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Institutionen för psykologi

At least, I can write about it

- the relationship between creativity and well-being

Jag kan åtminstone skriva om det

- relationen mellan kreativitet och välmående

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Abstract

This thesis investigated the connection between three well-being dimensions consisting of life satisfaction, psychological flexibility, and inflexibility and three creativity measures consisting of cognitive flexibility, originality, and creative self-efficacy. The hypothesis was that there was a connection between creativity and well-being. It was a quantitative study with a cross-sectional design in the form of a survey. There were 120 respondents, 47 attended a creative writing school and the remaining 73 acted as a comparison group. An additional preliminary writer survey was developed to investigate the creative writing students' understanding of how they could use creative writing to satisfy needs and deal with emotions. The result showed the importance of creative self-efficacy for creative individuals. Creative self-efficacy was directly connected to life satisfaction, psychological flexibility and inflexibility and it also moderates both the relation between originality and the well-being measures and the relation between cognitive flexibility and life satisfaction. Students at creative writing schools were highly creative and displayed high creative self-efficacy compared to the comparison group. They were as satisfied with life as the comparison group and as psychologically flexible. The writer survey showed a relation to creative self-identity; the more the students identified themselves as creative, the more they consciously and actively used the writing to improve their mood, recover from stress and to increase satisfaction with life.

Keywords: Psychological flexibility, psychological inflexibility, life satisfaction, cognitive flexibility, originality, creative self-efficacy, creativity

Sammanfattning

Denna kandidatuppsats undersöker kopplingen mellan tre välmåendemått, life satisfaction, psykologisk flexibilitet and psykologisk inflexibilitet och tre kreativitetsmått, kognitiv flexibilitet, originalitet och creative self-efficacy. Huvudhypotesen var att det finns en koppling mellan kreativitet och välmående. Det var en kvantitativ tvärsektionell studie i form av en enkät. 120 personer svarade på enkäten, av dem studerade 47 personer kreativt skrivande på universitetsnivå. De övriga 73 utgjorde jämförelsegrupp. Ytterligare en preliminär skrivarenkät utvecklades för att undersöka skrivarstudenternas förståelse för hur de kunde använda kreativt skrivande för att tillfredsställa behov och bearbeta negativa känslor. Resultatet visade hur viktig creative self-efficacy är för kreativa människor. Creative self-efficacy är direkt kopplat till life satisfaction, psykologisk flexibilitet och psykologisk inflexibilitet och det modererar också förhållandet mellan originalitet och välmåendemåtten samt förhållandet mellan kognitiv flexibilitet och life satisfaction. Studenterna vid skrivarskolorna var mycket kreativa och hade hög creative self-efficacy jämfört med jämförelsegruppen. De svarade lika högt på life satisfaction-enkäten och var lika psykologiskt flexibla. Skrivarenkäten visade att ju mer studenterna identifierade sig som kreativa personer desto mer använde de sitt skrivande för att bli på bättre humör, återhämta sig och bli nöjda med livet.

Nyckelord: Psykologisk flexibilitet, psykologisk inflexibilitet, livstillfredsställelse, kognitiv flexibilitet, originalitet, kreativ self-efficacy, kreativitet

Preface

We would like to give a big thank you to the participants who took the time to answer our quite lengthy survey. Without you there would be no research. And to our amazing supervisors Eva Hoff and Sima Wolgast, from the bottom of our hearts, thank you for making this thesis such a joy to write. With your positivity, inspiration and your deep well of knowledge you kept our excitement for research and our motivation at a constant high. We also want to give a big thank you to Roger Johansson and Martin Bäckström who assisted us with their expertise in statistics.

At least, I can write about it - the relationship between creativity and well-being

Research shows that creative people, with the ability to come up with original ideas and the ability to focus on one line of thought and then easily shift to another, are equipped with a brain that lets too many sensations in (De Manzo et al., 2010). The filter, the thalamus, is leaking, and the person is overwhelmed by impressions. Impressions that others do not notice need to be processed, which consumes energy, and it can create the impression of being different, of not being normal.

Creativity is not convincingly associated with well-being. Students of artistic subjects at university (in Sweden) are at increased risk of developing schizophrenia, bipolar disorder and unipolar depression in adulthood compared to other students (MacCabe et al., 2018). Writers are prone to depression (Runco, 2007), but they keep on writing. Would they feel worse if they stopped? Is the act of creative writing a way to manage their mood? Can creative work be used to improve psychological flexibility and well-being if it is handled in a better way?

This thesis will investigate if well-being and creativity are connected. The samples will be creative writers and a comparison group. Additionally, we will explore the writers' beliefs about how creative writing affects their well-being and psychological flexibility.

Psychological well-being

Psychological well-being has a variety of definitions. In this thesis, we are interested in their subjective feeling of well-being when summing up one's life. We are looking for people's own judgement and not for comparing their lives to predefined criteria. We will focus on satisfaction with life, which is one of three parts of subjective well-being, where the other two, that we will not investigate, are positive and negative affect (Andrews & Whitney, 1976). There are many concepts that are related to psychological well-being, one is psychological flexibility.

Psychological flexibility

According to Doorley and colleagues (2020) well-being is strongly connected to being psychologically flexible, which is a concept from acceptance and commitment therapy (ACT), which is a type of cognitive behavioral therapy, consisting of a series of concepts, namely acceptance, cognitive defusion, being present, self as context, values, and committed action (Hayes et al., 2006). Acceptance is to experience a situation whether it is comfortable or not. Cognitive defusion is when you can stay with your thoughts without letting them control you. Being present is to stay in the moment and to not try to avoid the now by thinking about things in the past or future. Self as context is having a view of oneself that

does not change from experience to experience. Values steer how one wants to behave. Lastly committed action is to behave according to those values (Hayes et al., 2006).

Working with psychological flexibility is about modifying your behaviour to reach your values. To do this you need to be present in the situation even if it is unpleasant (Cherry et al., 2021). Trying to avoid unpleasant feelings and letting that stop you from reaching your valued goals is what causes your well-being to decrease over time (Doorley et al., 2020). If individuals can stay flexible and follow their deepest values, more time will be spent experiencing joy, vitality, and a sense of meaning in life (Hayes et al., 2004a, Hayes et al., 2004b).

Psychological inflexibility

Psychological inflexibility is a term made up of six components, experiential avoidance, cognitive fusion, loss of contact with the present, lack of values, avoidant persistence and attachment to the conceptualized self (Hayes et al., 2013). Experiential avoidance is to try to change an experience even when it is ineffective. Cognitive fusion is when one's thoughts decide one's behaviour without being influenced by emotions or values. Loss of contact with the present is when a person lives in the past, the future or in another reality. Lack of values is when a person lacks clear values, for example by following someone else's values just to fit in, not because they believe in them. Avoidant persistence is to neglect taking needed action and instead hide from the situation. Finally, attachment to the conceptualized self is a strong belief in the story of oneself, a story that may not be true anymore (Hayes et al., 2013). Overall "Psychological inflexibility can be described as a cognitive, emotional, and behavioural pattern that narrows the opportunities provided by the present moment to move toward a valued direction." (Szemenyei et al., 2020, p.1810)

Psychologically inflexible people use a restricted variety of automated defence mechanisms in a rigid way to avoid the unpleasantness of problems they are faced with, and let the avoidance take them further away from their valued goals (Duarte & Pinto-Gouveia, 2017). Although psychological flexibility and inflexibility have a lot in common, they are not two constructs at the opposite end of the same scale because the two constructs manifest themselves in different ways. High psychological flexibility and low inflexibility is connected to high well-being (Doorley et al., 2020). One part of well-being is life satisfaction. How satisfied with life are creative writing students compared to less creative people?

Creativity in relation to well-being and flexibility

Students of artistic subjects at university (in Sweden) are at increased risk of developing schizophrenia, bipolar disorder and unipolar depression in adulthood compared to

other students (MacCabe et al., 2018). Professional writers, dancers, musicians, and artists are more troubled by bi-polar disease than other professionals (Kyaga et al., 2011). Among artists, writers suffer more from depression (Runco, 2007).

Having a creative profession seems to make people suffer from mental health issues more often than people in less creative professions but ordinary day life creativity brings well-being and health (Richards, 2010). Creative writing improves both the immune system and psychological well-being (Pennebaker & Chung, 2007). How do these findings fit together?

Are flexible defences the key?

Perhaps the key to understanding how the findings about mental health issues in creative people fit with the findings that creative activities bring healing is found in the research by Ingegerd Carlsson showing that creative people are characterized by high sensitivity (high levels of anxiety and tension) and flexible ways to handle the anxiety (Carlsson, 2002). de Manzano seems to agree about the flexibility, stating that the brain's basic filter, the thalamus, is less active in creative individuals. More sensations slip through the filter creating a higher tension and a greater need to develop a large variety of defence mechanisms which makes the defence more flexible (de Manzano et al., 2010). Avoidance is a defence mechanism that is a characteristic of psychological inflexibility along with the tendency to use only a few defences repeatedly for all situations independent on if it is suitable or not (Duarte & Pinto-Gouveia, 2017). Flexible defences and psychological inflexibility are different constructs, but there are some similarities as shown above that make us interested in whether creative writers are less inflexible than the comparison group. Are there any defence mechanisms especially useful for creative writers?

Creative writing and flexibility

One defence mechanism that stands out especially for writers is sublimation through creative writing. By writing about an event the writer voluntarily re-experiences the painful memory. According to Carson, Peterson and Higgins (2003) creative people can stay longer in specific states of mind with lower inhibitions that most people find difficult or unpleasant to be in. Perhaps what drives creative people to stay in that mindset is Pennebaker and Chung (2007) state that positive emotions arise when the traumatic experience is transformed into creative writing that expresses something important. It leads to reappraisal or processing that can provide an external perspective on one-self.

In an experiment by Pennebaker and Beal in 1986, the experiment group was asked to write about their thoughts and feelings about the worst trauma they had experienced for 14 minutes a day for 4 days in a row. Although the participants found the writing upsetting, they also found it meaningful and over the following six months, they visited a physician to a lesser degree than the control group that had written about superficial things. This is called the expressive writing paradigm. Since then, several hundred experiments have confirmed the healing aspects of creating writing on physical health, stress, trauma, emotion regulation but there have also been some adjustments to the paradigm. For instance, it seems equally healing to write about someone else's trauma and the people who benefit most from expressive writing are the ones that have the most difficulty feeling and talking about negative emotions (Smyth & Pennebaker, 2008).

Being able to stay in the unpleasant feelings seem to be a characteristic of creative writers and it is also an important part of being psychologically flexible where acceptance is the ability to experience a situation even when it is uncomfortable and cognitive defusion is when you can be in your thoughts without them controlling you. Does the disposition to enjoy creative writing entail voluntarily staying in unpleasant feelings? And does that make you more psychologically flexible?

Up until now, flexible defences and ways to handle emotions have been discussed in this thesis, but how are flexible ways of thinking related to creativity?

Creativity, cognitive flexibility, and originality

Cognitive flexibility is about thinking new thoughts and letting go of fixations to create new associations between concepts (Guilford, 1967). Alternatively, by Martin and Anderson (1998) cognitive flexibility has been defined as “(a) awareness that in any given situation there are options and alternatives available, (b) willingness to be flexible and adapt to the situation, and (c) self-efficacy or belief that one has the ability to be flexible” (Martin & Anderson, 1998, p.1). Note that these definitions are separate from the cognitive flexibility definition used in neuropsychology, which is not explored in this thesis. High cognitive flexibility is connected to better creative achievement (Carson, Peterson & Higgins, 2005). A creative achievement is producing something that is both new and useful (Stein, 1953). Cognitive flexibility is said to be the cognitive core of creativity (Beghetto & Kaufman, 2007). Is cognitive flexibility also a prerequisite to be psychologically flexible? Previous research has shown that cognitive flexibility can be enhanced using mindfulness meditation (Colzato, Szapora & Hommel, 2012) which is also true for psychological flexibility (Hayes et al., 2006), psychological inflexibility (Mak et al., 2020) and life satisfaction (Chan, Lee and

Mak, 2018). Mindfulness seems to be an activity that affects both cognitive flexibility and the well-being measures. Does cognitive flexibility not only predict creativity, but also predict well-being?

If cognitive flexibility is the cognitive core of creativity and a prerequisite to be able to be creative, the word originality is often used interchangeably with creativity itself. Originality is the ability to come up with original ideas (Guilford, 1957). Cognitive flexibility and originality are not the only thing that is needed to be creative. Self-efficacy is another construct that has been linked to creative performance.

Creative personal identity and creative self-efficacy (CSE)

We have discussed ways of thinking, feeling, and behaving but what about identity and self-confidence? Creative personal identity is about how a person looks upon their own creative capacity, if they think they are creative persons, and whether creativity and ingenuity is important to them and for who they are (Karwowski Lebuda, & Wiśniewska, 2018). Creative Personal Identity will from now on be called CPI.

Creative self-efficacy (Jaussi, Randel, & Dionne, 2007) is the individual's own belief about whether they can solve problems that arise in everyday life in a creative way. Creative self-efficacy will from now on be called CSE. Research shows that CSE is a part of the interaktion between creativity and well-being. Demirtaş (2020) has found connections between self-efficacy and well-being and Karwowski & Barbot (2016) has found indications that there is a connection between creative self-efficacy and creative persons. We want to investigate if creative self-efficacy can be an agent that moderates the relation between creativity and well-being. According to socio-cognitive theories (Bandura, 1986, 1997), CSE is influenced by the social and psychological environment during development and tends to be quite stable (Karwowski, 2015b) but still, self-efficacy can be improved. There are several results showing not only do CSE vary across cohorts (Karwowski, 2016) but also that by mastering a creative area and by the influence of teachers (Karwowski, Gralewski, & Szumski, 2015).

The background research for this thesis comes from two separate research domains. There is on the one hand research on subjective well-being and how important psychological flexibility is for well-being. In this thesis that will be called the well-being domain. On the other hand, there is also the research domain about the connections between originality, cognitive flexibility and creative self-efficacy, from now on called the creativity domain.

There is little research connecting the well-being and creativity domains. The existing research we found was expressed vaguely or indirectly, for example: creativity is suggested

to increase the rate of recovery from illness (Stuckey & Nobel, 2010). But we will suggest different ways in which the domains are related.

Creative self-efficacy can be improved by mastering a creative area (Karwowski, Gralewski & Szumski, 2015). Does mastering a creative area and, by that, increasing creative self-efficacy have any relation to psychological flexibility which we know generates well-being? In reverse, does the frustration of not having mastered a creative area decrease well-being? Does enrolling in a creative writing education increase the frustration of not having mastered creative writing or does it boost creative self-efficacy? Do creative writers have high creative self-efficacy and how does it relate to their well-being?

Purpose

As shown above there is plenty of research since the 1960's regarding different aspects of creativity and creative self-efficacy. Recently there has been high interest in research regarding well-being and its connection to psychological flexibility and inflexibility. What we need to find out more about is the connections between creativity and well-being.

Main Hypothesis:

There is a connection between creativity and well-being.

Supporting hypothesis

- There is a connection between cognitive flexibility and well-being measures (including life satisfaction, psychological flexibility, and inflexibility) and CSE moderates the relation.
- There is a connection between originality and well-being measures (including life satisfaction, psychological flexibility, and inflexibility) and CSE moderates the relation.
- There is a connection between creative self-efficacy and well-being measures (including life satisfaction, psychological flexibility, and inflexibility)
- A) The creativity measures and well-being measures differ between different samples, writers, and non-writers. B) Percentage of having a creative outlet also differ between the samples
- Exploration of writers' perception of how their needs and emotions are being processed in their writing process and how this is related to well-being and creativity

Method

The study was performed as a quantitative study with a cross-sectional design in the form of a survey. The method was chosen with reference to our research question and hypotheses and a survey was considered a suitable and effective method to collect the required data.

Sample

The sample creative writers attended five different schools of creative writing. The comparison group was created through convenience sampling via Social Media. The participants had to be 18 years or older to take the survey. In the end, there were 66 participants from the creative writer-group and 110 participants from the non-writers. From the 66 participants from the creative writer's group, four were removed because they had answered the survey control question incorrectly and 15 participants had left the survey incomplete. This left us with 47 participants from the creative writer group. From the comparison groups 110 participants, five were removed because of giving an incorrect answer to the control question and 32 participants had left the survey incomplete in various manners, ending up with 73 participants from the comparison group and a total number of 120 participants. The creative writer group consisted of 40 (85.1 %) women, 6 (12.7 %) men and 1 (2.1 %) other. The comparison group consisted of 53 (72.6 %) women and 20 (27.4 %) men, giving us a sample of 93 (77.5 %) women, 26 (21.6 %) men and 1 (0.8 %) other. Further, the creative writer group had an age range from 22 to 69 with a mean age of 46.3, there were three participants who chose not to answer the question about their age. The comparison group had an age range from 18 to 74 with a mean age of 47.1 and five participants who chose not to answer what their age was.

Materials

Psychological flexibility was measured with the psychological flexibility questionnaire, the PFQ, developed by Wolgast, Wolgast and Hoff (2021). It measures five of the six factors of psychological flexibility: present focused awareness, experiential acceptance, committed action, clarity of values and cognitive defusion. Excluding the sixth part: self as context. The PFQ scale had 15 statements, three for each subscale. The participants' answer was given on a five-point Likert scale from "completely disagree" to "completely agree". As an example, from the subscale "experiential acceptance" one question was: "I can be in contact with painful memories, without trying to find something that distracts me from them". The internal consistency for the subscales was high at Present focused awareness ($\alpha = .90$), Experiential acceptance, ($\alpha = .84$), Committed action, ($\alpha = .82$),

Clarity of values, ($\alpha = .78$) and Cognitive defusion, ($\alpha = .75$). The internal consistency of the entire scale was .89 for PFQ-Flexibility (Wolgast, Wolgast & Hoff, 2021).

The internal consistency for the survey preceding this thesis was high at Present focused awareness ($\alpha = .75$), Experiential acceptance, ($\alpha = .73$), Committed action, ($\alpha = .75$), Clarity of values, ($\alpha = .76$) and Cognitive defusion, ($\alpha = .75$). The internal consistency of the entire scale was .73 for PFQ-Flexibility.

Psychological inflexibility was measured by a separate scale, the PFQ-inflexibility, developed by Wolgast, Wolgast and Hoff (2021). As might be expected given the present theories on psychological flexibility, the factors of each scale were related but yet distinguishable at ($.20 < r < .50$).

The test measures five of the six parts of psychological inflexibility: unclear values, lack of present focused awareness, experiential avoidance, cognitive fusion and avoidance and inaction. Excluding the sixth part of psychological inflexibility: self as content. The scale has 15 statements, three for each subscale. The scale was a five-point Likert scale that went from “completely disagree” to “completely agree”. One statement, for example, from the subscale “unclear values” was: “I often feel unsure of what I really want”. The internal consistency was high at Unclear values ($\alpha = .88$), Lack of present focused awareness, ($\alpha = .83$), Experiential avoidance, ($\alpha = .80$), Cognitive fusion, ($\alpha = .75$) and Avoidance and inaction, ($\alpha = .73$). The internal consistency of the entire scale was at ($\alpha=.86$) for PFQ-inflexibility (Wolgast, Wolgast & Hoff, 2021).

The internal consistency for the survey in this research was high at Unclear values ($\alpha = .76$), Lack of present focused awareness, ($\alpha = .77$), Experiential avoidance, ($\alpha = .75$), Cognitive fusion, ($\alpha = .77$) and Avoidance and inaction, ($\alpha = .75$). The internal consistency of the entire scale was at ($\alpha=.81$) for PFQ-inflexibility.

Life satisfaction was measured through the Satisfaction with life scale (SWLS), (Diener et al., 1985). The scale has five statements about your general satisfaction with life which the participant can either agree or disagree with on a seven-point Likert scale ranging from 1= “strongly disagree” to 7= “strongly agree”. The participants receive a score from one to seven for each of the five statements according to their answer, these are then multiplied giving the participants a general score for their satisfaction with life. The higher the score, the higher the life satisfaction. These scores divide the participants into groups where they are either highly satisfied, satisfied, average satisfied, slightly below average in life satisfaction, dissatisfied or extremely dissatisfied with life.

Cronbach's alpha for the five-item scale according to previous studies on the Swedish translated version was .88, suggesting high internal consistency (Hultell & Gustavsson, 2008). The internal consistency for the survey preceding this thesis was high at ($\alpha=.86$).

Cognitive flexibility and originality both were measured through the Unusual uses task (UUT) constructed by J.P Guilford (1967) to measure creative thinking. In this test the participants had three minutes figuring out as many different uses for a brick they could possibly figure out. The answers, or uses, given by the participant are then scored in two different ways to measure separate dimensions. The first measure dimension in cognitive flexibility, this was calculated by first sorting all answers into 13 categories, in which each participant's answers are then categorised. The participant receives one point for each category, meaning that if the participant wrote their different uses within one category, they receive one point on the cognitive flexibility scale. The second dimension measured by this test is originality. This was measured by giving out two points to each listed use which one percent or less of the participants had listed and one point to uses that had been listed by five percent or less of the participants. These scores were then added for each participant for an originality-score. In this test the internal consistency was high for UUT at $\alpha=.84$ with the three dimensions.

Creative Self-Efficacy was measured with “The Short Scale for Creative Self” (SSCS by Karwowski, 2012). The SSCS consisted of 11 items, six which measure Creative self-efficacy (CSE) and five which measure Creative Personal Identity (CPI). Examples of statements measuring CSE on the SSCS are “I trust my creative abilities” and “I am good at proposing original solutions to problems”. Statements measuring CPI are, for example, “I think I am a creative person” and “Ingenuity is a characteristic which is important to me”. The statements were measured on a five-point Likert scale that ranges from “definitely not” to “definitely yes”. The internal consistency of the CSE and CPI scales was high at: CSE ($\alpha = .81$) and CPI ($\alpha = .90$). In the survey preceding this thesis the internal consistency was also high at: CSE ($\alpha = .83$), and CPI ($\alpha = .81$).

In this thesis, to avoid mixing identity with the other creative dimensions, CPI is not included in what we choose to define as the creativity domain.

Writer’s survey was developed in addition to the surveys above. This new survey was constructed with the intention to understand how the creative writers personally perceived the effects of their writing on themselves and their well-being. With this survey the intention was to explore the process of psychological flexibility and life satisfaction in connection to the process of writing. The survey consisted of ten statements and each statement was measured

on a five-point Likert scale where 1= totally disagree and 5= totally agree. The statements can be found in appendix A. The internal consistency was high at ($\alpha=.72$)

Procedure

The survey was administered through Qualtrics. Then a link for the writer's group was posted in several groups on Facebook that are dedicated to writing. Another link was posted on the thesis authors' Facebook pages and re-posted by social media friends to their respective pages. The survey was available for 10 days. Other than the addition of the writers' survey to that group, both surveys consisted of a consent form and a short introduction where participants were briefly informed that the survey concerned well-being and creativity. The questions were presented in the same order for all the participants. In the final part of the survey the participants answered questions about themselves concerning their age, gender and if they have a creative outlet, to check that there actually were more people with creative outlets in the writer group. There was also a question about whether the participants practiced mindfulness. The result of the question was not used in this thesis. In total the survey took around 8 to 15 minutes to complete.

The collected material was then processed in Excel to correctly score the UUT, an Excel sheet was programmed to simplify the process and reduce human error. With the help of this programming the scores were carefully counted and categorised.

Data analyses

Results were analysed in the statistical processing program Jamovi. From an inspection of the histogram all variables except for CSE and creativity looked normally distributed. Skewness and kurtosis deviations were in an acceptable range for the other constructs but not for CSE and creativity, which lead to confirming the results with non-parametric tests: Mann-Whitney for t-test and Spearman for correlations. The internal consistency for all the scales and subscales in the survey were examined and Cronbach's alpha values were calculated.

The data was then analysed through various independent t-tests, correlations, and a principal component analysis. Effect sizes were measured with Cohen's d, an index of 0.2 indicates a low effect, 0.4-0.5 indicates a medium effect and an index of 0.6-0.8 indicates a high effect.

Ethical considerations

An important ethical consideration one needs to consider when conducting a study is that of informed consent. At the beginning of the survey the participants had to agree to be a part of the study, where information about the study was included. The participants were

informed that they could withdraw from the survey at any time if they wanted. The participants in this study were anonymous. This was done by only collecting information about the participants' age and gender. No additional information was collected that could be used to trace the participants' answers to a specific person. The Qualtrics program has an option where any information as an IP address can be excluded from the information that the program picks up from the user. At the end of the survey, we included information on how to contact us in case they have any questions about the survey or study in general.

Results

Connection between the creativity measures and the well-being measures

Relations were analysed using Pearson's correlation. Previous research results were confirmed; the different well-being measures correlated with each other. Psychological flexibility correlated with psychological inflexibility ($d = -.644, p < .001$), Psychological flexibility correlated with life satisfaction ($d = .468, p < .001$), Psychological inflexibility correlated with life satisfaction ($d = -.504, p < .001$). Cognitive flexibility correlated with originality ($d = .607, p = .017$). Creative Self Efficacy correlated with one of the creativity measures: cognitive flexibility ($d = 2.18, p = .017$) but not with originality ($d = .120, p = .191$).

Table 1

Descriptive statistics and correlations for the total sample (variables 1-7) and the writer sample (variables 8-10) using Pearson correlation.

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1 Psychological Flexibility	120	66.6	8.72	-								
2 Psychological Inflexibility	120	45.00	10.9	-.644**								
3 Life satisfaction	120	24.3	6.46	.468**	-.504**							
4 CPI	120	21.3	4.13	.173	-.040**	-.033						
5 CSE	120	26.1	3.71	.400**	-.247**	.375**	.601**					
6 Cognitive flexibility	120	5.31	2.36	.066	-.117	.017	.334**	.218*				
7 Originality	120	4.17	4.23	.023	-.090	-.082	.275**	.120	.607**			
8 Writer Survey	47	36.6	5.88	-.007	.108	-.045	.396**	.066	-.072	-.067		
9 Dealing with negative emotions	47	16.8	4.25	-.101	.236	-.047	.261	.126	-.203	-.172	.865**	
10 Satisfying a need	47	19.8	3.07	.127	-.121	-.021	.397**	-.048	.144	.110	.718**	.271

* $p < .05$, ** $p < .01$

Connection between cognitive flexibility and the well-being measures

A correlation analysis showed no correlation between cognitive flexibility and the well-being measures (see table 1) but subsequent linear regressions with creative self-efficacy as a moderator indicated a relation in a moderation analysis. When using CSE as a moderator, cognitive flexibility correlated with life satisfaction $Z(118) = 3.107, p = .002$. In a simple slope analysis, we found that the relation was significant when the moderator was low. It meant that when CSE was low and cognitive flexibility was high then life satisfaction was low.

Table 2*Moderation analysis of CSE as a moderator between cognitive flexibility and life satisfaction*

<i>Scale</i>	<i>Estimate</i>	<i>SE</i>	<i>Z</i>	<i>p</i>
a: cognitive flexibility - life satisfaction	-.218	.223	-.977	.329
b: CSE - life satisfaction	.792	.1415	5.597	< .001
a*b	.179	.0575	3.107	.002

There was no connection between cognitive flexibility and psychological flexibility nor inflexibility and CSE did not act as a moderator.

Connection between originality and the well-being measures

A correlation analysis showed no correlation between originality and the well-being measures (see table 1) but a subsequent linear regression with creative self-efficacy as a moderator indicated a relation in a moderation analysis. When using CSE as a moderator, originality correlated with life satisfaction $Z(118) = .0985$, $p = .003$. In a simple slope analysis, we found that the relation was significant when the moderator was low. It meant that when CSE was low and originality was high then life satisfaction was low.

Table 3*Moderation analysis of CSE as a moderator between originality and life satisfaction*

<i>Scale</i>	<i>Estimate</i>	<i>SE</i>	<i>Z</i>	<i>p</i>
a: originality - Life satisfaction	-.2001	.123	-1.61	.106
b: CSE - Life satisfaction	.756	.141	5.36	< .001
a*b	.0985	.0337	2.92	.003

When using CSE as a moderator, originality was associated with psychological flexibility $Z(118) = .094$, $p = .041$. In a simple slope analysis, we found that the relation was significant when the moderator was low. It meant that when CSE was low, and originality was high then psychological flexibility was low.

Table 4*Moderation analysis of CSE as a moderator between originality and psychological flexibility*

Effect	<i>Scale</i>	<i>Estimate</i>	<i>SE</i>	<i>Z</i>	<i>p</i>
Direct	a: originality - psych flex	-.1392	.1694	-.822	.411
Direct	b: CSE - psych flex	1.0301	.1927	5.346	< .001
Indirect	a*b	.094	.046	2.042	.041

When using CSE as a moderator, originality correlated with psychological inflexibility $Z(118) = -2.156$, $p = .031$. In a simple slope analysis, we found that the relation was significant when the moderator was high. It meant that when CSE was high and originality was high then psychological inflexibility was low.

Table 5

Moderation analysis of CSE as a moderator between originality and psychological inflexibility

Effect	Scale	Estimate	SE	Z	p
Direct	a: originality - psych inflex	-.153	.2228	-.687	.492
Direct	b: CSE - psych inflex	-.802	.2534	-3.166	.002
Indirect	a*b	-.131	.0605	-2.156	.031

Connection between creative self-efficacy and the well-being measures

Creative self-efficacy correlated significantly with psychological flexibility ($d = .400$, $p < .001$), psychological inflexibility ($d = -.247$, $p = .007$) and life satisfaction ($d = .375$, $p = .001$).

How the creativity measures and well-being measures differ between different samples
Comparing creative writers with the comparison group

Most of the writers group had a regular creative outlet (85.11%) compared to about half of the comparison group (49.32%). The result from an independent t-test analysis showed no difference between creative writers and control group in terms of psychological flexibility or inflexibility but it showed a difference in cognitive flexibility $t(118) = -2.615$, $p = .011$, $d = .4992$.

Table 6

Table of means, standard deviation, independent samples Student's t-test and effect size for the writer and comparison samples

Constructs	Writers		Comparison		<i>t</i> (118)	<i>p</i>	Cohen's <i>d</i>
	M	SD	M	SD			
Psychological Flexibility	66.3	9.51	66.7	8.24	.219	.827	.0409
Psychological Inflexibility	45.3	10.1	44.9	11.4	-.207	.837	-.0386
Cognitive flexibility	6.02	2.57	4.85	2.11	-2.729	.007	-.5103

The results for life satisfaction did not prove equal variance, which is why a Welch t-test was used. Life satisfaction did not differ between the samples.

Table 7

Table of means, standard deviation, independent samples Welch's t-test and effect size for the writer and comparison samples

Constructs	Writers		Comparison		<i>t</i> (118)	<i>p</i>	Cohen's <i>d</i>
	M	SD	M	SD			
Life Satisfaction	23.00	7.33	25.1	5.74	1.63	.106	.313

The histograms for creative self-identity, creative self-efficacy and originality did not seem normally distributed for the writer group: CPI skewness = -2.41, SD = .347, CSE skewness = 1.89, SD = .347 and originality skewness = 3.47, SD = 1.36 which is why we used a Mann-Whitney analysis for non-parametric distributions. The test showed a difference

between the groups in creative self-identity $U(118) = 796, p < .001, r = .536$, CSE ($U(118) = 1155, p < .002, r = .327$) and originality $U(118) = 1068, p < .001, r = .378$.

Table 8

Table of means, standard deviation, independent samples Mann-Whitney U-test and effect size for the writer and comparison samples

Constructs	Writers		Comparison		$U(118)$	p	Ranked biserial r
	M	SD	M	SD			
CPI	23.6	2.19	19.9	4.45	796	< .001	.536
CSE	27.1	3.56	25.4	3.69	1155	.002	.327
Originality	5.68	4.85	3.19	3.46	1068	< .001	.378

Exploration of writers' perception in relation to creativity and well-being

The creative writing group answered an additional survey, the writer survey, about their own perception of how creative writing affects them psychologically. Bartlett's test of sphericity indicated that reduction was possible, $\chi^2(45) = 133, p < .001$. Sampling adequacy was satisfactory at above .6 for all items. Despite the small sample size of 47, a Principal Component Analysis (PCA) using varimax rotation indicated two possible factors that were named 1 *Dealing with negative emotions through creative writing* and 2 *Satisfying a need through creative writing*. The model coverage was 50.2%.

Table 9

Result from a Principal Component analysis of the Writer Survey

PCA Item	Factor Loading	
	1	2
Q1 My creative writing contributes to my satisfaction with life	.26	.52
Q2 My life would be equally satisfying if I stopped writing (R)	.06	-.63
Q3 When I write, I process negative feeling so they affect me less	.79	.33
Q4 When I write, I sometimes become absorbed by emotions that I have a hard time letting go of	.69	-.03
Q5 I am often in a better mood after having spent some time on creative writing	.18	.71
Q6 My creative writing makes me feel that I can regain my peace of mind	.68	.51
Q7 To become fully absorbed by the creative writing process is a way for me to recover	.30	.65
Q8 To become fully absorbed by the creative writing process can sometimes be frightening	.73	-.26
Q9 When I experience negative emotions, I can use them in my writing in a constructive way	.55	.25
Q10 When I experience negative emotions, I become absorbed by them, which makes it hard to write (R)	.29	-.50

Note: $N = 47$. Factor loadings above .30 are in bold. Reverse score items are denoted with an (R).

The writer survey correlated with creative personal identity, $CPI d(47) = .396, p = .006$, see Table 1. It was the factor *Satisfy a need through creative writing* that showed the correlation with $CPI d(47) = .397, p = .006$. This means that students with high creative identity used their writing to satisfy a need more than students with low creative identity.

The survey did not correlate with any of the other creativity or well-being measures, see table 1.

Discussion

What does the connection between cognitive flexibility, originality, and well-being moderated by CSE mean?

The results of this study revealed that there were no direct relations between creativity and well-being in any respect. It was surprising as earlier research has found such relations at least between psychological mental health (Kyaga, 2011; MacCabe et al., 2018; Runco, 2007). Our study did not measure mental illness, only the positive concept of life satisfaction, which may be one explanation for the different results.

However, when a moderation analysis was made with creative self-efficacy as the moderator, cognitive flexibility as the predictor and life satisfaction as the dependent variable, a relation was found, indicating that there is a link between cognitive flexibility and life satisfaction when creative self-efficacy is also present. The moderation analysis showed a particular influence from low creative self-efficacy, which meant that in combination with low CSE a cognitively flexible person is likely to score lower on life satisfaction. Individuals could thus find many creative solutions in their lives but if they do not believe in themselves as creative, they might not think that their ideas will help. They may come up with creative ideas about what to do but may not have the confidence to act on the idea. Their life satisfaction will stay low. However, if they believe in their creative ability, they may trust their own ideas and go through with them which would make them feel better. Cognitive flexibility has been defined as “(a) awareness that in any given situation there are options and alternatives available, (b) willingness to be flexible and adapt to the situation, and (c) self-efficacy or belief that one has the ability to be flexible” (Martin & Anderson, 1998 p.1). By looking at this definition one can see that self-efficacy is needed for a person to be cognitively flexible. Furthermore, earlier research has found a link between cognitive flexibility and self-efficacy with well-being in adolescents, where higher cognitive flexibility and self-efficacy improves the well-being of the person (Demirtaş, 2020). This research is about self-efficacy, not creative self-efficacy, two related but different constructs. The findings in this study strengthen and expand on Demirtaş findings.

There were no direct relations between originality and the well-being measures. An indirect effect on how originality is associated with life satisfaction (and psychological flexibility/inflexibility) was found when CSE acted as a moderator. It meant that if the participants had high creative self-efficacy combined with high originality, then they also have a low psychological inflexibility. If the creative self-efficacy was low combined with high originality the psychological flexibility and life satisfaction was low.

Further research is needed to establish a causal relationship. We do not know if increasing their originality when self-efficacy is high causes life satisfaction and psychological flexibility to increase. Further research could investigate if increasing the creative self-efficacy for those who are highly original but with low creative self-efficacy can shift the prediction that they will have low well-being and psychological flexibility, to the opposite.

Why did not one flexibility construct relate to the other?

The results showed no relations between cognitive flexibility and psychological flexibility or between cognitive flexibility and psychological inflexibility. Although the terms seem to be similar there are some key differences between them. Psychological flexibility is “the ability to contact the present moment more fully as a conscious human being, and to change or persist in behaviour when doing so serves valued ends” (Hayes et al., 2006). Psychological flexibility puts a lot of emphasis on protecting a person's values, to change according to one's values. Cognitive flexibility is a more open-ended flexible mechanism where a person's ability to change is more concerned with how many options that person sees and in how to solve the problem at hand. This could be a reason for why there is no association between cognitive flexibility and psychological flexibility. A person could be cognitively flexible but does not necessarily have to be psychologically flexible or vice versa, or even at times both could be high or low. Sometimes the problem at hand requires a person to think outside the box and go against one's values but if that person does so they are not very psychologically flexible but rather cognitively flexible. A person could be psychologically flexible and with that have learned techniques to solve problems that arise. This person then only uses the learned ways to deal with a problem and does not look for new solutions and thus does not use cognitive flexibility.

Another reason for why there is no relation could be due to what psychological inflexibility entails. If a person is psychologically inflexible, they are not able to adapt their behaviour to solve a problem they face and align with their goals. Instead, they try to avoid it (Durate & Pinto-Gouveia, 2017). Cognitive flexibility is a type of divergent creativity, which is the ability to come up with many different options or solutions for a specific problem. So, a person could be high in psychological inflexibility and try to avoid any sign of emotional distress and still be high in cognitive flexibility in the sense that they could find many ways to avoid feeling distressed. In contrast, a person could be low in psychological inflexibility and still have high cognitive flexibility, but instead of looking for solutions of how to avoid

emotional distress the person has used their cognitive flexibility to look for ways in how to deal with it.

What does the connection between creative self-efficacy and well-being measures mean?

The results indicate that creative self-efficacy is more important than we thought when this research began. It correlates to life satisfaction, cognitive and psychological flexibility, and inflexibility. It moderates how cognitive flexibility affects life satisfaction and how originality affects all three well-being measures. Creative self-efficacy is the conviction that individuals can solve complicated problems and handle difficult situations thanks to their creative thinking. It is about being inventive and about trusting their creative abilities. It is a personal belief, not a measurable fact that they are, in truth, creative.

The moderation charts all show a similar pattern independent of if it is life satisfaction, psychological flexibility or inflexibility that is being analysed. Low creative self-efficacy combined with a creative mind means low life satisfaction, flexibility, and high inflexibility. Further research is needed to establish a causal relationship. Can well-being increase if creative individuals increase their creative self-efficacy? We know from previous research that creative self-efficacy is something that can be increased by mastering a creative area, by having a role model, by getting praise from authority figures (Karwowski et al., 2015).

Differences between writers and comparison group in well-being-measures

The results showed that there were no differences in life satisfaction between creative writers and the comparison group. Previous research shows that creative people experience less well-being than the general population and feel more anxiety (Carlsson, 2002), and that writers are more prone to depression (Runco, 2007). Students of artistic subjects at university in Sweden have higher risk of developing schizophrenia, bipolar disorder and unipolar depression in adulthood compared to other students (MacCabe et al., 2018).

At the same time, the process of creative writing is beneficial for the writer. Previous research found that creative activities in your everyday life increase well-being and health (Richards, 2010) and that 15 minutes of creative writing about an experience of a traumatic event for 4 days reduces visits to a physician in the coming 6 months for people that have difficulty talking about emotions (Smyth & Pennebaker, 2008). Perhaps the students' satisfaction with life can be explained by how the activity of creative writing has such strong beneficial effects on well-being that it balances the mental health issues on a group level?

Although the students were more creative than the comparison group, there was no difference between the writer group and the comparison group in psychological flexibility

and inflexibility, which we had expected there would be. This contrasts with previous research that showed that creative people develop flexible ways to handle anxiety (Carlsson, 2002) and that creative people develop a large variety of defence mechanisms which makes the defence more flexible (de Manzano et al., 2010). Experiential avoidance and avoidance persistence are two key parts of psychological inflexibility (Hayes et al., 2013). Our results cannot show that the creative writing students used experiential avoidance or avoidance persistence as defence any less than the comparison group.

We expected the creative writing students to favour sublimation over avoidance as a defence. Sublimation is transforming painful emotions into something useful, for example text. Sublimation into text requires the author to remain in the unpleasant state of mind connected to the painful emotion. Being able to remain in an unpleasant state of mind is a key part of psychological flexibility (Hayes et al., 2006). Does the disposition to enjoy creative writing mean an increased ability to voluntarily stay in unpleasant feelings? The lack of difference in psychological flexibility and inflexibility compared to the comparison group shows no such connection, but the result of the writer's survey further down in this thesis gave some indications that there may be some results worth investigating further in future research.

Differences between writers and comparison group in creativity measures

Since the creative writer group was chosen with the intent to target a creative sample there was, not surprisingly, a preconceived notion that they would be significantly more creative in different measures than the comparison group. There are many different forms of creativity and creative outlets, which is why a question about creative outlets was included to all participants to make sure we did not target a comparison group that all engaged in various regular creative outlets. As expected, the comparison group did not have a creative outlet to the same extent as the writer group.

Our results showed that the creative writing students in our sample are more cognitively flexible, meaning that they have a greater ability to change typical cognitive patterns and free themselves of cognitive fixedness thus having an advantage in making new and creative connections between concepts (Guilford, 1967). This ability could be useful in constructing a story, since cognitive flexibility is one of the crucial mental abilities underlying creative thinking (Ritter et al., 2014), and might have drawn the writers to their creative outlet. There is also a possibility that their cognitive flexibility has evolved through the process of creating text and analysing the text of fellow students. To enhance cognitive flexibility, it is not enough to just observe someone doing something unusual, such as reading

a text written in an unusual way. One needs to be actively engaged, as one is when analysing someone else's text. It is only when one is actively engaged, one can break free from one's schemas (Ritter et al., 2012). If any group is used to identifying with others, imagining seeing through other eyes and feeling their experiences, it is probably creative writers. It is suggested by Ritter et al. (2014) that the process of enhancing cognitive flexibility comes about by breaking expectations to overcome mental fixedness (Guilford, 1967).

Originality is another creative measure examined in this essay. As anticipated, the creative writer group was significantly more original than the comparison group. Originality in its turn was significantly correlated to cognitive flexibility.

When measuring the CSE between the two groups the research hypotheses was confirmed. The creative writers had significantly higher CSE than the comparison group. This can imply that enrolling in a creative writing education might increase CSE because the students learn to master a creative area. Other reasons CSE can increase are from the influence of teachers (Karwowski, Gralewski & Szumski, 2015). This study did not measure the students CSE before and after studying. Perhaps they had the courage to apply to the writing schools because they already had high creative self-efficacy?

By having high creative self-efficacy, the students ended up on the positive slope where CSE moderated cognitive flexibility and originality so that life satisfaction increased the more cognitively flexible and original the person was. The high creative self-efficacy may explain why the students had equal life satisfaction to the comparison group, in spite of previous research showing that writers are prone to depression (Runco, 2007) and that studying creative subjects at university level is connected to increased risk of developing schizophrenia, bipolar disorder and unipolar depression in adulthood compared to other students (MacCabe et al., 2018). It seems important to investigate further, in future research, if increased creative self-efficacy is beneficial for life satisfaction even for other groups with high creativity such as creative professionals.

Exploration of writers' perception

A preliminary principal component analysis indicated that the writer survey may capture two dimensions. One factor circled around using creative writing to satisfy some need and the other was focused on using creative writing to deal with negative emotions. There was a connection between the survey and creative identity. People who scored high on the writer survey also scored high on creative identity. A strong creative personal identity means that the person thinks they are creative persons, and that creativity and ingenuity is important to them and for who they are (Karwowski, Lebuda, & Wiśniewska, 2018). The writers had a

significantly stronger creative personal identity than the comparison group. Does the opportunity to study and be part of a group with like minded creative people increase one's creative self-identity?

The higher creative identity they had, the more they saw creative writing as a tool to satisfy a need. They felt that their lives would not be as satisfying if they stopped writing. They used creative writing to improve their mood, recover from stress and to increase satisfaction with life. This is in line with previous research on the healing effects of creative writing (Smyth & Pennebaker, 2008). The writers seem highly active and conscious in their efforts to improve life satisfaction. It did not just happen by chance. Is it thanks to their conscious efforts that they proved to be equally satisfied with life as the comparison group? Would they suffer more from depression if they stopped writing as previous research (Runco, 2007) and the result of the writer survey suggests? Earlier research showed that only 15 minutes of creative writing a day for 4 days had an effect on physical and psychological health (Smyth & Pennebaker, 2008). What is then, the impact of a whole year of creative writing? Future research could investigate the effect a year at a creative writing school has on mental health, creative self-efficacy, creative self-identity, and life satisfaction.

Strength and limitations of the study

The five out of six questionnaires that were used for this thesis have all been previously used and tested. The last questionnaire that was only given to the writer group was created for this study. This writers' survey had a good internal consistency. However, if we had more time, it would have been wise to do a test-retest and test the construct validity to ensure the reliability and validity of the questionnaire. All the questionnaires, PFQ-flexibility, PFQ-inflexibility, SWLS, UUT, and SSCS have been found to have high internal consistency both in this thesis and previous studies. The SWLS have also been previously found to be high in temporal reliability (Diener et al., 1985). These aspects point in the right direction when it comes to the overall reliability of the results we have gathered.

In this study we decided to use a convenience sample to get the comparison group participants for the survey. This could pose a threat to our external validity as some of the participants who conducted the survey are acquaintances to us on the social media platforms that we posted the link on. They are hardly representative of the whole population of Sweden. To slightly improve this drawback, we also used a snowball sampling, where we encouraged participants to share the link to the survey to people that they knew. This may have increased the variance of people who participated in the survey. One more limitation with the sample was that we had a relatively small sample group of writers, 47 people. This is a risk in how

representative the results are to the rest of the writer population. Also, we tested writers as they are a creative group, however, would other creative groups like painters give similar results? It would be interesting to test if other types of creative groups would give similar results or different ones, for example, testing a sculpture or painting group.

The construct validity of this thesis is good. The SWLS test has in a previous study shown to significantly correlate with other ways of measuring well-being (Diener et al., 1985). A good sign that it is measuring well-being and not anything else. The PFQ-flexibility and PFQ-inflexibility has been made with Hayes previous work in mind and have incorporated most of the ACT principles which are at the core of psychological flexibility. This was done to make sure that the questionnaires really are looking for how psychologically flexible or inflexible a person is. The UUT is regarded as a way to look for creativity in a person (Kuhn, 2009). The SSCS looks at two constructs, creative self-efficacy, and creative personal identity. In our analysis we have therefore excluded the total score of the questionnaire and focused on the participants' scores for the creative self-efficacy scale and creative personal identity separately.

Conclusion

Enhancing creative self-efficacy seems to be especially important for creative minds. If creative self-efficacy is low, the creative person is likely to experience lower life satisfaction than less creative people. The suffering might come from, for example, using one's creativity to avoid unpleasant emotions and situations, rather than to find flexible solutions for how to deal with them. On the other hand, if creative self-efficacy is high, life satisfaction and psychological flexibility possibly increase the more creative you are.

Students at creative writing schools were highly creative and displayed high creative self-efficacy. They were just as satisfied with life as the comparison group and just as flexible. This despite previous research showing that Students of artistic subjects at university (in Sweden) are at increased risk of developing schizophrenia, bipolar disorder and unipolar depression in adulthood compared to other students (MacCabe et al, 2018). The creative writer's understanding of the effect the writing has on them appeared to be related to their creative identity. The more they identified themselves as creative, the more they consciously and actively used the writing to improve their mood, recover from stress and to increase satisfaction with life.

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Appendix

Appendix A

Writer survey

Nedan finner du tio påståenden du antingen kan instämna med om eller inte instämna med om. För varje påstående markerar du det alternativ som stämmer bäst överens med vad du tycker. Var så öppen och ärlig du kan i dina svar.

1. Mitt skrivande bidrar till att jag blir mer nöjd med livet
2. Mitt liv skulle vara lika bra även om jag slutade skriva
3. När jag skriver bearbetar jag negativa känslor så de slutar påverka mig så mycket
4. När jag skriver blir jag ibland helt uppfylld av känslor som jag har svårt att göra mig fri från
5. Jag blir ofta på bättre humör efter att jag har skrivit en stund
6. Mitt skrivande gör att jag känner att jag kan återfå lugnet inom mig
7. Att gå in i mig själv och bli absorberad i skrivprocessen är återhämtande för mig
8. Att bli helt uppslukad av mitt skrivande, kan ibland vara skrämmande
9. När jag upplever negativa känslor så kan jag använda mina upplevelser i mitt skrivande på ett konstruktivt vis
10. När jag upplever negativa känslor så blir jag för upptagen av dom, och har då svårt att skriva

Response categories:

- 1 - Instämmer inte alls
- 2 - Instämmer inte
- 3 - Varken instämmer eller inte
- 4 - Instämmer
- 5 - Instämmer helt