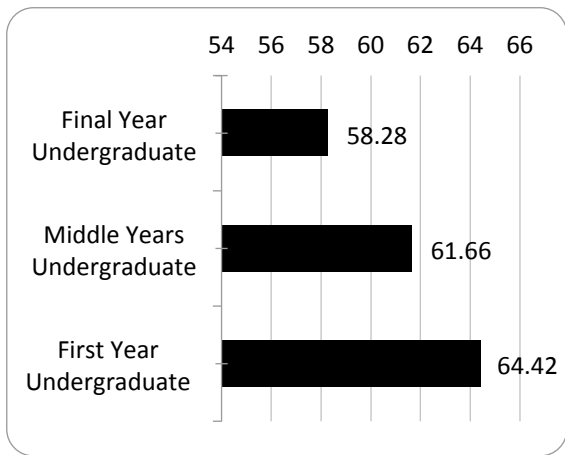
Figure: 1 Bar Chart: mean of Procrastination
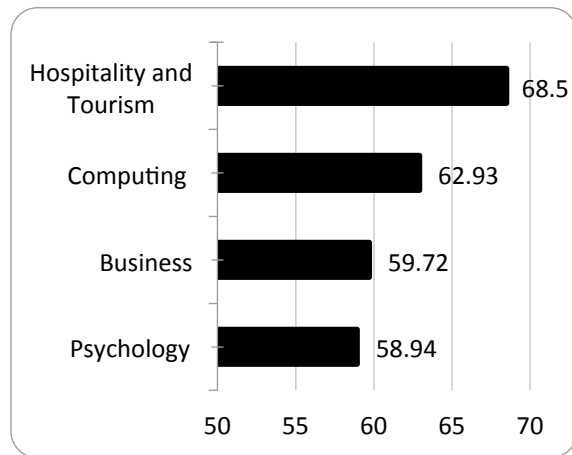Between year in college.

Figure 2. Bar chart: the mean of procrastination
And courses study.

Discussion

The main purpose of this study was to explore the extent which Self-Efficacy, Self-Regulation, future self-continuity, mental imagery play a role in Academic Procrastination among college students sample. The central question in this thesis asked what relationship does the predictor variables have with Academic procrastination. In the attempt to provide a theoretical understanding of the factors influence some of the reasons why student procrastinate.

H1: It was hypothesised that there will be a negative relationship between self-efficacy, self-regulation, and years in college to academic procrastination. The findings supported the hypothesis found that students who score low on Self-regulation, Self-Efficacy, in the lower year of college and mental Imagery future scale procrastinate more. The relationship found to have a significant negative correlation with academic procrastination (see Table 3). Therefore, A null hypothesis was rejected and alternative hypothesis was accepted.

H 2,3,4,5: Additionally, It was hypothesised that lower score on self-regulation will significantly predict a high score on academic procrastination. The results tail in support of the hypothesis found significant predictors of self-regulation and gender to be the reason student procrastinate. The model of multiple regression analysis explained 38% of the variance that predicted procrastination behaviour among the students (see Table 4). It was also hypothesised that lower self-efficacy will significantly predict the high score on academic procrastination. The finding did not support the hypothesis as there was no significant relationship found. However, the relationship was found to be significant in the correlation analysis. It was identified (-.36) (see Table 3). Surprisingly, no significant association was found. Therefore, A Null hypothesis was accepted. Another surprising finding concluded that there was no significant relationship found between the predictor variables of future self-continuity and mental imagery. Therefore, the null hypothesis was accepted.

H6: It was hypothesised that there will be no difference in procrastination score between types of course study to procrastination. The findings did not support the hypothesis. It was found that Hospitality and Tourism students procrastinate more than Psychology students. Therefore, the null hypothesis was partially rejected. There were no differences found for other courses (see Figure 2).

H 7, 8: It was hypothesised that there will be a difference in Procrastination score between First year and final year students. Finding supported the hypothesis. The current study found that first-year undergraduate procrastinates more than final year undergraduate. Next, It was hypothesised that Male will procrastinate more than female. The present finding supported the hypothesis. It was found that male significantly procrastinates more than female.

Consistent with previous research found that procrastination is due to self-regulatory failure (Ferrari, Johnson, & McCown, 1995;Gailliot et al., 2008; Wolters, 2003; Pychyl & Flett, 2012). In this current study, self-regulation is negatively correlated with academic procrastination. A possible explanation for the relationship explained by Siegel (2007) argued that due to Self-regulation is closely related to the underlying processes of cognition of attention and concentration. The students that unable to effectively regulate his or her thought or behaviour are more likely to have a higher tendency to procrastinate (Baumeister & Vohs, 2007). In this current study found self-regulation to have the biggest correlation of (-.48). It is not surprising that self-regulation played a huge role in academic procrastination. Due to the high prevalence, according to Ellis & Knaus (1977) suggested that 80% to 95% of student engage in procrastination and with 50% reported that it have severe negative consequences in their life   (Steel, 2007; Klingsieck, 2013).

In this study, Self-efficacy was found to have a negative relationship to academic procrastination. Consistent with the previous research (steel,2007; Sirois, 2004; Klassen et al., 2008) identified self-efficacy as one of the core variables that accounted for student's procrastination behaviour. A possible reason why student with low self-efficacy procrastinate more is argued by Prat-Sala and Redford (2010) to be the fact that students who do not feel competencies in their own ability are more likely to avoid the task or less likely to be committed to following through compares to those who have high self-efficacy, they would accomplish the task without hesitation. The avoidance behaviour found to play an important role in influencing student procrastination which research identified as an important component of procrastination (Brown, 1992). This current study did not find a significant predictive relationship between self-efficacy and academic procrastination. In contrary to the previous meta-analysis research found that self-efficacy reported to have significant effect size r = -0.44 (Van Eerde,2003). Despite that the fact that there was no significant relationship found between self-efficacy and academic procrastination in this current study. However, Finding was close to reaching significant indicated P= .059 (see Table 4). Explanation for the fact that the result did not reach significant may be due to there was small

sample size. The role of Future self-continuity and procrastination was not consistent with previous research (Blouin-Hudon & Pychyl,2015). Current finding found no relationship between academic procrastination. However, so far only a few studies have investigated the role of future self-continuity. It is currently a new field of research. Therefore, the finding must not be taken for the face value.

The role of mental imagery of the future and procrastination found to have a significant negative relationship to procrastination. Consistent with previous research (Hershfield et al.,2011; Blouin-Hudon & Pychyl,2015). Mental imagery can be referred to the ability to control or capture pictures in the mind or a visual representation or cognitive modalities such as vision, taste, smell and hearing (Spence & Deroy, 2012). A possible explanation of why students procrastinate may be due to inability to imagine themselves into the future. Given the discrepancy between the self and time perspectives and the inability to cognitively visualise the connections. Procrastinators are more prone to make irrational decisions for the current self, which their future self would regret. Blouin-Hudon & Pychyl (2015) argued that the association between mental imagery future and future self-continuity are closely related concepts that based on the process of imagination. Surprisingly, In this current study, no mediation relationship was found between the variables itself.

Furthermore, The relationship between gender and academic procrastination was consistent with the previous literature revealed that male procrastinate more than female (Van Eerde, 2003; Steel, 2007) Similarly, research by Özer, Demir & Ferrari (2009) was in agreement with current study also provide a significant support for the role of gender and in academic procrastination. The reason for the differences perhaps is because male and female tense to operate differently in cognitive processing regards self-control (Meyer, 2000). Sharma and Kaur (2011) suggested that Male tend to display risk-taking behaviour whereas, female tend to exhibit the fear of failure in explaining their procrastination behaviour.

Furthermore, However, this research found that that First-year procrastinates more than final undergraduate students. research suggested that as the students aged, procrastination will decrease (O'Donoghue & Rabin; 1999). Older students would perhaps, learn from the negative consequences that followed when they submit late assignments or did not study for the upcoming exams. It can be argued that final year undergraduate students have a higher degree of development of their cognitive schemas and enhancement of one's sense of control through life experience (O'Donoghue & Rabin,1999). Surprisingly, similar trends of finding

found that first-year postgraduate students have a higher mean of procrastination (M=62.08) compares to Final year Postgraduate (M=57.30) (see Table 5). However, the differences were not significant. Despite reaching significant. It partially supported the claimed been made.

Imprecations

The voluntary, irrational delay of an intended action of procrastination suggested having severe consequences among college student. Therefore, by identify what factors influence it. Can potentially help students to follow through. As Procrastination is linked with poor academic performance (Tuchman, 2002a). By identifying students who are mostly to be at risk of engaging in the behaviour. Could potentially help students to overcome it by creating awareness of the realistic view on procrastination or providing an interventions talk. Due to the high prevalence among college (Ellis & Knaus, 1977). It has becoming an issue that is difficult to ignore.

Limitations

Some limitations in this study should be addressed. Firstly, It is important to bear in mind that this study did not examine for a causal relationship between the variables. it is a correlation study. Therefore, The assumption of the findings can not be inferred to directly caused procrastination. Secondly, Due to practical constraints of using self-report questionnaire. It is acknowledged that this paper may not capture the absolute nature of the matter. The result may contain some biases responses due to the use of self-report measures. Thirdly, Another potential problem regarding the way (1-5) Likert scale was ranged reversely in Vividness of future self-Questionnaire. From high score being 1 and the low score being 5 in the way they were presented to the participant (see Appendix H and I). This may cause participants to mistakenly give an incorrect response. As other scales contained in the study, all range from low to high values. Due to the small unrepresentative number of postgraduates students. Anova analysis can not be run.

Despite the limitations listed. Research turned to positive light by acknowledging that the insignificant finding is also as important as the significant one as it provided an indicator that tell future research what area should be the focus. In this current study, no relationship found for self-continuity scale.

Strengths

The study further expanded the current understanding of the contributing factors play a role in academic procrastination. This thesis contributed knowledge to the existing literature and extends current understanding of the field. Primarily, regard the role of self- regulation and procrastination. The study provided a model that explained 38% of the variance in academic procrastination. The large prediction considered being a good model. Overall, the study revealed support of the majority of predictions that was consistent with previous research with some surprising finding. Furthermore, The study filled the gap in the literature concerning the role of mental imagery and time perspectives. Especially when there is little research has been done in the field. The study offers new ways to explore the phenomenon and this may give a new insight into the further understanding of procrastination.

Future research

The research on procrastination should be ongoing. Primarily, to investigate the role of time perspectives and mental imagery play in procrastination. This current only assess the student at one-time point. Moreover, in-depth analysis of longitudinal studies should be apply in the future research to provide a meaningful empirical understanding to the literature. Lastly, research on procrastination should be extended to other groups of the population, such as children and workplace environment. As majority of previous studies has extensively looked at students sample suggested that ongoing research

Conclusion

In conclusion, the majority of the hypotheses were supported with some surprising findings. Overall, the study found negative correlations to procrastination. With self-regulation, self-efficacy and mental imagery of the future to be significant factors in predicting procrastination. In everyday life, the degree of procrastination different from person to person. Due to high prevalence among college students of the defeating behavior, followed by its negative consequences. An awareness of the factors influence procrastination may allow for more of a realistic view on how to confront it. In conclusion to this thesis, some

interesting variables are found that may offer perhaps, explanations to some of the reason student procrastinate.

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APPENDIX A

Consent form

My name is Pongphat Komlao and I am in my final year of the BA (Hons) in Psychology programme at National College of Ireland. I am conducting this research as a part of my undergraduate thesis to explore some of the reasons why students procrastinate.

You are invited to take part in this study which takes the form of a questionnaire consisting of 6 parts. You will be asked some questions related to procrastination, your attitudes and behaviors as well as questions related to your perception of time. The study will take approximately 6 minutes to complete.

The information obtained from this study will provide a better understanding of procrastination among a sample of college students.It is important to know that your participation in the study is completely voluntary and you are free to withdraw from the study at any time. Participation is anonymous and confidential. Please do not include your name in the questionnaire.

If you are interested in learning more about procrastination or further information about this research, please contact me at pongphat.komlao@student.ncirl.ie . For all other concerns, please contact my supervisor Dr. Rebecca Maguire, National College of Ireland, rebecca.maguire@ncirl.ie

Thanks again for your participation. Please do not hesitate to give some feedback or any inquiry about the study.

Click yes to participate….

Appendix B

Demographics

Gender :   Male [   ]   Female [   ]

Age: _____

Are You a College Student?   Yes   [   ]   No   [   ]

What Year Are You Currently In ?

First Year Undergraduate   [   ]

Middle Years Undergraduate   [   ]

Final Year Undergraduate   [   ]

First Year Postgraduate   [   ]

Middle Years Postgraduate   [   ]

Final Year Postgraduate   [   ]

The Course You Study : _____

Procrastination Scale (Lay, 1986) - For student populations

Instructions:

Please use the following statements to describe yourself. For each statement, decide whether the statement is uncharacteristic or characteristic of you using the following 5 point scale. Note that the 3 on the scale is Neutral – the statement is neither characteristic nor uncharacteristic of you. In the box to the right of each statement, circle the number on the 5 point scale that best describes you

Note: Reversed-keyed items: 3,4,6,8,11,13,14,15,18,20

1	2	3	4	5
Extremely Uncharacteristic	Moderately Uncharacteristic	Neutral	Moderately Characteristic	Extremely Characteristic

1. I often find myself performing tasks that I had intended to do days before.

2.* I do not do assignments until just before they are to be handed in.

3.* When I am finished with a library book, I return it right away regardless of the date it is due.

4. When it is time to get up in the morning, I most often get right out of bed.

5. A letter may sit for days after I write it before mailing it.

6. I generally return phone calls promptly.

7. Even with jobs that require little else except sitting down and doing them, I find they seldom get done for days.

8. I usually make decisions as soon as possible.

9. I generally delay before starting on work I have to do.

10.* I usually have to rush to complete a task on time.

11. When preparing to go out, I am seldom caught having to do something at the last minute.

12. In preparing for some deadline, I often waste time by doing other things.

13.* I prefer to leave early for an appointment.

14.* I usually start an assignment shortly after it is assigned.

15. I often have a task finished sooner than necessary.

16. I always seem to end up shopping for birthday or Christmas gifts at the last minute.

17. I usually buy even an essential item at the last minute.

18. I usually accomplish all the things I plan to do in a day.

19. I am continually saying I'll do it tomorrow

20. I usually take care of all the tasks I have to do before I settle down and relax for The evening.

Self- Regulation scale (Schwarzer, Diehl & Schmitz, 1999)

This scale refers to post-intentional self-regulation when individuals are in the phase of goal-pursuit and face difficulties in maintaining their action. In such a maintenance situation it is required to focus attention on the task at hand and to keep a favorable emotional balance. Thus, attention-regulation and emotion-regulation are reflected in these scale items.

Instruction:

 Below are ten statements about yourself which may or may not be true. Using the 1-4 scale below, please indicate your agreement in the scale down below.

Note: recode questions: 5,7,9

1	2	3	4
Not at all	Barely true	Moderately true	Exactly true
True			

1. I can concentrate on one activity for a long time, if necessary.

2. If I am distracted from an activity, I don't have any problem coming back to the topic quickly.

3. If an activity arouses my feelings too much, I can calm myself down so that I can continue

with the activity soon.

4. If an activity requires a problem-oriented attitude, I can control my feelings.

5. It is difficult for me to suppress thoughts that interfere with what I need to do. (–)

6. I can control my thoughts from distracting me from the task at hand.

7. When I worry about something, I cannot concentrate on an activity. (–)

8. After an interruption, I don't have any problem resuming my concentrated style of working.

9. I have a whole bunch of thoughts and feelings that interfere with my ability to work in a

focused way. (–)

10 I stay focused on my goal and don't allow anything to distract me from my plan of action.

APPENDIX E

The General Self-Efficacy scale (Swhwarzer & Jerusalem, 1995)

The scale was created to assess a general sense of perceived self-efficacy with the aim in mind to predict coping with daily hassles as well as adaptation after experiencing all kinds of stressful life events.

Instruction: Below are ten statements about yourself which may or may not be true. Using the 1-4 scale below, please indicate your agreement in the scale down below.

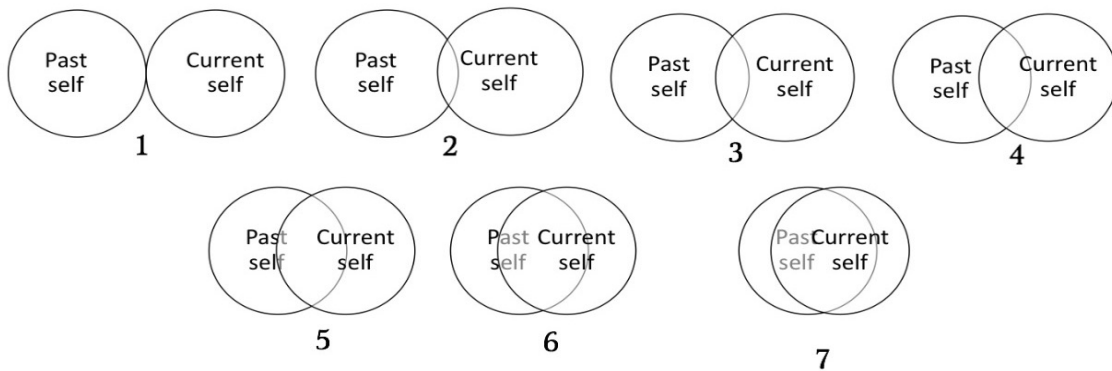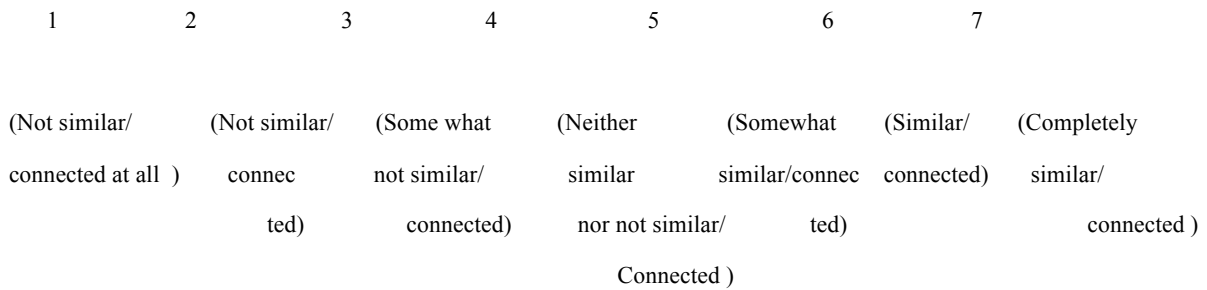| 1	2	3	4
Not at all	Barely true	Moderately true	Exactly true
True			

1	I can always manage to solve difficult problems if I try hard enough.
2	If someone opposes me, I can find the means and ways to get what I want.
3	It is easy for me to stick to my aims and accomplish my goals.
4	I am confident that I could deal efficiently with unexpected events.
5	Thanks to my resourcefulness, I know how to handle unforeseen situations.
6	I can solve most problems if I invest the necessary effort.
7	I can remain calm when facing difficulties because I can rely on my coping abilities.
8	When I am confronted with a problem, I can usually find several solutions.
9	If I am in trouble, I can usually think of a solution.
10	I can usually handle whatever comes my way.

Past Self Continuity

Instruction:

 You will be asked two questions about how you view yourself Sometimes our Past Selves can feel very close to us, like a good friend, or very distant as if they were a stranger. Look at the picture below, please indicate how similar/connected you feel to your Past self at the end of semester (e.g. May 2015). Circles that overlap represent greater closeness to the Past self.

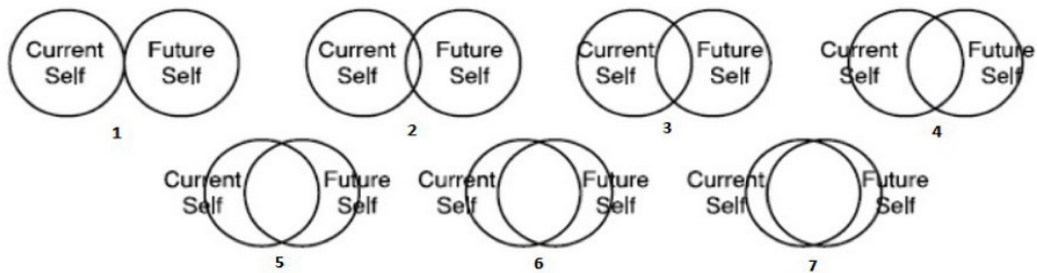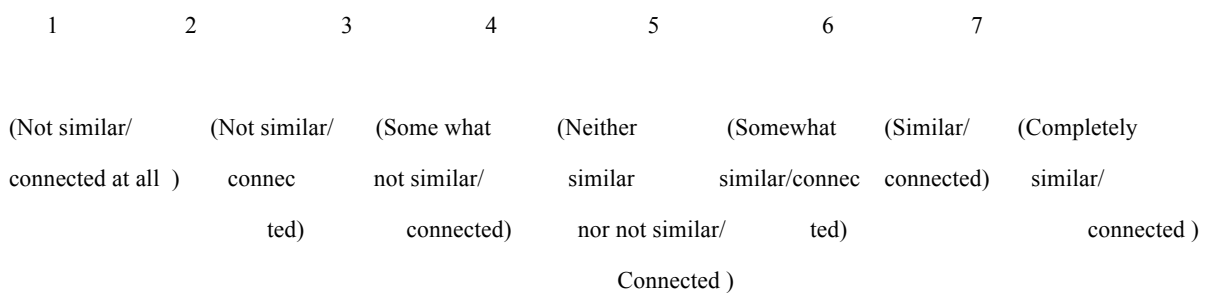| 1	2	3	4	5	6	7
(Not similar/	(Not similar/	(Some what	(Neither	(Somewhat	(Similar/	(Completely
connected at all)	connec	not similar/	similar	similar/connec	connected)	similar/
	ted)	connected)	nor not similar/	ted)		connected)
			Connected)			

Future self-continuity

Instruction :

Now you will be asked two questions about how you view yourself in the future. Sometimes our future selves can feel very close to us, like a good friend, or very distant as if they were a stranger. Look at the picture below, please indicate how similar/connected you feel to your future self at the end of the semester (e.g. May 2016). Circles that overlap represent greater closeness to the future self.

1	2	3	4	5	6	7
(Not similar/ connected at all)	(Not similar/ connec ted)	(Some what not similar/ connected)	(Neither similar nor not similar/ Connected)	(Somewhat similar/connec ted)	(Similar/ connected)	(Completely similar/ connected)

Vividness of Past self Questionnaire (Marks, 1987)

Instruction: Please close your eyes and imagine your past self at the end of last year's academic semester (e.g. May 2015). Rate the vividness of the visual image, touch, smell, and sound of your future self at the end of the academic semester. Please indicate whichever number you feel is most appropriate for you.

1	2	3	4	5
(Perfectly clear And as vivid as Normal vision)	(Clear and reasonably vivid)	(Moderately clear and vivid)	Vague and dim)	No image at all (only ''knowing'' that you are thinking of The object)

Appendix I

Vividness of future self-Questionnaire (Marks, 1987)

Instruction: Please close your eyes and imagine your future self at the end of the academic semester. Rate the vividness of the visual image, touch, smell, and sound of your future self at the end of the academic semester (e.g. May 2016). Please indicate whichever number you feel is most appropriate for you.

1	2	3	4	5
(Perfectly clear And as vivid as Normal vision)	(Clear and reasonably vivid)	(Moderately clear and vivid)	Vague and dim)	No image at all (only "knowing'' that you are thinking of The object)