CREATIVE MINDSETS
IS IT POSSIBLE TO HAVE BOTH FIXED AND GROWTH MINDSETS?

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Abstract

A creative mindset reflects people's views on whether creativity is a malleable (i.e., growth mindset) or an innate, unmalleable (i.e., fixed mindset). Recently, there have been discussions about the nature of these two creative mindset structures. While some researchers argue that the two mindsets are different and alternative to each other, some researchers argue that the two creative mindsets are independent of each other but not opposite each other. This research aims to contribute to this discussion with two studies from Turkey. We adapted the Creative Mindsets Scale (Karwowski, 2014) to Turkish and explored its psychometric properties in the Turkish context. A total of 741 (n=198 for Study 1; n=543 for Study 2) adults (Mage= 25,889; SD= 5,992) participated in the study. Among all participants, 529 were female (71.39%). The results of Confirmatory Factor Analysis from both studies verified the two-factor structure (Growth Mindset and Fixed Mindset) of the Creative Mindsets construct. In both studies, the correlation between Growth Mindset and Fixed Mindset Scales was negative and moderate. These results indicated that fixed and growth creative mindsets were related but independent constructs. These results showed that Growth and Fixed mindsets are not two ends of the same continuum and it's possible that individuals can endorse both fixed and growth creative mindsets at the same time, as well as have neither mindset nor a combination of fixed and growth. The Creative Mindset Scale has been adapted to a wide variety of languages. Studies conducted in different cultures have revealed similar factor structures and item properties as in our study. The findings will be discussed comparatively with studies conducted in different cultures.

Keywords: Creative mindsets, growth mindset, fixed mindset, creativity, scale adaptation.

1. Introduction

Dweck (1999), starting from well-known attribution theories in social perception and social cognition studies, states that people have systematic beliefs or belief systems about themselves or certain characteristics such as intelligence and that this implicit theory reflects their social perceptions and affects their motivations and goal-oriented behaviors. According to Dweck (2016), people have one of two basic mindsets about their characteristics such as intelligence, namely fixed or growth mindset. If a person has the opinion that mental abilities such as intelligence can be developed over time, that is a growth mindset, then she/he has a higher motivation for success than people who believe that these abilities are innate and will never change, that is, people with a fixed mindset. Because people with a growth mindset believe that they can achieve success by working and using the right strategies, since their current mental skills do not create an insurmountable limit for them, and they make more efforts (Dweck & Yeager, 2019). On the other hand, those who have a fixed mindset believe that hard work and effort are peculiar to non-intelligent people, and if they act like this, others will conclude that they are not smart enough (Dweck, 2016). Karwowski (2014), inspired by Dweck's view, introduced the concept of a creative mindset. According to the creative mindset conceptualization, people have beliefs about the malleability of creativity. These beliefs affect their self-definition and revelation of their creative potential. While people who believe that creativity is innate and difficult to change are defined as having a fixed mindset. Those with a growth mindset believe that creativity can be improved by effort. Studies have shown that those with a growth creative mindset have a greater sense of creative self-efficacy and creative personal identity (eg: Karwowski, 2014; Karwowski, Royston, & Reiter-Palmon, 2019; O'Connor, Nemeth, & Akutsu, 2013; Pretz & Nelson, 2017). Those with a fixed mindset also scores on divergent thinking (Warren et al., 2018).

This study aimed to investigate the psychometric properties of the Turkish version of the Creative Mindsets Scale. The scale, developed by Karwowski (2014), has been adapted to several languages (e.g., Hass et al., 2016; Karwowski et al., 2019; Tang et al., 2016; Zhou et al., 2020). Findings from those studies show that the scale shows similar factor structure and item characteristics, and that people can be separated as having a growth or fixed creative mindset in different cultures. Hence within the scope of this study, the scale adapted to Turkish, and data were obtained from Turkish adults to find out whether the same factor structures translate to the Turkish context.

2. Method

2.1. Study samples

For this study, data were obtained from two samples (N=741). The first sample of the study consisted of 198 people aged between 19 and 41 (M= 25.889; Sd=5.92). 173 of the participants were women (66.2%). In the second sample of the study, there were a total of 543 participants aged between 18 and 74 (M=30.996; Sd=11.11). 356 of the participants were women (65.6%).

2.2. Instrument

The Creative Mindsets Scale

It is a 10-item scale developed by Karwowski (2014) to assess the creative mindsets of adolescents and adults. There are two subscales in the scale, namely the Growth Creative Mindset and the Fixed Creative Mindset. In each of the subscales, there are 5 items answered by marking them on a 5-point Likert scale (1=definitely no; 5=definitely yes). This two-factor structure has been validated in all the Polish, German, Chinese, and English versions of the scale (Hass et al., 2016; Karwowski et al., 2019; Tang et al., 2016; Zhou et al., 2020). In the original study conducted by Karwowski (2014), the internal consistency coefficients of the scale were found .76 and .78 for the Fixed Creative Mindset subscale and .65 and .73 for the Developing Creative Mindset subscale for two different samples. The items of the Creative Mindset Scale were independently translated into Turkish by an English and Turkish speaker (an academic in the field of English Education). After the independent translations, these three experts met with the researchers to compare and discuss the translations. After the discussions, the final version was prepared by the researchers. Since the items were written in plain language, back-translation was not required.

2.3. Data gathering

After the Ethics Committee Approval was obtained, an electronic form of the Turkish version of the scale along with the demographic information form was prepared for online use and shared on social media. All the participants participated voluntarily. Before starting the scale, informed consent was obtained from all participants with a yes/no screen question.

3. Results

3.1. Validity of the scale

Confirmatory Factor Analysis

To examine whether this two-independent factorial structure of the scale could be confirmed in the Turkish sample, two different Confirmatory Factor Analyses (CFA) were conducted in two separate samples. For both samples, the scale was analyzed both with one-factor and two-factors.

For the first sample, the results of CFA showed that fit indices for both one-factor solution (χ^2 =107, 344; p = .000, df=35, χ^2/df= 3.067, CFI = .825, TLI = .774, RMSEA = .102 and SRMR= .086) and two-factor solution (χ^2 =57,706; p = .014, df=34, χ^2/df= 1, 697, CFI = .796, TLI = .730, RMSEA = .056 and SRMR= .068) were not acceptable. In a one-factor solution, 5 items had factor loadings lower than .40, showing that this solution was not acceptable for this dataset. When standardized factor loadings and standardized residues were examined in the two-factor model, it was seen that there was a problem only in the 3rd item. This item loaded on the relevant factor (Growth Creative Mindset) below .40 and was not statistically significant (p= .612). Accordingly, item 3 was excluded from the analysis and Confirmatory Factor Analysis was repeated. Analysis results showed that the fit indices improved and reached an acceptable level (χ^2 =35.367; p = .082, df=25, χ^2/df= 1.414, CFI = .900, RMSEA = .046 and SRMR= .058). In several studies, item 3 had low factor loadings, too (e.g., Karwowski, 2014; Zhou et al., 2020). However, even though the factor loading was low, the factor significantly loaded on its designated factor, which is Growth Mindset. In this vein, it was decided not the exclude the item. Expert opinion was sought, and the wording of the item was changed. Data were

collected from a new sample with the new version of the item, and Confirmatory Factor Analysis was repeated for this sample.

For the second sample, again, one-factor solution yielded unacceptable fit indices ($\chi2$ = 189,614; p = .000, df=35, $\chi2$/df= 5,418, CFI = .882, RMSEA = .090 and SRMR= .0653). On the other hand, the two-factor solution yielded acceptable fit with the data ($\chi2$ = 69,750; p = .000, df=34, $\chi2$/df= 1.934, CFI = .973, RMSEA = .044 and SRMR= .035). These results confirmed the two-factor structure of the Turkish version of the scale.

For discriminative validity of the scale, mean scores of the upper group (27%) and the lower group (27%) were compared via t-test. A statistically significant difference was found between the upper group and lower group averages for both growth mindset, t (292) = -34.13, p < .001 and for fixed mindset, t (291) = -42.21, p < .001.

Reliability

The internal consistency coefficient was calculated as .67 for the Growth Creative Mindset and .80 for the Fixed Creative Mindset. These values show both scales were reliable. Further, to examine whether the items exemplify similar characteristics, item-total score correlations were examined for both sub-scales. All correlation values are above .30. This result shows that all the items were compatible with each other within the subscales (Büyüköztürk, 2012).

Pearson Product Moments Correlation Coefficients were calculated to examine the relationship between the two sub-scales. A negative and moderately significant relationship was found between two mindsets (r = -.48, t = 25.59, p < 0.001) showing that these dimensions are related but independent of each other.

4. Discussion

With this study, the two-factor solution of the Creative Mindset Scale was confirmed in the Turkish sample has been confirmed. This result is compatible with the results for the Polish samples (Karwowski, 2014; Karwowski et al., 2019), Chinese samples (Zhou et al., 2020), USA samples (Hass et al., 2016; Paek and Sumners, 2019), and the German sample (Tang et al., 2019). At the same time, like the Polish, Chinese, English, and German versions of the measurement tool, a negative and moderately significant relationship was found between the developing and fixed creative mindset factors in this study. At the same time, the reliability coefficients are compatible with the original study and other adaptation studies. Both the presence of the 2-factor structure and the negative correlation between them show that these two features are related to each other. However, the fact that this negative relationship is lower than expected (r=-.48) indicates that the dimensions of growth and fixed creative mindset are also independent of each other. These results showed that Growth and Fixed mindsets are not two ends of the same continuum and it's possible that individuals can endorse both fixed and growth creative mindsets at the same time, as well as have neither mindset nor a combination of fixed and growth.

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