Training Idea Evaluation

by

Shelby E. French

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

Master of Arts in Psychology

Middle Tennessee State University

August 2021

Thesis Committee:

Michael Hein, Ph.D., Chair

Roni Reiter-Palmon, Ph.D.

Aimee R Holt, Ph.D.

ACKNOWLEDGEMENTS

Wow this has been an incredibly quick two years. I cannot believe this came together so quick, but I know it could not have been done without Dr. Hein (my thesis advisor) and Dr. Holt and Dr. Reiter-Palmon (my committee Members) and Zach. You all were so quick to give incredibly valuable feedback. It was not just feedback to better this study alone, but better me as a researcher overall. I am so grateful for all of you. Zach thank you for letting me use a lot of your materials as a starting point for my thesis, you made the process more stress free and quicker for me. Dr. Hein your motivation and excitement about this research topic really helped to keep myself motivated and interested in the project. Dr. Reiter-Palmon, your expertise was so valuable, and it was a joy working with you (looking forward to meeting you in person at some point). Dr. Holt, it has been such a joy being your GA the past two years, and I cannot even describe how much you have helped me throughout my whole graduate school experience. I know you say I helped you a lot, but you did the same, if not more, for me. Thank you all so much for this amazing experience.

ABSTRACT

The present study was one of the first to attempt training the idea evaluation phase of the creative process. Working memory, divergent thinking, and openness to experience were hypothesized to interact with the ability to train participants on idea evaluation. Participants were split into three groups (control, instructions, training). All three groups received three tasks and were asked to choose the most effective solution to the problem from a list. The control group was asked to only rate solutions to the tasks and were given no instructions or training. The instructions group was given limited instructions on the meaning of quality and originality in creativity after the first task. The training group was given the same instructions with examples and feedback on their responses after the first task. A repeated measures 3 x 3 ANOVA revealed no significant differences between groups. The only significant covariate was working memory. Divergent thinking and openness were nonsignificant.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER I: INTRODUCTION

Creative Problem-Solving Process

The most developed definition of creativity is, "creativity requires the production of high quality, original, and elegant solutions to complex, novel, ill defined, or poorly structured problems (Mumford et al., 2018)." Mumford et al. (2018) also outlined a creative problem-solving process as shown in Figure 1.

Figure 1

Mumford and Colleagues' (2018) Creative Process Model

```
┌─────────────────────────┐
│ 1. Problem Definition    │◄──┐
└─────────────────────────┘   │
         │                     │
         ▼                     │
┌─────────────────────────┐   │
│ 2. Information Gathering │   │
└─────────────────────────┘   │
         │                     │
         ▼                     │
┌─────────────────────────┐   │
│ 3. Concept Selection     │◄──┐
└─────────────────────────┘   │
         │                     │
         ▼                     │
┌─────────────────────────┐   │
│ 4. Conceptual            │   │
│    Combination           │   │
└─────────────────────────┘   │
         │                     │
         ▼                     │
┌─────────────────────────┐   │
│ 5. Idea Generation       │   │
└─────────────────────────┘   │
         │                     │
         ▼                     │
┌─────────────────────────┐   │
│ 6. Idea Evaluation       │◄──┐
└─────────────────────────┘   │
         │                     │
         ▼                     │
┌─────────────────────────┐   │
│ 7. Implementation        │   │
│    Planning              │   │
└─────────────────────────┘   │
         │                     │
         ▼                     │
┌─────────────────────────┐   │
│ 8. Solution Monitoring   │───┘
└─────────────────────────┘
```
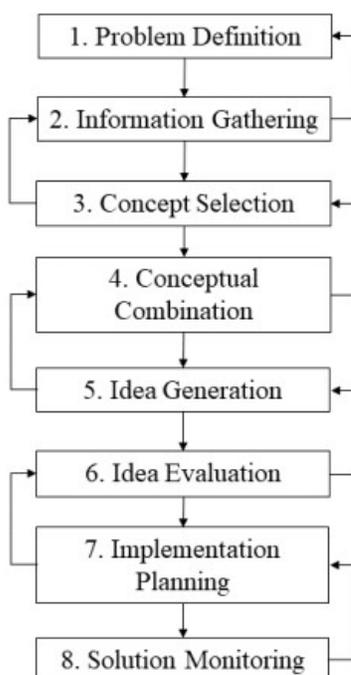
Mumford et al. (1991) hypothesized the creative process contained eight core processes, beginning with problem definition. Before solving a problem, there must be an

understanding of what the problem is (Mumford et al., 1991). Problem definition occurs automatically in more routine situations but requires active engagement when exposed to a novel problem (Reiter-Palmon, 2017). Creative people are more likely to engage in problem definition (Reiter-Palmon, 2017). The task/problem, however, may impact the relationship between problem definition and solution creativity (Arreola & Reiter-Palmon, 2016).

This process is necessary in order to know what information is relevant, what information should be pulled from long-term memory, and what new information to search for (Mumford et al., 1991; Reiter-Palmon, 2017). This search for information, or information gathering, is the second core process, and it can be an internal or external search (Mumford et al., 2018). From this gathering we determine what is relevant information, and if the information is theoretical, based on the situation, or information from previous experiences (Mumford et al., 2018). This process is known as concept selection which is the process of creating a comprehensible mental model of the situation at hand (Mumford et al., 2018).

After the gathering information and concept selection processes, the ideas need to be combined and reorganized in order to create new ideas and understandings from the information (Mumford et al., 1991). This is labeled as conceptual combination and is critical to the creative problem-solving process (Mumford et al., 2018). This is the key to generating new, novel ideas. Thus, conceptual combination leads to idea generation (Mumford et al., 2018). Idea generation is most frequently researched due to the common

use of divergent thinking tests (Mumford et al., 2018). This stage is defined not only by the number of ideas created, but the quality of those ideas (Mumford et al., 2018).

After ideas have been created they undergo idea evaluation, where they are assessed to determine which idea will be implemented or used (Mumford et al., 2018). The next process is implementation planning (Mumford et al., 2018). Without a useful and successful implementation plan, creative problem-solving will not occur. In other words, creatively solving a problem is not possible if the plan for applying it is unsuccessful. This stage takes the creative idea and creates a useful plan of action to execute the creative idea. In this stage ideas may be tested, and if they are unsuccessful a person may have to revert to an earlier stage. Finally, solution monitoring occur when we determine if the implementation stage was successful, or if a step needs to be revisited (Mumford et al., 2018). These eight processes, (a) problem definition (b) information gathering, (c) concept selection, (d) conceptual combination, (e) idea generation, (f) idea evaluation, (g) implementation planning, and (g) solution monitoring happen in order, and people may have to return to a previous step if there was an error, new information, additional problems, etc. (Mumford et al., 2018). Knowing what aspects of creativity to train will depend on which step in the creative process being focused on.

Individual Differences Potentially Influencing Creative Problem Solving

Individual differences are aspects of people relatively stable over time. When studying creativity, it is important to understand the impact these differences have. The creativity studies concerning individual differences mainly concern the idea generation

stage of the creative process. There is a lack of research observing the effects of individual differences on the idea evaluation phase. The individual differences discussed are divergent thinking, convergent thinking, working memory, and personality.

Divergent Thinking

Creativity has been measured and studied in many contexts using primarily divergent thinking tasks. Divergent thinking measures the idea generation stage of the creative process by identifying how many ideas a person can generate when presented with some event or problem (Reiter-Palmon et al., 2019). Divergent thinking has been found to be predictive of creativity when using realistic problems (Reiter-Palmon & Arreola, 2015). In this study, we will use realistic problems to implement a training targeting the idea evaluation phase of the creative process.

Divergent thinking can be measured along different dimensions, including fluency, flexibility, and originality (Reiter-Palmon et al., 2019). Fluency is the number of ideas a person creates, which is often measured as how many ideas are generated within a specific amount of time (Reiter-Palmon et al., 2019). Flexibility reflects the variety of ideas people come up with (Reiter-Palmon et al., 2019). Originality is the uniqueness and novelty of the ideas (Reiter-Palmon et al., 2019).

An issue when measuring divergent thinking is the problems are often inequivalent, so it can create problems when comparing data or studies (Reiter-Palmon et al., 2009). A study on domain-specificity found problems differed in complexity, problem-solving efficacy, and involvement (Reiter-Palmon et al., 2009). Regarding

problem-solving efficacy—confidence in one's ability to solve the problem—this study found when there was high-problem solving efficacy the number of solutions increased, but the number of original solutions decreased (Reiter-Palmon et al., 2009). When giving divergent thinking tasks, it may be necessary to specify giving creative solutions versus good solutions. Divergent thinking is one of the more favored methods of measuring creativity, but there is not a standardized way of delivering these measures. To address this issue, Reiter-Palmon and Forthmann (2019) created a systematic framework for delivering and scoring divergent thinking tests. This methodology will be used to score the divergent thinking measure used in this study.

Convergent Thinking

Divergent thinking is how many ideas a person can create, and how many different directions the ideas go (Marin et al., 2013). Convergent thinking is the process of deciding which solution is the "right" one or a solution considered to be useful (Marin et al., 2013). Convergent thinking typically leads to solutions we view as intelligence (Silvia, 2015). Meaning we go through the divergent thinking process by creating ideas or solutions which is what we see as creativity. Then, we use the convergent process to select an idea or solution. The chosen idea or solution is what we mark as intelligence. This is parallel to idea generation and idea evaluation. Divergent thinking is an effective way to evaluate a person's idea generation capability, and convergent thinking can be used to evaluate a person's idea evaluation capability.

Working Memory

There have been mixed results on the effects of working memory on creative problem-solving ability. Wiley and Jarosz (2012) concluded working memory capacity is helpful and unhelpful. Working memory capacity influences people's ability to focus; the higher your working memory capacity, the higher your attentional focus (Wiley & Jarosz, 2012). Having lower working memory capacity may aid in the connection of random (or different) ideas and solutions coming together to create a novel, more creative, idea (Wiley & Jarosz, 2012). Low working memory could also make it more challenging to complete or focus on a task (Wiley & Jarosz, 2012). High working memory will make it easier to focus on the task, but people with higher working memory capacity have been found to use more complex problem-solving strategies when there is a simpler way (Wiley & Jarosz, 2012). There may be certain problems where people with different levels of working memory capacity do better than others or create more novel solutions. Measuring working memory in this study will help identify potential differences in creative performance as well as possible differences in effectiveness of training.

Personality

Some studies have tried to understand which personality factors influence creative ability. Personality factors found to influence creative ability are openness to experience and agreeableness (Hunter & Cushenbery, 2014). Openness to experience is how accepting or comfortable people are with new ideas and experiences. Previous research has found the strongest effects and relationships with openness to experience when

studying creativity (Hunter & Cushenbery, 2014). Openness has been found to be positively related to the originality of ideas (Hunter & Cushenbery, 2014). Hunter and Cushenbery (2014) also found agreeableness influences originality of ideas in certain situations. Specifically, they found in situations where social norms do not support creative ideas high agreeableness increased creative ability. Additionally, it has been found that people high on disagreeableness (Hunter & Cushenbery, 2014) and openness to experience (Madrid et al., 2014) tend to be more creative and generate more novel ideas. In groups and work settings, whenever people are higher in disagreeableness, this benefits groups when there is a general acceptance for innovation and novel ideas (Hunter & Cushenbery, 2014). Openness to experience is more important in increasing innovative work behavior when people are highly invested in the task (Madrid et al., 2014). When studying creativity, it is important to measure and understand the effects personality may have on creative performance.

Other Factors that Influence Creativity

Instruction

When giving creativity tasks and measures, the way instructions for the measure are given can influence the outcomes. Acar et al., (2020) conducted a meta-analysis to compare the effects of different types of instructions on creativity measures. They compared instructions directing participants to list more creative solutions, more solutions (quantity), more original solutions, and higher quality solutions. They found instructions targeting creativity increased divergent thinking performance. Also,

divergent thinking was found to increase when instructions targeted quality and quantity. The authors state divergent thinking instructions should always include quantity because it is an essential element of ideation. Another interesting finding by Acar et al., (2020) is that instructions directing participants to give more original ideas decreased divergent thinking scores. They speculate this is because people may create several ideas but do not write them down because they feel their answers are not original.

Reiter-Palmon and Arreola (2015) compared whether asking participants to generate many solutions versus just one solution made a difference in the quality, fluency, and originality. They found creative problem solving had solutions more elaborative and higher in quality when asked to generate a single solution versus many. From these findings they concluded divergent thinking tasks should be used when there is a need for evaluation of fluency or identification of the most original solution out of many. When wanting to look at overall creativity, creative problem solving tasks should be used because it includes divergent and convergent thinking (Reiter-Palmon & Arreola, 2015).

Training

Researchers have used many methods to train creativity. They often focus on different processes of creativity. The process chosen to be trained, should be dependent on the overall goals of the training. If the goal, for example, is to have people generate more ideas, then the training should focus on the idea generation – divergent thinking – process.

Attention-broadening training has been proven to have a significant effect on inventing creative solutions with complex problems (Memmert, 2007). Memmert (2007) theorized this training worked because when there is a wider breadth of attention there is a greater chance of associating relevant stimuli with irrelevant stimuli which can aid in creating a novel solution or idea. This training, however, did not make a difference for simpler tasks.

Cunningham and MacGregor (2008) and Dow and Mayer (2004) looked at training of insight problem-solving. They both found significant results for training on spatial insight problem solving for unrealistic problems, but neither of them found evidence that training impacted verbal insight problems. Epstein et al., (2008) recommended training based on creativity competencies. They created a new measure to evaluate what creative competencies people have, and they speculate using competencies is less harmful due to labeling issues. In general, (Scott et al., 2004) found creativity training is typically effective through a meta-analysis of 70 studies. Overall, there is a lot of factors to consider when training creativity, and creativity training has shown to be effective.

Summary

Divergent thinking is one of the more favored methods of measuring creativity. This is because it applies to the development of novel ideas. However, convergent thinking is rarely used when measuring creativity, but it should be used because it helps identify a person's ability to select a useful solution for the presented problem. As a

result, research on creativity has primarily been on divergent thinking, which is only on step in the process; we are going to focus on the next step: idea evaluation and selection.

Not much research has been conducted on the idea evaluation and selection phase of the creative process. However, the research previously conducted has found people are able to identify ideas high in originality, but when asked to implement an idea they do not choose the idea highest in originality (Watts et al., 2019). Therefore, the training in this study was designed to address this problem. In the area of creativity research there is little to no research on the effects of training on idea evaluation and selection. This study aims to provide information in this area.

Hypotheses

H1: Openness to experience is positively related with the accuracy of ratings (problem scores).

H2: Working memory capacity is positively related with the accuracy of ratings (problem scores).

H3: Divergent thinking ability is positively related with the accuracy of ratings (problem scores).

H4: When identifying the most effective/creative solution, participants in the instructions condition will improve their selection after receiving instructions (will choose a more effective/creative solution)

H5: When identifying the most effective/creative solution, participants in the training condition will improve their selection after training (will choose a more effective/creative solution)

H6: Participants in the control group will not improve at identifying the quality and originality of solutions or choosing the most effective solution.

CHAPTER II: METHODS

Participants

Participants ($N = 105$) were recruited from Amazon Mechanical Turk (MTurk). These participants received a small monetary incentive for their participation. Participants had an average age of 37 with the minimum age being 18 and the maximum being 71. 66.7% of participants were White or Caucasian, 18.1% of participants were Asian, 4.8% of participants were African. 28.6% of participants identified as a woman and 62.9% identified as being a man.

Design

This study used a repeated-measures 3x3 within-between subject's design with covariates. The three between-subjects' variables were the conditions: (a) the control group; (b) instructions group; and (c) the training group. The within subjects' variables were the three problem scores they received. The covariates were (a) openness to experience, (b) working memory, and (c) divergent thinking.

Materials

Measures used in this study included the following: (a) the consequences A test, Christensen et al., 1958; (b) four working memory tasks (forward and backward block tasks, Corsi, 1972; digit span forward and backward tasks, Wechsler; 2008), and (c) the Big Five Inventory (BFI, John et al., 2008), and (d) the narcissism scale. In addition to these measures, participants were given two tasks they were required to read and rate

solutions to the tasks on quality and originality. Finally, participants were asked basic demographic questions about age, race, gender, and socioeconomic status.

The consequences A test (Christensen et al., 1958) was used to measure divergent thinking ability. This measure consists of five different scenarios. These scenarios ask what would happen if a certain scenario occurred. For example, "what would be the results if people no longer needed or wanted sleep?" Participants had 2 minutes to generate as many different solutions as possible to one scenario. The total measure takes 12 minutes to complete. This measure has been found to be a good measure of divergent thinking, and it allows researchers to observe more creative solutions than the Alternative Uses measure (Hass & Beaty, 2018).

Working memory was measured using forward and backward Corsi block tasks and digit span tasks (Corsi, 1972; Wechsler, 2008). These measures were delivered online via PysToolKit.org (Stoet, 2010; Stoet, 2017). The Corsi block tasks involved a set of blocks on the screen. These blocks begin to light up in a pattern. Participants are then asked to click the boxes in the same order they lit up in. The digit span task presented numbers on a screen one at a time, and participants are asked to type the numbers in the order they appeared. The backward forms of these tasks asked the participant to tap the block or type the numbers in reverse order.

The BFI (John et al., 2008)was used to measure participants' personalities. The BFI is based on the five-factor model, and it identifies levels of (a) openness to experience, (b) conscientiousness, (c) extraversion, (d) agreeableness, and (e)

neuroticism. This measure is on a five-point Likert scale and consists of short phrases based on adjectives that have been found to markers of the five personality factors (John et al., 2008). This measure was chosen because it takes only five minutes to administer, and it is not ambiguous like short single adjective item scales. The alpha reliabilities of the BFI average above .80, test-retest reliabilities average at .85, and convergent validity coefficients average at .55 (John et al., 2008). This measure was best to use for this study because it is short and easy for participants to understand.

The tasks and solutions potential were chosen from study 1 (Swetz, 2021). In study 1, participants were given the tasks (See Table 1) and asked to generate solutions (See Appendix 1) to the problems. A set of trained raters rated the solutions developed on originality and quality. The tasks with the highest interrater reliability were used in this study. The incarceration task had acceptable interrater reliability on quality ($p < .001$; $a = .88$) and on originality ($p < .001$; $a = 72$). The obesity task also had acceptable interrater reliability on quality ($p < .001$; $a = .84$) and on originality ($p < .001$; $a = .68$). Responses varying in originality and quality were chosen as options for participants to rate on quality and originality (See Appendix for responses chosen). Solutions for the obesity task ranged from 2 to 6.5 rating in originality and 3.5 to 6 rating in quality. Solutions for the incarceration task ranged from 1 to 6 rating in originality and 2.5 to 6 rating in quality.

Procedure

Part 1

Before participating in Part 1 of the study, participants were asked to read and agree to an informed consent document. Those who answered no to the consent questions were not included in the analyses. Participants that did not complete 50% of Part 1 were also removed from the analyses.

After consenting participants took four working memory tasks via PsyToolKit.org. These tasks included (a) digit span task (b) backward digit span task (c) corsi task (d) backward corsi task. Table 2 shows the average scores and standard deviations for these four tasks. Those participants who consented and completed more than 50% of the study were then invited back to take Part 2 of the study. When participants were invited back, they were randomly assigned to one of three groups.

Part 2

Before participating in Part 2 of the study, participants were asked to read and agree to an informed consent document. Those who answered no to any of the consent questions were sent to the end of the survey and did not participate. Participants were randomly selected to be in either the control, instructions, or training group. All three groups were given (a) the consequences A test, (b) the Big Five Inventory (BFI), (c) the Remote Association Test (RAT), (d) a narcissism scale at the beginning of the study.

Next, the control group was presented with Task 1 (please see Table 1 for task). For this task they were asked to rate five possible solutions on quality and originality, and

out of those five possible solutions they were asked to choose which solution they believed to be the most effective. They were then presented with Task 1 again, but with five more possible solutions in which they rated on quality and originality and chose the most effective. Finally, they were given Task 2 and asked to rate five possible solutions on quality and originality and choosing the solution they believe is most effective.

The instructions group was presented Task 1 the same way as the control group the first time, but after completing it they were given simple instructions that define quality and originality. Once reading through the instructions, they were given four test questions related to the instructions. They were given Task 1 again and Task 2 in the same way as the control group.

The training group was presented Task 1 the same way as the control and instructions groups the first time. After completing it they were then given detailed definitions and examples of originality and quality. Once reading through the information, they were shown their ratings compared to SME ratings along with the SMEs' reasoning behind their ratings. After reading through this material, they were given the same four test questions as the instructions group. Finally, they were given Task 1 again and Task 2 in the same way as the control and instructions groups.

Once each group completed the tasks, all participants were asked general demographic questions about age, gender, and socioeconomic status. Please see Appendix for full survey.

Table 1

Tasks

Incarceration Task

Incarcerating mentally ill people in your county costs millions of dollars per year and does not improve their situation. Approximately 10,000 times each year in your county, adults who have serious mental illnesses are booked into jails. 7,500 of these adults also have drug and alcohol use problems. In comparison with inmates without mental illnesses, imprisoned individuals with mental illnesses tend to have longer jail stays and are at a higher risk of returning to jail upon release. The human toll of this problem—and its cost to taxpayers—is staggering. Jails spend 2 to 3 times more on adults requiring intervention because of their mental illness than those without a mental illness, yet improvements in public safety, health or quality of life are rarely observed. New research on people with mental illnesses in the justice system shows that it is caused by multiple problems. These include:

- Untreated mental illness
- Drug and alcohol use disorders
- Criminal risk factors
- Homelessness

The lack of stability in their lives causes them to cycle repeatedly through jail, hospitals, shelters, and crisis centers. These have a considerable cost to the community, but the community's current investment has not helped the hurt individuals' health and well-being. **Without change, large numbers of people who are homeless and mentally ill will continue to cycle through the criminal justice and healthcare systems**. **The citizens of your county are relying on you to provide a new solution.**

Obesity Task

Youth obesity is a growing issue in your county. Approximately 38% of the children living in your county are obese, which is much higher than the national average. Childhood obesity is a severe health concern as it causes many other health problems, including:

- High blood pressure
- High cholesterol
- Cardiovascular disease
- Type 2 diabetes
- Breathing problems
- Fatty liver disease
- Anxiety and depression
- Poor quality of life
- Adulthood obesity
- Cancer

Additional information about your county shows:

- County population is 300,000 people total and 100,000 children
- There are 60 grocery stores and 220 fast food restaurants
- 90,000 people have difficulty accessing or affording food
- 30,000 children live in poverty
- There is access to many public parks, but they are not used frequently
- The percent of people receiving food stamps in your county is double the national average

Without your help, the youth obesity rates in the county are projected to grow even larger. The citizens of your county are relying on you to provide a new solution.

CHAPTER III: RESULTS

Data were cleaned using Microsoft Excel and analyzed using SPSS. Participants suspected of being a bot and/or not completing the working memory measures were not invited for Part 2 of the study and were removed from the data set. Analyses were run on the remaining sample ($N = 105$). The average age of participants was 36.83 with the minimum age being 18 and the maximum age being 71. Descriptive statistics for age and the measures used are presented in Table 2.

Problem scores were calculated by assigning point values to each possible solution for the tasks. Solutions were given a score of 0-4 based on creativity ratings of SMEs. The consequences were scored by counting the number of complete and sensical ideas and adding them up across all five consequences tasks. The one-item narcissism scale was on a Likert scale of 1 (*not very true of me*) to 7 (*very true of me*), and the openness to experience scale was on a Likert scale of 1 (*disagree strongly*) to 5(*agree strongly*). The four working memory tasks (digit span, backward digit span, corsi, and backward corsi) were scored by taking the highest span task completed. Test score was given to the instructions and training groups for completing the four test questions after receiving either instructions or training. They received one point per correct question, so the maximum score possible is a four.

Table 2

Descriptive Statistics

	Mean	Standard Deviation
Age	36.83	9.63
Digit Span	6.61	2.10
Backward Digit Span	5.50	1.99
Corsi	4.42	2.65
Backward Corsi	3.40	2.53
Consequences	10.70	11.14
Openness to Experience	3.75	0.56
Narcissism	3.88	2.03
Test Score	2.74	1.39
Problem 1 Score	2.58	1.32
Problem 2 Score	2.75	1.54
Problem 3 Score	2.67	1.33

Correlations were run to identify the relationships between measures. Test score was significantly negatively correlated with narcissism and was significantly positively correlated with the four working memory measures and problem 3 score. Narcissism was significantly negatively correlated with the backward corsi, the digit span, the consequences, and problem 3 score. Interestingly, problem 3 score was also significantly correlated with the backward corsi and the consequences, but problem 1 score was not significantly correlated with anything. Problem 2 had a weak significant correlation with the corsi, but was not significantly correlated with any other variable. Age was only significantly correlated with the backward digit span task. The consequences measure was not correlated with openness to experience. Openness to experience was not correlated with any measure. Please see Table 3 for full correlation matrix.

Table 3
Pearson Correlation Coefficients

	Test Score	Narcissism	Openness to Experience	Backward Corsi	Coris	Backward Digit Span	Digit Span	Conseq uences	Problem 1 Score	Problem 2 Score	Problem 3 Score
Test Score	---										
Narcissism	-67**	---									
Openness to Experience	-06	-02	---								
Backward Corsi	.53**	-42**	-10	---							
Corsi	.28*	-17	-12	.51**	---						
Backward Digit Span	.23*	-11	-004	.21**	-01	---					
Digit Span	.35**	-30**	-05	.23*	.12	.44**	---				
Consequences	.77**	-71**	-03	.50**	.35**	.30**	.38**	---			
Problem 1 Score	-09	-06	.03	.08	-10	.09	.02	.004	---		
Problem 2 Score	.12	-10	-03	.05	.21*	-12	.01	.08	.15	---	
Problem 3 Score	.28*	-24*	.03	.35**	.10	.03	.01	.29**	-01	.06	---
Age	.05	-10	.01	.03	.04	.26**	.14	.13	.02	.06	-19

* Correlation is significant at the 0.05 level
** Correlation is significant at the 0.01 level

Descriptive Statistics for the performance on the problems for each condition are shown in Table 4. A two-way repeated measures ANOVA with group (control, instructions, experimental) as a between-subjects factor and problem (problem 1, problem 2, problem 3) as a within-subjects factor was used to predict the performance of choosing the most creative solution. A familywise alpha of .05 was used. The interaction between age and time was not significant, Wilk's $F(4, 188) = 0.27$, $p = .895$, $n^2_p = .006$. Score did not vary by problem, Wilk's $F = (2, 94) = 0.84$, $p = .436$, $n^2_p = 018$. Sidak pairwise comparisons are shown in Table 5. There was not a significant effect for group, $F(2, 95) = 0.77$, MSE $= 2.25$, $p = .466$, $n^2_p = .016$. Tukey pairwise comparisons are shown in Table 6.

Table 4
ANOVA Descriptive Statistics

Experiment Group	Time	Mean	95% Confidence Intervals	
			Lower Bound	Upper Bound
Control	Problem 1	2.50	2.022	2.978
(n = 30)	Problem 2	2.77	2.215	3.318
	Problem 3	2.47	1.982	2.951
Instructions	Problem 1	2.77	2.350	3.189
(n = 39)	Problem 2	2.79	2.311	3.278
	Problem 3	2.85	2.421	3.271
Training	Problem 1	2.41	1.927	2.900
(n = 29)	Problem 2	2.83	2.267	3.388
	Problem 3	2.52	2.024	3.010

Table 5
Sidak Pairwise Comparisons for Problem Scores

(I)	(J)	Mean Difference (I-J)	95% Confidence Interval	
			Lower Bound	Upper Bound
Problem 1	Problem 2	-0.23	-0.74	0.29
Problem 1	Problem 3	-0.01	-0.56	0.54
Problem 2	Problem 3	0.22	-0.30	0.73

Table 6

Sidak Pairwise Comparisons for Problem Scores by Group

			95% Confidence Interval	
(I)	(J)	Mean Difference (I-J)	Lower Bound	Upper Bound
Control	Instructions	-0.23	-0.73	0.27
Control	Training	-0.01	-0.55	0.53
Instructions	Training	0.22	-0.29	0.72

The consequences, backward corsi, and openness to experience were evaluated as covariates. The consequences had the strongest significance when it was the only covariate $F(1, 82) = 3.35$, $MSE = 2.30$, $p = .071$, $n^2_p = .04$. The backward corsi was a significant covariate when it was analyzed as the only covariate $F(1, 94) = 6.22$, $MSE = 2.13$, $p = .014$, $n^2_p = .06$. Openness to experience was not a significant covariate $F(1,92) = .002$, $MSE = 2.27$, $p = .968$, $n^2_p = .000$.

CHAPTER IV: DISCUSSION

Discussion

This study aimed to evaluate training idea evaluation in the creative process and the effects of openness to experience, working memory, and divergent thinking ability. Little to no research has been conducted to try and understand the ability to train idea evaluation. Majority of research focuses on divergent thinking and training people to create more creative ideas. Overall hypothesis 2 was supported, and the remaining hypotheses were not.

Hypotheses 1-3

Openness to experience was not a significant covariate, therefore hypothesis one is not supported. Openness to experience was also not correlated with any of the other measures used in this study. Working memory was evaluated using the Backward Corsi only. The digit span and Corsi tasks evaluate a person's short-term memory, not their working memory because they are not required to manipulate the information. The Backward Digit span, although a representation of working memory, was correlated with age, so only the Backward Corsi was used in the main analysis. Working memory was a significant covariate, so hypothesis two is supported. Finally, divergent thinking was evaluated using the Consequences measure, and it was found to be a nonsignificant covariate, but could potentially be significant had there been more participants in the study.

Hypotheses 4-6

After analyzing the group differences the factorial ANOVA, hypotheses four, five, and six were not supported. There were no significant group differences found between the control, instructions, or training group when analyzing the three problem scores. The instructions group, although not significant, did perform better after receiving instructions. The instructions group also performed better than the training group, however, the instructions group had 10 more participants than the training group. The training and control group performed almost equally on all three tasks. Hypothesis is partially supported because the control group did not improve, but there was still no statistical difference between the groups. A possible explanation for the poor performance of the training group, is the training focused too much on defining and improving quality and originality ratings and did not focus enough on using those ratings and information to choose the most effective solution. It is also unknown if participants were previously familiar with the problems or previous solutions aimed at solving these problems. Without previous knowledge of past attempted solutions, participants have no frame of references to rate originality on solutions. For example, if a participant is a social worker and have previously been involved in an attempt to solve a problem similar to the problems in the tasks, they would have a better idea of what a creative original solution would be versus a participant who is still in college and never been exposed to these types of problems.

Limitations

There are multiple limitations to consider while evaluating this research. One limitation being the low sample size per group. The instructions group performed better than the training, but it is unclear if that is due to the training/instructions or the different sample sizes ($N = 39$ for instructions; $N = 29$ for training). Another limitation is using an online format for the working memory tasks. These tasks were not initially designed to be online. The Corsi tasks are most similar to the original format, but the Digit Span tasks are initially spoken aloud by the examiner and repeated back to them by the participant. We are unable to know for sure if participants were honest while taking the measure or if it being nonverbal impacted the measure.

Additionally, previous creativity research has found the importance of using appropriate heuristics when evaluating originality and quality (Scott et al., 2005). Scott et al. (2005) found heuristics using an analogical approach (combining ideas through mapping) improved quality and originality ratings when large amounts of prior information was presented for their task. They also found heuristics using a case-based approach (combining ideas through integrating events) improved quality and originality evaluation when less prior information was given before the task (Scott et al. 2005). Given their findings, it provides some possible explanation for why the training in this study did not work. Participants in this study may or may not have been experts or even have a frame of reference for evaluating the scenarios in the given tasks. Future studies should provide prior information about past solutions to the tasks that have been

attempted and they should use participants in a field relevant to the tasks such as social workers.

Future Directions

Future research should evaluate the effects of narcissism on creativity or more specifically idea generation and idea evaluation. Narcissism had a significant negative relationship with the Backward Corsi, Digit Span, the Consequences, and test scores. It would be interesting to identify if those higher in narcissism have lower working memory and lower divergent thinking.

Additionally, future research should have more SMEs (e.g., social workers) create creative solutions to the presented tasks, and have SMEs rate those solutions. This study did use trained raters to evaluate quality and originality, but there is a chance the results would be different when evaluated by someone actively in a relevant field to the problem. Participants should also be sampled from a pool of participants who are likely to encounter the given problems. This is because it will give participants a frame of reference, so they can better identify original solutions. Also, using problems related a larger variety of areas (for example, fictitious problems versus real-world problems) may help to identify if training is more effective when the scenario is fictitious. This could really help to understand what prevents people from selecting the more creative solutions.

Conclusion

The present study was one of the first studies to attempt training idea evaluation within the creative process. There was no support for majority of the hypotheses.

However, working memory was a significant covariate within the analysis, so the effects of working memory on creativity should be further explored. Using a larger sample size with a sample of participants that might encounter the problems in their day-to-day may show more significant results. It is also possible the training needs to be more focused on how to choose the most effective solution, not solely definitions of quality and originality.

REFERENCES

Acar, S., Runco, M. A., & Park, H. (2020). What should people be told when they take a divergent thinking test? A meta-analytic review of explicit instructions for divergent thinking. *Psychology of Aesthetics, Creativity, and the Arts*, *14*(1), 39–49. https://doi.org/10.1037/aca0000256

Corsi, P. M. (1972). Human memory and the medial temporal region of the brain. In *McGill University*. McGill University.

Hass, R. W., & Beaty, R. E. (2018). Use or consequences: Probing the cognitive difference between two measures of divergent thinking. *Frontiers in Psychology*, *9*, 1–15. https://doi.org/10.3389/fpsyg.2018.02327

Hunter, S. T., & Cushenbery, L. (2014). Is being a jerk necessary for originality? Examining the role of disagreeableness in the sharing and utilization of original ideas. *Journal of Business and Psychology*, *30*(4), 621–639. https://doi.org/161.45.205.103

John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative big five trait taxonomy: History, measurement, and conceptual issues. In *Handbook of personality: Theory and research* (pp. 114–158). https://doi.org/10.1016/S0191-8869(97)81000-8

Marin, A., Reimann, M., & Castaño, R. (2013). Metaphors and creativity: Direct, moderating, and mediating effects. *Journal of Consumer Psychology*, *24*(2), 290–297. https://doi.org/10.1016/j.jcps.2013.11.001

Memmert, D. (2007). Can creativity be improved by an attention-broadening training program? An exploratory study focusing on team sports. *Creativity Research Journal*, *19*(2–3), 281–291. https://doi.org/10.1080/10400410701397420

Mumford, M. D., Mobley, M. I., Reiter-Palmon, R., Uhlman, C. E., & Doares, L. M. (1991). Process analytic models of creative capacities. *Creativity Research Journal*, *4*(2), 91–122. https://doi.org/10.1080/10400419109534380

Mumford, M. D., Todd, E. M., Higgs, C., & Elliott, S. (2018). The skills needed to think creatively: Within-process and cross-process skills. In *Individual Creativity in the Workplace* (pp. 129–152). Elsevier. https://doi.org/10.1016/B978-0-12-813238-8.00006-1

Reiter-Palmon, R. (2017). The role of problem construction in creative production. *Journal of Creative Behavior*, *51*(4), 323–326. https://doi.org/10.1002/jocb.202

Reiter-Palmon, R., & Arreola, N. J. (2015). Does generating multiple ideas lead to increased creativity? A comparison of generating one idea vs. many. *Creativity Research Journal*, *27*(4), 369–374. https://doi.org/10.1080/10400419.2015.1087274

Reiter-Palmon, R., Forthmann, B., & Barbot, B. (2019). Scoring divergent thinking tests: A review and systematic framework. *Psychology of Aesthetics, Creativity, and the Arts*, *13*(2), 144–152. https://doi.org/10.1037/aca0000227

Reiter-Palmon, R., Illies, M. Y., Kobe Cross, L., Buboltz, C. B., & Nimps, T. (2009). Creativity and domain specificity: The effect of task type on multiple indexes of creative problem-solving. *Psychology of Aesthetics, Creativity, and the Arts*, *3*(2),

73–80. https://doi.org/10.1037/a0013410

Scott, G., Leritz, L. E., & Mumford, M. D. (2004). The effectiveness of creativity training: A quantitative review. *Creativity Research Journal*, *16*(4), 361–388. https://doi.org/10.1080/10400410409534549

Scott, G. M., Lonergan, D. C., & Mumford M. D. (2005). Conceptual compbination: Alternative knowledge structures, alternative heuristics. *Creativity Research Journal*, *17*(1), 79-98.

Silvia, P. J. (2015). Intelligence and creativity are pretty similar after all. *Educational Psychology Review*, *27*(4), 599–606. https://doi.org/10.1007/s10648-015-9299-1

Stoet, G. (2010). PsyToolKit - A software package for programming psychological experiments using Linux. *Behavior Research Methods, 42*(4), 1096-1104. doi:10.3758/BRM.42.4.1096

Stoet, G. (2017). PsyToolKit: A novel web-based method for running online questionnaires and reaction-time experiments. *Teaching of Psychology, 44*(1), 24-31. https://doi.org/10.1177/0098628316677643

Swetz, Z. T. (2021). *Breadth of the wild: The relationship between diverse experiences, analogy usage, and creative performance* (Publication No. 28494095) [Master's thesis, Middle Tennessee State University].ProQuest Dissertations and Theses Global.

Watts, L. L., Steele, L. M., Medeiros, K. E., & Mumford, M. D. (2019). Minding the gap

between generation and implementation: Effects of idea source, goals, and climate

on selecting and refining creative ideas. *Psychology of Aesthetics, Creativity, and

the Arts, 13*(1), 2-14. http://dx.doi.org/10.1037/aca0000157

Wiley, J., & Jarosz, A. F. (2012). Working memory capacity, attentional focus, and

problem solving. *Current Directions in Psychological Science*, *21*(4), 258–262.

https://doi.org/10.1177/0963721412447622

APPENDIX

ReCAPTCHA

Before you proceed to the survey,
please fill out this captcha below.

[ ] I'm not a robot

reCAPTCHA
Privacy - Terms
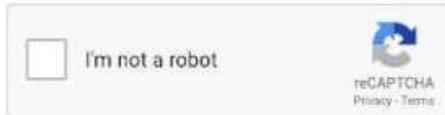
Informed Consent

Informed Consent

The following information is provided to inform you about the research project in which you have been invited to participate. Please read this disclosure and feel free to ask any questions. The investigators must answer all of your questions and please save this page as a PDF for future reference.

- Your participation in this research study is voluntary.
- You are also free to withdraw from this study at any time without loss of any benefits.

For additional information on your rights as a participant in this study, please contact the Middle Tennessee State University (MTSU) Office of Compliance (Tel 615-494-8918 or send your emails to irb_information@mtsu.edu. (URL: http://www.mtsu.edu/irb).

Please read the following and respond to the consent questions in the bottom if you wish to enroll in this study.

1. **Purpose**: This research project is designed to help us evaluate the impact of individual differences on creativity training.
2. **Description**: There are several parts to this project. They are:
   - Part 1: The working memory measure; if provided good data, participants will be invited to take part 2.
   - Part 2: peraonlity test, remote association test, consequences test, tasks, demographics.
   - This consent script only covers surveys conducted online.
   - You will NOT be audio recorded or videotaped in this study

3. **IRB Approval Details**

- Protocol Title: Training Idea Evaluation
- Primary Investigator: Shelby French
- PI Department & College: Psychology Department; College of Behavior and Health Sciences
- Faculty Advisor (if PI is a student): Dr. Michael Hein
- Protocol ID: 21-2206 7v   Approval Date: 6/15/2021   Expiration Date: 9/15/2021

4. **Duration**: The whole activity should take about 1 hour. The subjects must take at least 30 minutes to complete the study.

5. **Here are your rights as a participant: (MANDATORY)**

- Your participation in this research is voluntary.
- You may skip any item that you do not want to answer, and you may stop the experiment at any time (but see the note below).
- If you leave an item blank by either not clicking or entering a response, you may be warned that you missed one, just in case it was an accident. But you can continue the study without entering a response if you did not want to answer any questions.
- Some items may require a response to accurately present the survey.

6. **Risks & Discomforts**: None more than encountered in day-to-day life.

7. **Benefits:**
   a. Benefits to you that you may not receive outside this research: There are no direct benefits to you from this study.
   b. Benefits to the field of science or the community: More information on the individual differences that impact creativity training.

8. **Identifiable Information**: You will NOT be asked to provide identifiable personal information/You may provide contact information for follow-up / We may request your contact information for compensation purposes

9. **Compensation:** The participants will be compensated as described below: Participants will receive $3 for compelteing study 1 and $5 for completing study 2.

- *Compensation Requirements:*

a. *The qualifications to participate in this research are: Must be at least 18 years old and live in the United States. If you do not meet these qualifications, you will not be included in the research and you will not be compensated.*

b. *After you complete this consent form you will answer screening questions. If you fail to qualify for the research based on these questions, the research will end and you will not be compensated.*

c. *Please do not participate in this research more than once. Multiple attempts to participate will not be compensated.*

d. *Attention checks are embedded in the research. If you fail 50% or more of these, then you will not be compensated.*

e. *To be compensated, you must receive a completion code. That requires clicking on the final screen of the study. If you choose to stop for any reason, you will still need to click through until the end to receive compensation (just leave the items blank and click through until the end <; if items require a response to present the survey accurately, you will need to respond to those items as your progress to the end of the survey)>.*

f. *Based on the cash value of the compensation (more than $75 per iteration), you will be asked for tax details for accounting purposes.*

10. **Confidentiality.** All efforts, within reason, will be made to keep your personal information private but total privacy cannot be promised. Your information may be shared with MTSU or the government, such as the Middle Tennessee State University Institutional Review Board, Federal Government Office for Human Research Protections, *if* you or someone else is in danger or if we are required to do so by law.

11. **Contact Information.** If you should have any questions about this research study or possibly injury, please feel free to contact Shelby French by telephone 210-935-9848 or by email sef4n@mtmail.mtsu.edu OR my faculty advisor, Dr. Michael Hein, at Michael.hein@mtsu.edu. You can also contact the MTSU Office of compliance via telephone (615 494 8918) or by email (compliance@mtsu.edu). This contact information will be presented again at the end of the experiment.

You are not required to do anything further if you decide not to enroll in this study. Just quit your browser. Please complete the response section below if you wish to learn more or you wish to part take in this study.

I have read this informed consent document pertaining to the above identified research.

○ No
○ Yes

The research procedures to be conducted are clear to me.

○ No
○ Yes

I confirm that I am 18 years or older.

○ No
○ Yes

I am aware of the potential risks of the study.

○ No
○ Yes

By clicking below, I affirm that I freely and voluntarily choose to participate in this study. I understand I can withdraw from this study at any time without facing any consequences.

○ NO I do not consent
○ Yes I consent

Qualifiers

List your age.

[   ]

Choose the country you currently live in.

[⌄]

List your MTurk ID.

[   ]

Thank you for taking part in my survey. I truly appreciate your participation! When you are ready to begin, click the arrow to start.

BFI

You will now be asked to complete a personality measure, a divergent thinking measure, a convergent thinking measure, and a narcissism scale.

How I am in general

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others?* Please select the bubble next to each statement to indicate the extent to which **you agree or disagree with that statement.**

I am someone who ...

	Disagree Strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly
Is talkative	O	O	O	O	O
Tends to find fault with others	O	O	O	O	O
Does a thorough job	O	O	O	O	O
Is depressed, blue	O	O	O	O	O
Is original, comes up with new ideas	O	O	O	O	O
Is reserved	O	O	O	O	O
Is helpful and unselfish with others	O	O	O	O	O
Can be somewhat careless	O	O	O	O	O

	Disagree Strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly
Is relaxed, handles stress well	O	O	O	O	O
Is curious about many different things	O	O	O	O	O
Is full of energy	O	O	O	O	O
Starts quarrels with others	O	O	O	O	O
Is a reliable worker	O	O	O	O	O
Can be tense	O	O	O	O	O
Is ingenious, a deep thinker	O	O	O	O	O
Generates a lot of enthusiasm	O	O	O	O	O

	Disagree Strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly
Has a forgiving nature	O	O	O	O	O
Tends to be disorganized	O	O	O	O	O
Worries a lot	O	O	O	O	O
Has an active imagination	O	O	O	O	O
Tends to be quiet	O	O	O	O	O
Is generally trusting	O	O	O	O	O
Tends to be lazy	O	O	O	O	O
Is emotionally stable, not easily upset	O	O	O	O	O

	Disagree Strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly
Is inventive	O	O	O	O	O
Has an assertive personality	O	O	O	O	O
Can be cold and aloof	O	O	O	O	O
Perserveres until the task is finished	O	O	O	O	O
Can be moody	O	O	O	O	O
Values artistic, aesthetic experiences	O	O	O	O	O
Is sometimes shy, inhibited	O	O	O	O	O
Is considerate and kind to almost everyone	O	O	O	O	O

	Disagree Strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly
Does things efficiently	O	O	O	O	O
Remains calm in tense situations	O	O	O	O	O
Prefers work that is routine	O	O	O	O	O
Is outgoing, sociable	O	O	O	O	O
Is sometimes rude to others	O	O	O	O	O
Makes plans and follows through with them	O	O	O	O	O
Gets nervous easily	O	O	O	O	O
Likes to reflect, play with ideas	O	O	O	O	O

	Disagree Strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly
Has few artistic interests	O	O	O	O	O
Likes to cooperate with others	O	O	O	O	O
Is easily distracted	O	O	O	O	O
Is sophisticated in art, music, or literature	O	O	O	O	O

Consequences A Test

This is a test of your ability to think of a large number of ideas in connection with a new and unusual situation.

Look at a sample item.

SAMPLE ITEM:

What would be the results if people no longer needed or wanted sleep?

SAMPLE RESULTS:

1. Get more work done
2. Alarm clocks not necessary
3. No need for lullaby song books

4. <u>Sleeping pills no longer used</u>

5. _____

6. _____

Of course, there are many more possible results that could have been written.

There will be 5 different situations somewhat like the one above, each one on a separate page. Four examples will be included for each item. You will be given <u>two</u> minutes on each page to write down <u>other</u> possible results of the change as you can. Your answers need not be complete sentences. Your score will be the total number of <u>different</u> consequences that you write in the time given.

I. LIST AS MANY DIFFERENT CONSEQUENCES AS YOU CAN.

What would be the results if none of us needed food any more in order to live?

    a. No need for farmers

    b. No plates, knives, and forks

    c. No grocers

    d. Save time

II. LIST AS MANY DIFFERENT CONSEQUENCES AS YOU CAN.

What would be the results if humans lost their group feeling to the extent that they all preferred to live alone?

    a. No more marriages

    b. Population decline

    c. More hermits

    d. No more cities

[blank box]

III. LIST AS MANY DIFFERENT CONSEQUENCES AS YOU CAN.

What would be the results if the entire United States west of the Mississippi became an arid desert?

- a. Shortage of water
- b. People would move east
- c. Food shortage
- d. Trees would die

[blank box]

IV. LIST AS MANY DIFFERENT CONSEQUENCES AS YOU CAN.

What would be the results if everyone suddenly lost the sense of balance and were unable to stay in the upright position for more than a moment?

- a. People would fall down
- b. Could not walk
- c. Many accidents
- d. Confusion

[blank box]

V. LIST AS MANY DIFFERENT CONSEQUENCES AS YOU CAN.

What would be the results if all the people in the world lost the ability to reproduce offspring?

    a. Race would die out

    b. No more babies

    c. No more baby doctors

    d. No more diapers, toys, etc.

Remote Association Test

Each question presents three cue words that are linked by a fourth word, please type in the box which fourth word you think connects the three cue words.

Loser/Throat/Spot

Cottage/Swiss/Cake

Opera/Hand/Dish

Light/Birthday/Stick

Wise/Work/Tower

Fork/Dark/Man

River/Note/Account

Cracker/Fly/Fighter

Fountain/Baking/Pop

Flake/Mobile/Cone

Pie/Luck/Belly

Sense/Courtesy/Place

Right/Cat/Carbon

Measure/Worm/Video

Aid/Rubber/Wagon

High/District/House

Age/Mile/Sand

Illness/Bus/Computer

Chamber/Mask/Natural

Fence/Car/Master

Fish/Mine/Rush

Fox/Man/Peep

Office/Mail/Hat

Trip/House/Goal

Cross/Rain/Tie

Narcissism

To what extent do you agree with this statement: I am a narcissist. (Note: The word 'narcissist' means egotistical, self-focused, and vain).

Not very true of me					Very true of me	
1	2	3	4	5	6	7

Next, you will be asked to read a scenario and rate possible solutions on quality and originality.

READ THE FOLLOWING INFORMATION CAREFULLY.

You are acting as a member of a committee for your county's government. Your task is to generate solutions to address the problems your county is having. Your boss desires solutions that are creative and able to be implemented.

Incarcerating mentally ill people in your county costs millions of dollars per year and does not improve their situation.

Background:
Approximately 10,000 times each year in your county, adults who have serious mental illnesses are booked into jails. 7,500 of these adults also have drug and alcohol use problems. In comparison with inmates without mental illnesses, imprisoned individuals with mental illnesses tend to have longer jail stays and are at a higher risk of returning to jail upon release. The human toll of this problem—and its cost to taxpayers—is staggering. Jails spend 2 to 3 times more on adults requiring intervention because of their mental illness than those without a mental illness, yet improvements in public safety, health or quality of life are rarely observed.

New research on people with mental illnesses in the justice system shows that it is caused by multiple problems. These may include:

- Untreated mental illness

- Drug and alcohol use disorders
- Criminal risk factors
- Homelessness

The lack of stability in their lives causes them to cycle repeatedly through jail, hospitals, shelters, and crisis centers. These have a considerable cost to the community, but the community's current investment hasn't helped the incarcerated individuals' health and well-being. **Without change, large numbers of people who are homeless and mentally ill will continue to cycle through the criminal justice and healthcare systems. The citizens of your county are relying on you to provide a new solution.**

Please read the following solution.

To help both the mentally ill and homeless to gain stability after being released from jail, I propose a halfway house for rehabilitation. It will be a costly start up but will save money in the long run while helping those who need it. It will help people to reintegrate into society as functioning adults, instead of being a costly burden to society.

Rate the above solution on **QUALITY** by moving the dot to the point that best fits your answer.

Very Low Quality			Moderate Quality		Very High Quality	
1	2	3	4	5	6	7

Rate the above solution on **ORIGINALITY** by moving the dot to the point that best fits your answer.

Very Low Originality			Moderate Originality		Very High Originality	
1	2	3	4	5	6	7
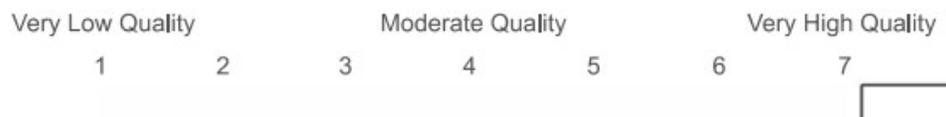
Please read the following solution.

Instead of putting these people in jail, perhaps put them into a treatment facility for them to get the needed counseling and treatment they need. Instead of continuing the cycle, put them into a mental health facility so that they can get the help that they need for their mental health, which may cause them to do drugs and alcohol. It may help break the cycle. Depending on the severity of their illness, try different options. Low offense and not too much of a danger, put them in outpatient with access to resources. Higher levels and more harmful, get them into treatment programs with more intense therapies. Offer treatment facilities and counselors that are trained in this where they spend a certain amount of time in, and they must take classes and pass different milestones to be graduated back into society. And once they graduate back into society, they still must come in for counseling or attend meetings to check in and be kept on track.

Rate the above solution on **QUALITY** by moving the dot to the point that best fits your answer.
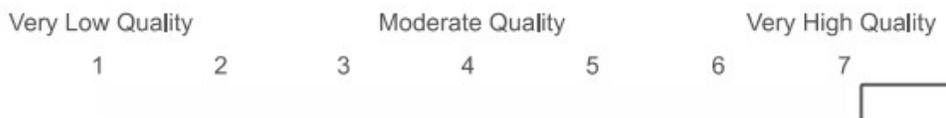
Very Low Quality			Moderate Quality		Very High Quality	
1	2	3	4	5	6	7

Rate the above solution on **ORIGINALITY** by moving the dot to the point that best fits your answer.

Very Low Originality			Moderate Originality		Very High Originality	
1	2	3	4	5	6	7

Please read the following solution.

First, the public will be educated on how to approach a person experiencing an episode who needs assistance. Just like everyone knows the number 911, everyone will know to call a dispatch number for a trained mental health professional to arrive on the scene (and hopefully avoid arrest). When people are arrested, they will immediately be seen at the jail by a mental health professional who will do a quick screening to assess mental illness and to make recommendations for care while in the justice system. This screening--a chance to talk through the situation before being put behind bars-- would also double as a good time to ensure that transgender individuals are placed in the safest place they can be, that diabetics have access to insulin, or that any other immediate physical/mental/safety needs are addressed and attended to. Once a person is jailed, a speedy trial should be guaranteed and sentencing should include alternatives to traditional prison -- i.e., a holding facility with mental health treatment, house arrest with mental health treatment, release, and probation with mental health treatment, etc.

Rate the above solution on **QUALITY** by moving the dot to the point that best fits your answer.
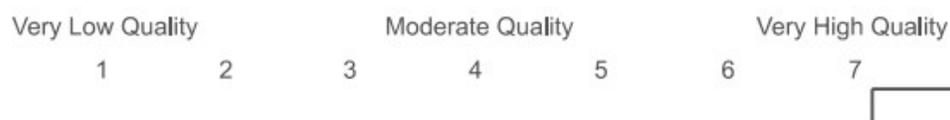
| Very Low Quality		Moderate Quality			Very High Quality	
1	2	3	4	5	6	7

Rate the above solution on **ORIGINALITY** by moving the dot to the point that best fits your answer.

Very Low Originality		Moderate Originality			Very High Originality	
1	2	3	4	5	6	7
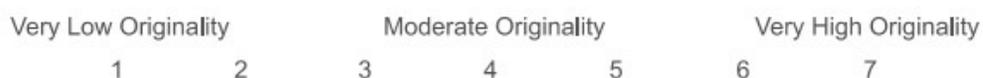
Please read the following solution.

There are two problems you must address: the point of entry problem where the police book these

individuals into jails, and the issue of long-term care. For the first problem, the police need better options and training when dealing with these individuals so they are not booked into jail and instead referred to a facility that can give them aid. Even starting the process of the prison cycle can be extremely harmful for individuals. Investing in some form of long-term care, where these individuals could be housed, cared for, referred to as opposed to a temporary crisis center.

Rate the above solution on **QUALITY** by moving the dot to the point that best fits your answer.
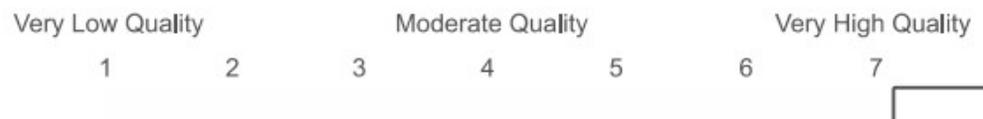
Very Low Quality		Moderate Quality			Very High Quality	
1	2	3	4	5	6	7

Rate the above solution on **ORIGINALITY** by moving the dot to the point that best fits your answer.

Very Low Originality		Moderate Originality			Very High Originality	
1	2	3	4	5	6	7

Please read the following solution.

The largest hurdle is not just getting people access to help/treatment but getting them to see that they may need it or to want it in the first place. Of course, destigmatization is helpful, but finding a way to connect with these people, outside of a doctor's office, as a gateway to treatment may be a practical place to start. Perhaps there could be a program where people who have successfully underwent treatment, who understand the problem, go out into the communities, and find a certain number of people to mentor. Most programs that I am aware of require the people to come to the program. This would be unique in that the program seeks out the people. The program itself could be supervised by doctors and trained staff, but the mentors would be people who successfully completed the program. They pay for the treatment they have received by mentoring a new group of people. With certain forms of mental illness, medication is the best or only course of action. There needs to be an easier way to get the medication to people and it needs to be affordable. Perhaps it should be delivered to people, via doctors in the program, with the mentors helping keep track of the person's residence or location. With drug and alcohol disorders, there is some research on a cognitive treatment where a neuropsychologist observe activity in the brain when shown pictures of their preferred drug of choice. Then, they train them to think about the loss of things in their life that they loved because of the drug. Over time, through several temporally spaced exercises like this, the person can train their brain to suppress the urge to take the drugs. This is a much more sustainable technique than administering more drugs, eventually minimizing cost. Finally, ability appropriate skills training should be offered as part of the program, skills for jobs and for forming relationships and operating in society.

Rate the above solution on **QUALITY** by moving the dot to the point that best fits your answer.

Very Low Quality			Moderate Quality			Very High Quality
1	2	3	4	5	6	7

Rate the above solution on **ORIGINALITY** by moving the dot to the point that best fits your answer.

Very Low Originality			Moderate Originality			Very High Originality
1	2	3	4	5	6	7
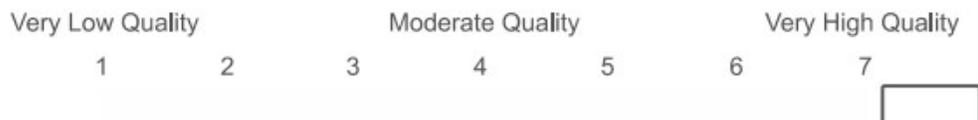
Read the solutions again, and select the solution you believe to be the MOST effective by clicking the box in which the solution appears.

○ First, the public will be educated on how to approach a person experiencing an episode who needs assistance. Just like everyone knows the number 911, everyone will know to call a dispatch number for a trained mental health professional to arrive on the scene (and hopefully avoid arrest). When people are arrested, they will immediately be seen at the jail by a mental health professional who will do a quick screening to assess mental illness and to make recommendations for care while in the justice system. This screening--a chance to talk through the situation before being put behind bars--would also double as a good time to ensure that transgender individuals are placed in the safest place they can be, that diabetics have access to insulin, or that any other immediate physical/mental/safety needs are addressed and attended to. Once a person is jailed, a speedy trial should be guaranteed and sentencing should include alternatives to traditional prison -- i.e., a holding facility with mental health treatment, house arrest with mental health treatment, release, and probation with mental health treatment, etc.

○ The largest hurdle is not just getting people access to help/treatment but getting them to see that they may need it or to want it in the first place. Of course, destigmatization is helpful, but finding a way to connect with these people, outside of a doctor's office, as a gateway to treatment may be a practical place to start. Perhaps there could be a program where people who have successfully underwent treatment, who understand the problem, go out into the communities, and find a certain number of people to mentor. Most programs that I am aware of require the people to come to the program. This would be unique in that the program seeks out the people. The program itself could be supervised by doctors and trained staff, but the mentors would be people who successfully completed the program. They pay for the treatment they have received by mentoring a new group of people. With certain forms of mental illness, medication is the best or only course of action. There needs to be an easier way to get the medication to people and it needs to be affordable. Perhaps it should be delivered to people, via doctors in the program, with the mentors helping keep track of the person's residence or location. With drug and alcohol disorders, there is some research on a cognitive treatment where a neuropsychologist observe activity in the brain when shown pictures of their preferred drug of choice. Then, they train them to think about the loss of things in their life that they loved because of the drug. Over time, through several temporally spaced exercises like this, the person can train their brain to suppress the urge to take the drugs. This is a much more sustainable technique than administering more drugs, eventually minimizing cost. Finally, ability appropriate skills training should be offered as part of the program, skills for jobs and for forming relationships and operating in society.

○ To help both the mentally ill and homeless to gain stability after being released from jail, I propose a halfway house for rehabilitation. It will be a costly start up but will save money in the long run while helping those who need it. It will help people to reintegrate into society as functioning adults, instead of being a costly burden to society.

O There are two problems you must address: the point of entry problem where the police book these individuals into jails, and the issue of long-term care. For the first problem, the police need better options and training when dealing with these individuals so they are not booked into jail and instead referred to a facility that can give them aid. Even starting the process of the prison cycle can be extremely harmful for individuals. Investing in some form of long-term care, where these individuals could be housed, cared for, referred to as opposed to a temporary crisis center.

O Instead of putting these people in jail, perhaps put them into a treatment facility for them to get the needed counseling and treatment they need. Instead of continuing the cycle, put them into a mental health facility so that they can get the help that they need for their mental health, which may cause them to do drugs and alcohol. It may help break the cycle. Depending on the severity of their illness, try different options. Low offense and not too much of a danger, put them in outpatient with access to resources. Higher levels and more harmful, get them into treatment programs with more intense therapies. Offer treatment facilities and counselors that are trained in this where they spend a certain amount of time in, and they must take classes and pass different milestones to be graduated back into society. And once they graduate back into society, they still must come in for counseling or attend meetings to check in and be kept on track.

START OF TRAINING MATERIAL

Please read the following material carefully, you will be asked questions on the next page about the content.

A **quality** solution is...

1. **Effective**, meaning it addresses the root cause of the problem, not solely the symptoms.
   - *Example*: You are going to the doctor for a sore throat, congestion, and a cough. A test indicates you have strep throat.
     - An ineffective solution would be if the doctor told you to take some cough drops for your throat and cough.
     - An effective solution would be if the doctor prescribed antibiotics to fight the bacteri infection causing the symptoms.
2. **Efficient**, meaning it is cost effective and a good use of funds to solve the problem.
   - *Example*: Your car is extremely old and the engine has finally given out.
     - An inefficient solution would to be to spend more money than the car is worth trying to fix or replace the engine.
     - An effective solution would be to sell your car for scraps or parts, and use that money to buy a functional car that will need little to no maintenance.
3. **Acceptable and satisfactory**, meaning it is accepted by the recipients and the public.
   - *Example*: You are tasked with solving an administrative problem at work.
     - An unacceptable/dissatisfactory solution would be to solve the problem by cutting corners and going against company policies.
     - An acceptable/satisfactory solution would be to solve the problem while keeping in line with rules and company policies.
4. **Sustainable**, meaning it is able to be upheld.
   - *Example*: You have decided you wanted to lose weight and live a healthier life style.
     - An unsustainable solution would be to use a strict low calorie diet and intense exercise everyday.
     - A sustainable solution would be to gradually start an exercise schedule and begin eating healthier foods.

An **original** solution is...

1. **Novel**, meaning it is new in an interesting way.
   - *Example*: Riding a bike.
     - A novel way of riding a bike would be to ride it facing backwards while balancing on the front wheel.
     - A normal way of riding a bike would be to face forward while riding with both feet and hands on the the respective pedals and handlebars.
2. **Unusual**, meaning it is not commonly occurring or done.

   - *Example*: Grocery shopping.
     - An unusual way of grocery shopping would be sprinting from aisle to aisle while grabbing grocery items.
     - A common way of grocery shopping would be walking from aisle to aisle while grabbing grocery items.
3. **Plausible**, meaning it is reasonable.
   - *Example*: You have been tasked with designing new roads in your city.
     - An implausible solution would be to dig up all of the old roads and completely redesign the entire road system.
     - A plausible solution would be to expand busier roads and add additional roads where traffic does not flow well.

Note: An original solution can be either an **incremental (small) change** to what is already being done or a **major change** that has never been done before.

Why do solutions need to be creative?

1. They need to be high in quality and originality while ensuring the solution addresses the core problem, to not been done before, and is sustainable.
2. Difficult problems require creative/innovative solutions.

A quality solution consists of which of the following?

○ Unsustainable, Effective, Efficient, Satisfactory
○ Effective, Efficient. Sustainable, Satisfactory
○ Efficient, Effective, Sustainable, Disorganized
○ Sustainable, Effective, Satisfactory, Disorganized

An original solution consists of which of the following?

○ Plausible, Novel, Unlikely
○ Unusual, Common, Plausible
○ Novel, Unusual, Plausible
○ Common, Novel, Unusual

Which of the following defines sustainable?

○ Something that is finite
○ The ability to only last for short periods of time
○ Th ability to address symptoms of a problem
○ The ability to be upheld for a long period of time

Which of the following defines plausible?

○ Illogical
○ Counterintuitive
○ Arbitrary
○ Reasonable

On the next 5 pages you will find your ratings and the mean rating of experts on quality and originality for each solution. Please read each scenario and look at your ratings in comparison to the experts. Then read the description that describes the reasoning behind the expert ratings.

Solution 1: To help both the mentally ill and homeless to gain stability after being released from jail, I propose a halfway house for rehabilitation. It will be a costly start up but will save money in the long run while helping those who need it. It will help people to reintegrate into society as functioning adults, instead of being a costly burden to society.

Your Rating of Quality: ${q://QID145/ChoiceNumericEntryValue/1}
Your Rating of Originality: ${q://QID146/ChoiceNumericEntryValue/1}
Expert Quality Mean: 2.5
Expert Originality Mean: 1

Experts rated an average of 2.5 on quality because it is not comprehensive, and already have these solutions in place and they are not solving the problem. This was rated as an average of 1 on originality because this solution is not new and is commonly seen.

Solution 2: Instead of putting these people in jail, perhaps put them into a treatment facility for them to get the needed counseling and treatment they need. Instead of continuing the cycle, put them into a mental health facility so that they can get the help that they need for their mental health, which may cause them to do drugs and alcohol. It may help break the cycle. Depending on the severity of their illness, try different options. Low offense and not too much of a danger, put them in outpatient with access to resources. Higher levels and more harmful, get them into treatment programs with more

intense therapies. Offer treatment facilities and counselors that are trained in this where they spend a certain amount of time in, and they must take classes and pass different milestones to be graduated back into society. And once they graduate back into society, they still must come in for counseling or attend meetings to check in and be kept on track.

Your Rating of Quality: ${q://QID149/ChoiceNumericEntryValue/1}
Your Rating of Originality: ${q://QID150/ChoiceNumericEntryValue/1}
Expert Quality Mean: 5
Expert Originality Mean: 5

Experts rated as an average of 5 on quality because it emphasizes the core of the problem, and it is very useful. However having people "graduate" back into society may not be feasible. This was rated as an average of 5 on originality because these are fairly unique ideas, but still has some common ideas within it.

Solution 3: First, the public will be educated on how to approach a person experiencing an episode who needs assistance. Just like everyone knows the number 911, everyone will know to call a dispatch number for a trained mental health professional to arrive on the scene (and hopefully avoid arrest). When people are arrested, they will immediately be seen at the jail by a mental health professional who will do a quick screening to assess mental illness and to make recommendations for care while in the justice system. This screening--a chance to talk through the situation before being put behind bars--would also double as a good time to ensure that transgender individuals are placed in the safest place they can be, that diabetics have access to insulin, or that any other immediate physical/mental/safety needs are addressed and attended to. Once a person is jailed, a speedy trial should be guaranteed and sentencing should include alternatives to traditional prison -- i.e., a holding facility with mental health treatment, house arrest with mental health treatment, release, and probation with mental health treatment, etc.

Your Rating of Quality: ${q://QID152/ChoiceNumericEntryValue/1}
Your Rating of Originality: ${q://QID153/ChoiceNumericEntryValue/1}
Expert Quality Mean: 5.5
Expert Originality Mean: 4.5

Experts rated as an average of 5.5 on quality because it had several well thought out ideas, but the idea of having a separate emergency number is not feasible. This was rated as an average of 4.5 on originality because some of the ideas are novel, but the others have been or are currently being implemented.

Solution 4: There are two problems you must address: the point of entry problem where the police book these individuals into jails, and the issue of long-term care. For the first problem, the police need better options and training when dealing with these individuals so they are not booked into jail and instead referred to a facility that can give them aid. Even starting the process of the prison cycle can be extremely harmful for individuals. Investing in some form of long-term care, where these individuals could be housed, cared for, referred to as opposed to a temporary crisis center.

Your Rating of Quality: ${q://QID155/ChoiceNumericEntryValue/1}
Your Rating of Originality: ${q://QID156/ChoiceNumericEntryValue/1}
Expert Quality Mean: 5
Expert Originality Mean: 2.5

Experts rated an average of 5 on quality because it is looks at multiple parts of the problem, but lacks clarity in some parts of the explanation. This was rated as an average of 2.5 on originality because they are pretty common ideas.

<u>Solution 5:</u> The largest hurdle is not just getting people access to help/treatment but getting them to see that they may need it or to want it in the first place. Of course, destigmatization is helpful, but finding a way to connect with these people, outside of a doctor's office, as a gateway to treatment may be a practical place to start. Perhaps there could be a program where people who have successfully underwent treatment, who understand the problem, go out into the communities, and find a certain number of people to mentor. Most programs that I am aware of require the people to come to the program. This would be unique in that the program seeks out the people. The program itself could be supervised by doctors and trained staff, but the mentors would be people who successfully completed the program. They pay for the treatment they have received by mentoring a new group of people. With certain forms of mental illness, medication is the best or only course of action. There needs to be an easier way to get the medication to people and it needs to be affordable. Perhaps it should be delivered to people, via doctors in the program, with the mentors helping keep track of the person's residence or location. With drug and alcohol disorders, there is some research on a cognitive treatment where a neuropsychologist observe activity in the brain when shown pictures of their preferred drug of choice. Then, they train them to think about the loss of things in their life that they loved because of the drug. Over time, through several temporally spaced exercises like this, the person can train their brain to suppress the urge to take the drugs. This is a much more sustainable technique than administering more drugs, eventually minimizing cost. Finally, ability appropriate skills

training should be offered as part of the program, skills for jobs and for forming relationships and operating in society.

Your Rating of Quality: ${q://QID158/ChoiceNumericEntryValue/1}
Your Rating of Originality: ${q://QID159/ChoiceNumericEntryValue/1}
Quality Mean: 5
Originality Mean: 6

Experts rated as an average of 5 on quality because they are very well explained and clearly addresses the problem, but it will likely be difficult or impossible to implement. This was rated as an average of 6 on originality because it contains a lot of novel and uncommon ideas, but it still contains a few existing ideas.

<u>END OF TRAINING MATERIAL</u>

BEGINNING OF INSTRUCTIONS MATERIAL

Please read the following material carefully, you will be asked questions on the next page about the content.

A **quality** solution is...

1. **Effective**, meaning it addresses the root cause of the problem, not solely the symptoms.
2. **Efficient**, meaning it is cost effective and a good use of funds to solve the problem.
3. **Acceptable and satisfactory**, meaning it is accepted by the recipients and the public.
4. **Sustainable**, meaning it is able to be upheld.

An **original** solution is...

1. **Novel**, meaning it is new in an interesting way.
2. **Unusual**, meaning it is not commonly occurring or done.
3. **Plausible**, meaning it is reasonable.

Note: An original solution can be either an **incremental (small) change** to what is already being done or a **major change** that has never been done before.

Why do solutions need to be creative?

1. They need to be high in quality and originality while ensuring the solution addresses the core problem, to not been done before, and is sustainable.
2. Difficult problems require creative/innovative solutions.

A quality solution consists of which of the following?

○ Unsustainable, Effective, Efficient, Satisfactory

○ Efficient, Effective, Sustainable, Disorganized

○ Sustainable, Effective, Satisfactory, Disorganized

○ Effective, Efficient. Sustainable, Satisfactory

An original solution consists of which of the following?

○ Plausible, Novel, Unlikely

○ Novel, Unusual, Plausible

○ Unusual, Common, Plausible

○ Common, Novel, Unusual

Which of the following defines sustainable?

○ Something that is finite

○ Th ability to address symptoms of a problem

○ The ability to be upheld for a long period of time

○ The ability to only last for short periods of time

Which of the following defines plausible?

○ Arbitrary

○ Illogical

○ Counterintuitive

○ Reasonable

END OF INSTRUCTIONS MATERIAL

READ THE FOLLOWING INFORMATION CAREFULLY.

You are acting as a member of a committee for your county's government. Your task is to generate solutions to address the problems your county is having. Your boss desires solutions that are creative and able to be implemented.

Incarcerating mentally ill people in your county costs millions of dollars per year and does not improve their situation.

Background:

Approximately 10,000 times each year in your county, adults who have serious mental illnesses are booked into jails. 7,500 of these adults also have drug and alcohol use problems. In comparison with inmates without mental illnesses, imprisoned individuals with mental illnesses tend to have longer jail stays and are at a higher risk of returning to jail upon release. The human toll of this problem—and its cost to taxpayers—is staggering. Jails spend 2 to 3 times more on adults requiring intervention because of their mental illness than those without a mental illness, yet improvements in public safety, health or quality of life are rarely observed.

New research on people with mental illnesses in the justice system shows that it is caused by multiple problems. These may include:

- Untreated mental illness
- Drug and alcohol use disorders
- Criminal risk factors
- Homelessness

The lack of stability in their lives causes them to cycle repeatedly through jail, hospitals, shelters, and crisis centers. These have a considerable cost to the community, but the community's current investment hasn't helped the incarcerated individuals' health and well-being. **Without change, large numbers of people who are homeless and mentally ill will continue to cycle through the criminal justice and healthcare systems. The citizens of your county are relying on you to provide a new solution.**

Please read the following solution.

Putting them in a rehabilitation program, not in the general population but in a separate unite than the general prison. That way the people they are around are people with similar problems and not hardened criminals. Not getting the proper help in prison currently is not fixing the problems. They are only making them worse and not helping anyone with a mental issues.

Rate the above solution on **QUALITY** by moving the dot to the point that best fits your answer.

Very Low Quality		Moderate Quality		Very High Quality	
1	2	3	4	5	6	7

Rate the above solution on **ORIGINALITY** by moving the dot to the point that best fits your answer.

Very Low Originality		Moderate Originality		Very High Originality	
1	2	3	4	5	6	7
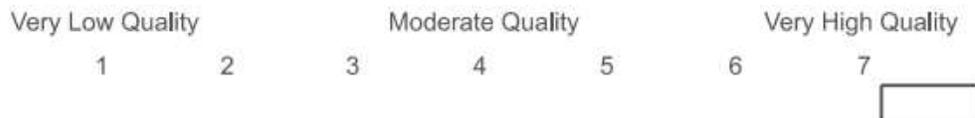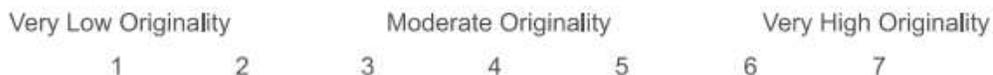
Please read the following solution.

Mandatory counseling and guidance from well-qualified professionals to help them live with their mental illness. Not imprisoning those with mental illnesses and instead of helping them and putting them in programs that could be paid for with tax money instead of spending that money to keep them in jail. They are in jail for their illnesses, so they need the help to be able to break that process.

Rate the above solution on **QUALITY** by moving the dot to the point that best fits your answer.

Very Low Quality		Moderate Quality		Very High Quality	
1	2	3	4	5	6	7

Rate the above solution on **ORIGINALITY** by moving the dot to the point that best fits your answer.

Very Low Originality		Moderate Originality		Very High Originality	
1	2	3	4	5	6	7
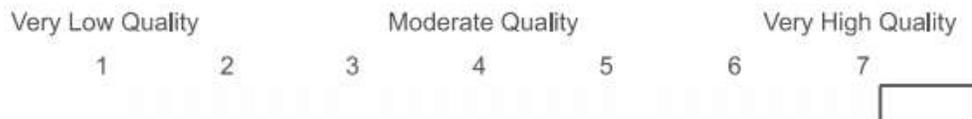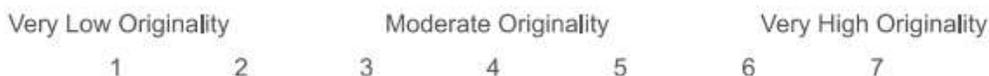
Please read the following solution.

Have more spaces for mentally ill criminals in a separate hospital besides medical. I think there might be that which exists already but make it more known and have these services available for mostly the lower offenders at least at first. Give them the medication they need and the therapy. Have donations available to help this type of venue successful. Make sure it will be safe for those going into it even before they feel like they are going to commit a crime. Love people as they are and tell them they are just as important, sometimes proper reinforcements help the mind and the soul recover from mental illnesses.

Rate the above solution on **QUALITY** by moving the dot to the point that best fits your answer.

| Very Low Quality			Moderate Quality			Very High Quality
1	2	3	4	5	6	7

Rate the above solution on **ORIGINALITY** by moving the dot to the point that best fits your answer.

Very Low Originality			Moderate Originality			Very High Originality
1	2	3	4	5	6	7
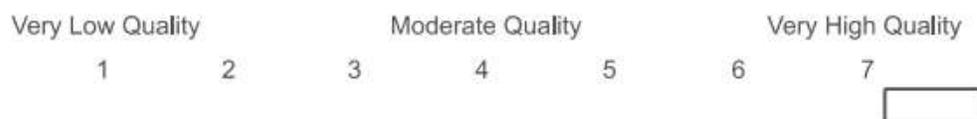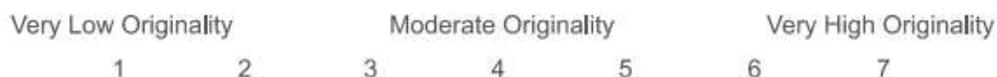
Please read the following solution.

My solution to improving the treatment of individuals in the justice system is not to jail people with mental illnesses at all in this county. The funds that are used to treat the mentally ill in the justice system in this County should be redirected to update and expand mental illness and drug treatment centers to accommodate long-term care. Case managers and social workers need to be added to these facilities to locate housing and provide education on maintaining housing and healing (treatment) once they are released from facilities. Also, there should be long-term housing created for the sole purpose of housing the homeless with mental illnesses and addictions. Included in these housing programs need to be follow-up treatment centers, offices for counselors and psychologists to provide additional treatment, such as further evaluations and prescriptions of medications as needed for the individual in need of treatment. I see this being a one-stop-shop for all things mental health/addiction/unhoused related, a village if you will. If people have stable housing and some form of positive support, fewer crimes will be committed and people will adhere to the treatment they have been prescribed and form a sense of community.

Rate the above solution on **QUALITY** by moving the dot to the point that best fits your answer.

Very Low Quality			Moderate Quality			Very High Quality
1	2	3	4	5	6	7

Rate the above solution on **ORIGINALITY** by moving the dot to the point that best fits your answer.

Very Low Originality			Moderate Originality			Very High Originality
1	2	3	4	5	6	7
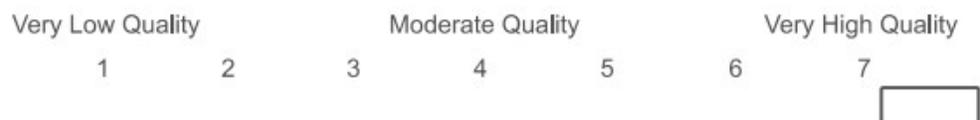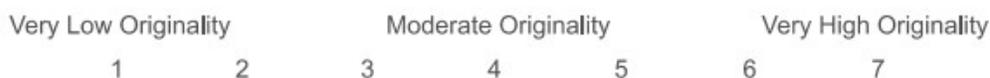
Please read the following solution.

County Sheriff's Office Booking procedures would require a deputy/officer to note any mental illnesses from their perspective in addition to trained personnel to note any mental illness issues as they are being processed. As they are brought into the jail on the first arrest, there would be a section for the booking form for the arresting officer and an intake form to evaluate the subject.

Rate the above solution on **QUALITY** by moving the dot to the point that best fits your answer.

| Very Low Quality			Moderate Quality			Very High Quality
1	2	3	4	5	6	7

Rate the above solution on **ORIGINALITY** by moving the dot to the point that best fits your answer.

Very Low Originality			Moderate Originality			Very High Originality
1	2	3	4	5	6	7

Read the solutions again, and select the solution you believe to be the _MOST_ effective by clicking the box in which the solution appears.

O Have more spaces for mentally ill criminals in a separate hospital besides medical. I think there might be that which exists already but make it more known and have these services available for mostly the lower offenders at least at first. Give them the medication they need and the therapy. Have donations available to help this type of venue successful. Make sure it will be safe for those going into it even before they feel like they are going to commit a crime. Love people as they are and tell them they are just as important, sometimes proper reinforcements help the mind and the soul recover from mental illnesses.

O Putting them in a rehabilitation program, not in the general population but in a separate unite than the general prison. That way the people they are around are people with similar problems and not hardened criminals. Not getting the proper help in prison currently is not fixing the problems. They are only making them worse and not helping anyone with a mental issues.

O My solution to improving the treatment of individuals in the justice system is not to jail people with mental illnesses at all in this county. The funds that are used to treat the mentally ill in the justice system in this county should be redirected to update and expand mental illness and drug treatment centers to accommodate long-term care. Case managers and social workers need to be added to these facilities to locate housing and provide education on maintaining housing and healing (treatment) once they are released from facilities. Also, there should be long-term housing created for the sole purpose of housing the homeless with mental illnesses and addictions. Included in these housing programs need to be follow-up treatment centers, offices for counselors and psychologists to provide additional treatment, such as further evaluations and prescriptions of medications as needed for the individual in need of treatment. I see this being a one-stop-shop for all things mental health/addiction/unhoused related, a village if you will. If people have stable housing and some form of positive support, fewer crimes will be committed and people will adhere to the treatment they have been prescribed and form a sense of community.

○ Mandatory counseling and guidance from well-qualified professionals to help them live with their mental illness. Not imprisoning those with mental illnesses and instead of helping them and putting them in programs that could be paid for with tax money instead of spending that money to keep them in jail. They are in jail for their illnesses, so they need the help to be able to break that process.

○ County Sheriff's Office Booking procedures would require a deputy/officer to note any mental illnesses from their perspective in addition to trained personnel to note any mental illness issues as they are being processed. As they are brought into the jail on the first arrest, there would be a section for the booking form for the arresting officer and an intake form to evaluate the subject.

READ THE FOLLOWING INFORMATION CAREFULLY.

You are acting as a member of a committee for your county's government. Your task is to generate solutions to address the problems your county is having. Your boss desires solutions that are creative and able to be implemented.

<u>**Youth obesity is a growing issue in your county.**</u>

Background:
Approximately 38% of the children living in your county are obese, which is much higher than the national average. Childhood obesity is a severe health concern as it causes many other health problems, including:

- High blood pressure
- High colesterol
- Cardiovascular disease
- Type 2 diabetes
- Breathing problems
- Fatty liver disease
- Anxiety and depression
- Poor quality of life

- Adulthood obesity
- Cancer

Additional information about your county shows:

- County population is 300,000 people total and 100,000 children
- There are 60 grocery stores and 220 fast food restaurants
- 90,000 people have difficulty accessing or affording food
- 30,000 children live in poverty
- There is access to many public parks, but they are not used frequently
- The percent of people receiving food stamps in your county is double the national average

Without your help, the youth obesity rates in the county are projected to grow even larger. The citizens of your county are relying on you to provide a new solution.

Please read the following solution.

Encourage kids to consumer less "bad" fat and more "good" fat, less processed and high sugar foods. Also, encourage them to eat more servings of vegetables, fruits, and dietary fiber. Focus on teaching them to eat low-glycemic index foods.

Rate the above solution on **QUALITY** by moving the dot to the point that best fits your answer.

| Very Low Quality			Moderate Quality			Very High Quality
1	2	3	4	5	6	7

Rate the above solution on **ORIGINALITY** by moving the dot to the point that best fits your answer.

Very Low Originality			Moderate Originality			Very High Originality
1	2	3	4	5	6	7
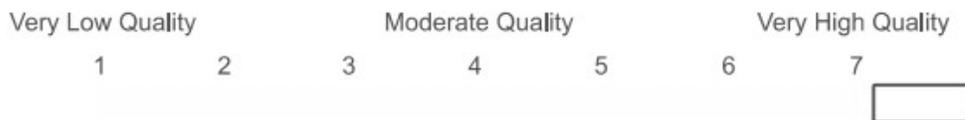
Please read the following solution.

Create better nutritional education in schools instead of having kids rely on their family to encourage and incentivize healthy eating. Stop barraging kids with unhealthy food ads and start teaching kids at

a young age on how to eat healthy. Additionally, there should be a limit on sodas and unhealthy foods when using food assistance programs.

Rate the above solution on **QUALITY** by moving the dot to the point that best fits your answer.

Very Low Quality			Moderate Quality			Very High Quality
1	2	3	4	5	6	7

Rate the above solution on **ORIGINALITY** by moving the dot to the point that best fits your answer.

Very Low Originality			Moderate Originality			Very High Originality
1	2	3	4	5	6	7
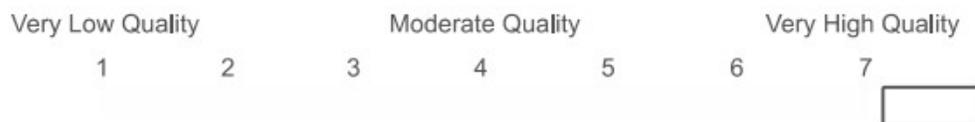
Please read the following solution.

Have school provide physical education every day, throughout twelfth grade, with a focus on helping students find enjoyable exercise and practicing goal-setting and accountability (i.e., the ability to graduate high school knowing that they can and will walk/dance/etc. three times a week as an adult). Also, have schools provide an improved home economics curriculum for all genders throughout 12th grade, where they're taught not only cooking but nutrition, gardening, budgeting, healthy communication, and child-rearing -- anything that will assist them in becoming healthy adults. Make school lunches that are health and free, with only healthy snacks available as an alternative to vending machine sodas in the schools. Make all public buildings (schools, parks, etc.) have community gardening programs and free or reduced-price vegetables. The county will also need to work to incentivize grocery stores (perhaps tax incentives) to open near low-income areas (accepting SNAP).

Rate the above solution on **QUALITY** by moving the dot to the point that best fits your answer.
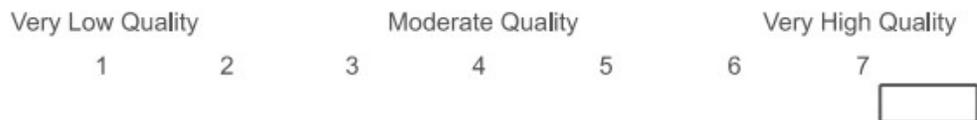
Very Low Quality			Moderate Quality			Very High Quality
1	2	3	4	5	6	7

Rate the above solution on **ORIGINALITY** by moving the dot to the point that best fits your answer.

Very Low Originality			Moderate Originality			Very High Originality
1	2	3	4	5	6	7

Please read the following solution.

To get more families and youth to make use of the parks would be to provide free after school and summer programming at the community centers located in the public parks. The after school and summer programming will need to focus on outdoor activities and the importance of physical movement. It would also be important to hire and staff these programs with people living in these communities. Regarding food deserts, farmers markets, which are typically cheaper than grocery stores, can be set up in the parks on the weekends, driving more traffic to the parks and simultaneously, providing a source of healthy foods for the residents in those areas. Farmers markets also typically accept EBT, WIC, and other forms of governmental assistance payments. I also suggest building skate parks and bicycle trails be added to the parks. Start park cleanup programs, ridding the parks of trash and beautifying those areas with murals of people who resemble the population of the people living in those areas.

Rate the above solution on **QUALITY** by moving the dot to the point that best fits your answer.

Very Low Quality		Moderate Quality			Very High Quality	
1	2	3	4	5	6	7

Rate the above solution on **ORIGINALITY** by moving the dot to the point that best fits your answer.

Very Low Originality		Moderate Originality			Very High Originality	
1	2	3	4	5	6	7

Please read the following solution.

One step is to ensure that food stamps can be accepted at farmers markets and other places to obtain healthy food. Put policies in place to try to encourage communal gardening, maybe converting some unused park space. I would also ensure that the school schedule fits the children's ages and sleep schedule, so 13-year-old kids do not wake up at 6 to catch a bus to school. I would also consider the county providing a slightly subsidized meal delivery service with healthy options to compete with fast food.

Rate the above solution on **QUALITY** by moving the dot to the point that best fits your answer.
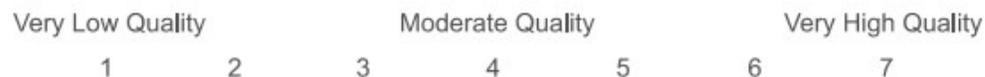
Very Low Quality		Moderate Quality			Very High Quality	
1	2	3	4	5	6	7

Rate the above solution on **ORIGINALITY** by moving the dot to the point that best fits your answer.

Very Low Originality		Moderate Originality			Very High Originality	
1	2	3	4	5	6	7

Read the solutions again, and select the solution you believe to be the _MOST_ effective by clicking the box in which the solution appears.

○ Have school provide physical education every day, throughout twelfth grade, with a focus on helping students find enjoyable exercise and practicing goal-setting and accountability (i.e., the ability to graduate high school knowing that they can and will walk/dance/etc. three times a week as an adult). Also, have schools provide an improved home economics curriculum for all genders throughout 12th grade, where they're taught not only cooking but nutrition, gardening, budgeting, healthy communication, and child-rearing -- anything that will assist them in becoming healthy adults. Make school lunches that are health and free, with only healthy snacks available as an alternative to vending machine sodas in the schools. Make all public buildings (schools, parks, etc.) have community gardening programs and free or reduced-price vegetables. The county will also need to work to incentivize grocery stores (perhaps tax incentives) to open near low-income areas (accepting SNAP).

○ Create better nutritional education in schools instead of having kids rely on their family to encourage and incentivize healthy eating. Stop barraging kids with unhealthy food ads and start teaching kids at a young age on how to eat healthy. Additionally, there should be a limit on sodas and unhealthy foods when using food assistance programs.

○ Encourage kids to consumer less "bad" fat and more "good" fat, less processed and high sugar foods. Also, encourage them to eat more servings of vegetables, fruits, and dietary fiber. Focus on teaching them to eat low-glycemic index foods.

○ To get more families and youth to make use of the parks would be to provide free after school and summer programming at the community centers located in the public parks. The after school and summer programming will need to focus on outdoor activities and the importance of physical movement. It would also be important to hire and staff these programs with people living in these communities. Regarding food deserts, farmers markets, which are typically cheaper than grocery stores, can be set up in the parks on the weekends, driving more traffic to the parks and simultaneously, providing a source of healthy foods for the residents in those areas. Farmers markets also typically accept EBT, WIC, and other forms of governmental assistance payments. I also suggest building skate parks and bicycle trails be added to the parks. Start park cleanup programs, ridding the parks of trash and beautifying those areas with murals of people who resemble the population of the people living in those areas.

○ One step is to ensure that food stamps can be accepted at farmers markets and other places to obtain healthy food. Put policies in place to try to encourage communal gardening, maybe converting some unused park space. I would also ensure that the school schedule fits the children's ages and sleep schedule, so 13-year-old kids do not wake up at 6 to catch a bus to school. I would also consider the county providing a slightly subsidized meal delivery service with healthy options to compete with fast food.

Demographics

For the following demographic questions, please select the answer that best applies to you.

Please indicate the answer that indicates your entire household income before taxes. If your income has changed radically due to the pandemic, please list the household income you had before the pandemic.

○ Below $14,999
○ Between $15,000-$31,999
○ Between $32,000-$69,999
○ Between $70,000-$129,999
○ Over $130,000

What is your father's (or 1st parental guardian's) educational attainment?

○ I did not have this parent or guardian present when I was growing up
○ Did not graduate from high school
○ Graduated from high school
○ Received some post-high school education/training
○ Graduated from college or received their bachelor's degree
○ Received advanced training beyond a bachelor's degree

What is your mother's (or 2nd parental guardian's) educational attainment?

○ I did not have this parent or guardian present when I was growing up
○ Did not graduate from high school
○ Graduated from high school
○ Received some post-high school education/training
○ Graduated from college or received their bachelor's degree
○ Received advanced training beyond a bachelor's degree
○ I did not have this parent or guardian when growing up.

Which racial categories best describe you? Select all that apply to you:

☐ Native Hawaiian or Other Pacific Islander - For example, Native Hawaiian, Samoan, Chamorro

☐ Hispanic, Latino, or Spanish Origin - For example, Mexican or Mexican American, Puerto Rican, Cuban

☐ White or Caucasian - For example, German, Irish, English

☐ Native American or Alaskan Native - For example, Navajo Nation, Blackfeet Tribe, Mayan

☐ Asian - For example, Chinese, Asian Indian, Vietnamese

☐ Mddle Eastern or North African - For example, Lebanese, Iranian, Egyptiani

☐ Middle/Southern African or Black - For example, African American, Kenyan, South African

☐ [   ] Other, please specify

☐ I prefer not to answer.

List the gender you identify with.

○ Agender

○ Nonbinary

○ Gender Fluid

○ Woman

○ Man

○ If none of these describe you, please enter your gender identity here.
[   ]

Do you identify as intersex?

○ No

○ Yes

Do you identify as transgender?

○ No

○ Yes

What is your sexual orientation?

☐ Asexual

☐ Bisexual

☐ Gay

☐ Heterosexual

☐ Lesbian

☐ Pansexual

☐ Queer

☐ If none of these describe you, please indicate what describes you:

[   ]

☐ I prefer not to say.

Please list your age.

[   ]

List your MTurk ID.

[   ]

MTurk Random Code

Here is your completion code: ${e://Field/Random%20ID}

Please copy this number. Once you have copied your code, click the arrow to submit and complete the survey.

Thank you for your participation!