Developing a Self-guided Card Game for Exercising Character Strengths: The Box of Strengths

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Abstract

Objectives: This study aims to investigate how trying to use cards designed with using character strengths in a new way can enhance adults' happiness, improve positive experiences as well as reduce negative experiences. The sample was 30 Chinese adults randomly recruited online to undergo a week-long self-guide card game experience. Data were collected before and after the game experience to measure life satisfaction and positive and negative experiences. This study hopes to demonstrate that 1) trying new ways to use character strengths with self-guide cards can increase life satisfaction and 2) trying new ways to use character strengths with the self-guide card can increase positive experiences and decrease negative experiences. The conclusion would be that self-guided conscious practice of character strengths would help adults improve their life satisfaction.

Keywords: positive psychology, character strengths, self-guided, well-being

1. Introduction

Depression, anxiety and stress have long affected people's health to varying degrees. In recent years, the period of quarantine, fear of infection, lack of supply due to panic buying, lack of appropriate and accurate information due to increased media coverage, and financial losses due to industrial and commercial shutdowns have all directly and indirectly led to an increase in negative emotions (Brooks *et al.*, 2020).

Separation of loved ones, loss of freedom, uncertainty and boredom due to isolation, city closures, etc. can lead to anxiety, stress, depression and even suicide (Ahmed *et al.*, 2020). Researchers believe that the psychological stress associated with this level of the situation may have a long-term impact on a person's overall psychosocial health (Yzadi *et al.*, 2020). Another study focused on the general public living in mainland China during the COVID-19 epidemic, which showed that women suffered a greater psychological impact during the epidemic, including higher levels of anxiety, stress and depression (Wang *et al.*, 2020). Wang *et al.* (2020) also found that students suffered greater psychological effects from stress, anxiety, insomnia, depression and depression during the epidemic.

The quarantine and lockdown of many people in the context of the epidemic, left many people with less scope to move around and take fewer activities. However, this study still hopes to increase life satisfaction and positive experiences by exercising people's strengths of character through small games and activities that can be done regardless of the context of the epidemic.

1.1 Character Strengths

The Values in Action (VIA) classification of strengths was introduced by Peterson and Seligman (2004), and it has positive value attributes that are thought to contribute to living a "the good life". The VIA classification, which communicates the cross-cultural value components of excellent character as similar features and demonstrable positive individual differences, includes 24 character strengths. Personal behavior, ideas, and feelings represent character strengths. They are seen as internal predictors of contentment, pleasure, and success in life, in addition to external elements such as a good education, a secure social environment, or financial security (Peterson, 2006).

Although it is common in the literature to analyze only a person's top five character strengths (Rashid, 2004), Peterson and Seligman argue that people have three to seven signature character qualities that are their signature strengths (Seligman *et al.*, 2005). People, according to Seligman (2004), feel energised rather than weary after using signature strengths. A number of studies have found a link between the use of personal signature strengths

and a variety of beneficial results. For example, the application of personal signature strengths has been linked to positive life experiences including life satisfaction, pleasure, and meaning (Wood *et al.*, 2011). In the Wood et al. (2011) study, they consider that exploring all 24 character strengths would help children to enhance their self-identification and would also help student learners to recognise and appreciate that everyone has different strengths to build on. But arguing against choosing only a few strengths, it has also been demonstrated that all strengths are strongly related to factors of well-being (Wagner *et al.*, 2020). According to research, all strengths are positively connected with characteristics of well-being (Wagner *et al.*, 2020).

1.2 Positive Intervention: Character Strengths Exercise

Niemiec (2018) suggested that character was more changeable than originally thought. Character strengths are stable over time, but character strengths can be developed through conscious intervention. Research has found that using character strengths in new ways every day is an intervention that could improve well-being and reduce depression (Gander *et al.*, 2013), with some studies finding effects lasting up to 6 months (Seligman *et al.*, 2005).

Seligman et al. (2005) tested five assessments of a well-being intervention via the Internet on 411 participants using a randomly assigned, placebo-controlled design. The well-being intervention consisted of a 1-week exercise routine. The placebo control consisted of writing down early memories each night for a week. The two most effective exercises were 'Three good things in life', which asked participants to write down three good things that happened that day and why they happened, and 'Using signature strengths in new ways', in which participants took an online inventory of their character strengths, providing Feedback on the top five strengths as classified by Peterson and Seligman (2004). Participants were then asked to use one of these strengths in a new and different way each day for seven days. Both interventions increased well-being and reduced depressive symptoms over a period of six months.

Gander *et al.* (2015) conducted additional tests based on the Seligman intervention experiment. In a randomised, placebo-controlled trial, researchers compared the benefits of a signature-based intervention with the use of individuals with less strengths. A total of 375 people were randomly assigned to one of two intervention conditions [using five signatures in a new way with fiveless strengths] or to a placebo control condition (i.e. early memory). Well-being and depressive symptoms were measured at five-time points (i.e. pre-test and post-test, 1, 3 and 6 months follow-up), as well as pre-test character strengths. In this experiment, using a new way means that participants can apply strengths in new situations or when interacting with 'new' people (Gander *et al.*, 2015). How these strengths are applied depends on the participants themselves. At the same time, they prepared a list for participants who were unsure how to apply their strengths in their daily work, which included Haidt (2002) and Peterson (2006) as well as other strengths-based procedures (e.g. Proyer *et al.*, 2013). The study found short-term increases in well-being and decreases in depressive symptoms in both intervention conditions; participants found equal reward (enjoyment and benefit) advantages in both conditions; those who reported generally higher strength levels benefited more from learning lower rather than signature strengths, while those with relatively low strength levels tended to benefit more from signature strengths; and from completing the Strength-Based Values, the mean distribution bias for the large German-speaking sample of the Action Inventory was associated with greater benefits of the intervention in the signature strengths condition. The researchers conclude that developing strengths in character is effective in improving well-being and discuss how these interventions can be targeted to individuals to increase their effectiveness.

There is extensive evidence of the effectiveness of using character strengths in increasing well-being. In this experiment, the participants will be randomised to use 24 character strengths, and due to the time constraints of the experiment, this happiness and life satisfaction will be measured at two points in time, namely The pre-test and post-test. There will be opportunities in the future to measure at additional time points.

1.3 Character Strengths Exercise and Well-being

According to the experiment of Gender *et al.* (2013), the "Use Your Signature Strengths in New Ways" intervention had a positive impact on well-being, depression, and life satisfaction. Other important findings included a positive impact on flourishing and the use of strengths (Harzer, 2020). No effects on negative mood were found (Schutte & Malouff, 2019). An expanded study of "Use Your Signature Strengths in New Ways" found that the intervention showed the effectiveness and positive results on well-being for both top 5 and bottom 5 character strengths, concluding that developing character strengths is effective in increasing well-being and life satisfaction (Proyer *et al.*, 2015). Therefore, the rules of the game can be set up in such a way that the players can decide whether to choose only signature strengths for practice or to choose any randomly selected card for exercise.

In the preparation phase of the experiment we planned to use Chinese 'cards' and whether they would have a similar impact on adults in China. The cards were inspired by the Rainbow Cards, a set of self-motivational cards that are widely available in the marketplace. The card format helps to simplify this experiment because the card draw ensures that each character strength has the same probability of being used, the cards are portable and easy to use, and they can better help future customers develop the habit of exercising their character strengths. However, due to factors such as the epidemic, we eventually decided to turn the cards into an online mini-game, through the WeChat program, where a card can appear randomly by clicking on the interface, with each card having an equal probability of appearing, which would further save money on the experiment and simplify the process of use for participants. This experiment will also verify whether the product features are effective and whether practising personality strengths in different ways can improve users' happiness and life satisfaction.

In the design of the cards, the backs of the cards are designed in six colours to distinguish between six virtues, namely Wisdom, Courage, Transcendence, Humanity, Justice and Temperance. These strengths were distilled by Peterson and Seligman (2004) from over 200 positive traits and subdivided into 24 valuable and reliable character strengths from these six virtues. On the front of the card is an example of how to 'Use Each Character Strength in a New Way', for example Niemiec (2013) suggests thinking of one of your problems and two possible solutions to practise creativity. On this basis, three ideas have been devised for exercises on character strengths. Each character strength corresponds to three different forms of exercise, for example, curiosity corresponds to three cards. The first is to choose a bookshop at random, or in an online bookstore, and pick a book to read at random. The second is trying a foreign food or a part of another province's food. The third is exploring a new route or travelling to a new place, or making a new travel plan for yourself.

Figure 1. self-guided cards

1.4 The Current Study

In this study we test whether these cards would be beneficial to adults who used them in a 1-week, daily exercise of character strengths. Participants were encouraged to randomise their use of character strengths, whether or not they are their signature strengths, and participants took a pre- and post-test to test for changes in well-being and life satisfaction comparing before and after the character strengths intervention.

The main objective of this study is to test whether the intervention is effective in increasing well-being and life satisfaction.

Hypothesis 1: Randomly selected character strength self-guided cards for character strengths exercise could help to improve life satisfaction.

Hypothesis 2: Randomly selected character strength self-guided cards for character strengths exercise could help to increase positive emotional experiences and decrease negative emotional experiences.

2. Methods

2.1 Participants

Thirty adults (53.33% of whom were male) from Mainland China, who participated in and completed the Card Exercise Character Strengths intervention, completed the survey before and after the one-week intervention period. These data were collected on April 25, 2022 and May 3, 2022. Participants' ages ranged from 18 to 55 years (mean = 26.7, SD = 7.905). The data obtained in the pre and post-tests were collected anonymously, using a web-based scale, and participants were informed that their participation in the study was voluntary. The study

was approved by the EdU FEHD Research Ethics Committee.

2.2 Instruments

2.2.1 The Satisfaction With Life Scale (SWLS)

The SWLS (Diener *et al.*, 1985) consists of five items that measure an individual's overall evaluation of his or her satisfaction with his or her life. Respondents selected one of seven options (ranging from 1 = "strongly disagree" to 7 = "strongly agree"), and the sum of the responses will provide a total life satisfaction score.

2.2.2 The Scale of Positive and Negative Experience (SPANE)

The SPANE (Diener et al., 2010) consists of 12 items, 6 each of positive emotion items and negative emotion items. Participants rated the 6 items on a scale of 1 to 5 (1 = "Very Rarely or Never", 5 = "Very Often or Always") for assessing positive emotional experiences and negative emotional experiences. The sum of responses provided the SPANE-P (positive feeling score), which could range from 6 to 30, and the SPANE-N (negative feeling score), which could from 6 to 30. The SPANE-B (overall affective balance score) was calculated by subtracting the negative score from the positive score, and could range from -24 to 24.

2.3 Procedure

The study was advertised through online media by posting a participant recruitment on my personal page at Lofter, which is owned by NetEase, to recruit the first 30 eligible adults. Exclusion criteria were age less than 18 years. The measures and design of the study were mostly the same as those of Gander *et al.* (2015), but differed in two parts: first, the use of character strengths in terms of the range of not just five signature strengths and five lower strengths, but 24 character strengths. Second, instead of the researcher selecting the character strengths, which were then sent to the participants via email (Gander *et al.*, 2015). Instead, the character strengths to be practised were randomly constructed by the participants themselves through a click-through the mini program. Participants received a link to the card game, the pretest questionnaire and the following training instructions prior to the intervention.

"You can randomly draw a strength card, and each strength might be one of your future signature strengths. Each day for 1 week you can use the character strengths drawn on the back of the card in a new and different way. The front of the card has some text for you to refer to and it is up to you how you use these strengths. Try using these strengths, whether you feel you already use them regularly or not".

As the aim of this experiment was to focus more on the effectiveness of the card product function for the user, the 'early memory' exercise in the placebo control condition (Seligman et al., 2005) was not used, but rather a within-subjects design with a pre-test and post-test of the participants. Participants received emails after the intervention asking if they had completed the seven day intervention, participants who did not complete the intervention would not be post-tested, others would be reminded and complete the questionnaire.

2.4 Data Analysis

First, participant characteristics were described. For the quantitative variables, means and standard deviations were calculated. Secondly, a reliability analysis was conducted on the data from the pre-test and post-test. This was done on the basis of an internal consistency analysis using the Cronbach's alpha coefficients of the SPANE-P, SPANE-N, SPANE-B and SWLS in our sample. Finally, paired-samples t-tests were used to test whether there was a significant change in participants' life satisfaction and positive-negative experience status before and after the intervention. The analysis was conducted using the Statistical Package for the Social Sciences (SPSS) version 27.0.

3. Results

3.1 Descriptive Analysis

Analysis and Consistency Reliability

Table 1 shows the means, standard deviations, score ranges and Cronbach's for the SPANE scale and the SWLS scale in the pre-test and post-test.

Cronbach's alpha for the three SPANE subscales ranged from 0.679 to 0.927, with most of the data showing good overall internal consistency reliability. The Cronbach's alpha for the SPANE-N was below 0.7 in the post-test, with a low but still acceptable level of reliability. After excluding the "angry" indicator from Q11, the Cronbach's alpha for SPANE-N was 0.72. The experimenter believes that this may be related to the small sample size on the one hand, and the expression "angry" on the other. The Cronbach's alpha of the SWLS was 0.9 and 0.901 in the pre-test and post-test respectively, with reliability coefficients ranging from 0 to 1, the closer to 1 the

higher the reliability, so the results of this analysis have high reliability.

Table 1. Means, standard deviations, and internal consistency reliability coefficients for the SPANE and for the SWLS across pretest and protest

Variable	N	Minimum	Maximum	Alpha	Mean	SD
Pre-test						
SPANE-P	30	8	26	0.919	16.20	5.76
SPANE-N	30	6.00	26.00	0.801	14.733	4.70
SPANE-B	30	-18	19	0.927	1.47	10.03
SWLS	30	10.00	28.00	0.9	18.97	5.68
Post-test						
SPANE-P	30	10.00	26.00	0.88	17.57	4.94
SPANE-N	30	6.00	21.00	0.68	13.33	3.59
SPANE-B	30	-9	20	0.89	4.23	8.05
SWLS	30	12.00	29.00	0.90	20.97	5.08

The internal consistency of each dimension was assessed by calculating Cronbach's alpha. The results of the reliability analysis according to Table 1 show that the overall standardised reliability coefficient (Cronbach's coefficient) in the questionnaire is 0.927. The reliability coefficient takes values between 0 and 1, with the closer to 1 the higher the reliability, so the results of this analysis are relatively good in terms of reliability.

3.2 Effectiveness of the Intervention

The study used a paired samples t-test to determine the analysis of participants' life satisfaction and positive and negative experience scores before and after using randomly selected cards to exercise character strengths in a new way, and the results showed that the life satisfaction and achievement of the participants after the intervention and before the intervention showed differences at the 0.001 level of significance, and further comparison of their means revealed that Life satisfaction scale scores and SPANE-B scores were higher after the intervention than before the intervention. The absolute values of Cohen's D for SPANE-P, SPANE-B and SWLS before and after the intervention were 0.89, 0.91 and 1.62 respectively, all greater than 0.8, showing a large effective size. Compared to the other indicators, the absolute value of SPANE-N was 0.79, although lower than 0.8, was much greater than 0.5 and was considered to have a moderately. The details are shown in Table 2.

Table 2. Paired Sample t-test results

Pre-post paired	Mean	SD	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	t(29)	Sig. (2-tailed)	Cohen's D
SPANE-P	-1.37	1.54	.28	-1.94	-.79	-4.85	<.001	-.89
SPANE-N	1.40	1.77	.324	.74	2.06	4.324	<.001	.79
SPANE-B	-2.77	3.04	.55	-3.90	-1.63	-4.99	<.001	-.91
SWLS	-2.00	1.23	.22	-2.45	-1.54	-8.89	<.001	-1.62

4. Discussion

The goal of this study is to see if utilizing cards created to leverage character characteristics in a new way can increase adults' satisfaction, improve good experiences, and decrease negative experiences. In this experiment, the new approach we have chosen is mainly based on Niemec's (2012) extensions of some tips, which are about

how to use strengths in new way. For example, the three cards of love are written to express love with action, love with words and love with time. The experiments validate Proyer et al.'s (2015) findings that using character strengths in a new way can improve effectiveness and positive results on well-being for both top 5 and lesser 5 character strengths. Both the current study and Proyer et al.'s study validated that it is not just using the signature strengths in new ways that can enhance life satisfaction and positive experiences, but the current experiment expanded to exercise all of the character strengths in new ways compared to the previous study.

The findings revealed that the participants' life satisfaction and well-being after and before the intervention differed at the 0.001 level of significance, and a comparison of their means revealed that Life satisfaction scale scores and positive-emotion SPANE scores were higher after the intervention than before the intervention. The results show that practising using character strengths in a new way using self-guided cards for a week can improve life satisfaction, increase positive experiences and decrease negative experiences.

This experiment used an online game card randomly selected to help participants' character through self-direction as its strength. On one hand, it has strong feasibility in turning positive psychology theory into practice. In terms of research methods, it is also very easy to conduct supplementary experiments, for example, the cards can be adjusted in the backstage management system during the randomised grouping experiment to correspond to the division of participants into experimental groups such as either using their top 5 signature character strengths in new ways, or bottom 5, or exercising all character strengths in new ways. On the other hand, the experiment is relatively simple and allows for multiple comparisons to be made and it could have an experimenter effect. For example, in a subsequent study, participants' VIA test results would be investigated and information on participants' signature strengths would be obtained before the intervention. Without being informed of the test results, three control groups, one control group and two intervention groups could be randomised in the intervention. One of the intervention groups would only test the results of using the first five signature strengths in a new way, while the other would practice all 24 personality strengths and compare the significant levels of the two groups before and after the experiment, which prevents participants from knowing that they are exercising their signature strengths.

The study also has some limitations. Firstly, although 30 participants is close to the sample size of 34 needed for .80 power to detect change over time, the sample size was small and there were relatively few subjects as the participants were recruited online with certain requirements for the age of the participants. Even though the data was analysed for reliability in the experiment, a larger sample size would have made the data more credible.

Secondly, no qualitative analysis was conducted in this experiment. Two to three subjects mentioned that they felt more creative after the experiment. If the experiment were to be carried out in further depth afterwards, the experiment would test the participants on the VIA before and after the intervention and observe whether there was a change in their character strengths related to creativity and whether participants whose creativity itself was a signature strength had better results than other participants for this type of intervention which is about use character strengths in new ways.

Thirdly, due to the limitations of the experimental period, the experiments did not go into depth, such as all the comparisons between using all character strengths in a new way to using signature 5 and lower 5.

Fourthly, the study did not include a control condition. Since all the other studies have shown that the control group did not change much over time, it might be more ethical to include only an experimental group in the study.

The study may help adults to exercise some of their strengths in order to improve well-being and life satisfaction. This mini-game can be practised in a self-guided way, with no time or space constraints, making it more convenient. Whether it is self-potential development, an icebreaker in the workplace, or a tool for the community to help hidden youth, it can be used. One of the participants, despite being confined to her home due to the epidemic, made future travel plans for herself after drawing the curiosity card. She told me that she would search online for a map of the world, choose random locations with her eyes closed and then gather information about the place, including history, transport, hotels and other people's travel advice, which she put together and posted online and had many people give her like and comments. It makes her feel good that others like what she has to say, but more importantly, it makes her feel free, even though she can't leave home. Other participants shared a lot, including the fact that some art students have become more likely to gather inspiration by drawing cards. These sharing from the participants made me think that this form of exercise was very meaningful and really allowed them to tap into their own potential possibilities

In the future I would like to take the experiment further, firstly to investigate how different character strengths and 6 virtues differ significantly from each other in terms of the use of new ways to work on character strengths,

especially those related to creativity. Secondly to further compare exercising the top 5 signature strengths, bottom 5 strengths and other character strengths in new ways. Thirdly, to expand the experiment to special populations and minors to help more groups explore their possibilities while ensuring ethical guidelines are followed. Fourthly, software and apps for character strengths training currently exist, but there are not many. Some of them are more focused on training and learning, with insufficient games and interactive features. In this experiment, I was also inspired by the insights of many participants. For example, in the curiosity cards, one participant suggested taking random photos, zooming in 50 times, taking different patterns and giving them to others to guess, etc. Although their suggestions may not really be used to improve the cards, I think that in the future we can develop some character strengths communities where people with different traits can learn from each other how other people use these strengths.

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