

# Boredom Proneness and Creative Achievement: Does Epistemic Curiosity Explain this Link?

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## Abstract

Boredom, as a discrete emotion, has usually been understood as a potentially maladaptive affective state. However, recent studies suggest that boredom – and the individuals prone to experiencing this emotion, may instead be more creative. This correlational study examines if the tendency to experience boredom (i.e. boredom proneness) is associated with creative achievement via deprivation-type epistemic curiosity. It is proposed that boredom proneness is positively associated with creative achievement and deprivation type curiosity, and that deprivation-type epistemic curiosity partially mediates the relationship between boredom proneness and creative achievement. Ninety (90) undergraduate psychology students participated in this study, providing responses to the Boredom Proneness Scale, Creative Achievement Questionnaire, and Deprivation-Type Epistemic Curiosity Scale. Results from the correlational analyses showed that epistemic curiosity did not mediate the boredom proneness-creative achievement link. However, epistemic curiosity was found to be significantly associated with creative achievement in terms of scientific achievement. Results of the present study suggest that epistemic curiosity is associated with achievements in relation to scientific inquiry among students of the psychological sciences. Implications are discussed in light of the current study's findings in relation to emotion theory and the teaching and learning of science.

## Literature Review and Theoretical Framework

### Past Research

- Experiments found that boring activities lead to more creativity in creative tasks (Mann & Cadman, 2014; Gasper & Middlewood, 2014).
- A survey on high school students shows levels of boredom is significantly and positively related with epistemic curiosity (Eren & Coskun, 2016).
- Trait boredom is a predictor of deprivation-type epistemic curiosity, but not interest-type epistemic curiosity (Hunter et al., 2016).

### Theoretical Framework

- Boredom boosts creativity by eliciting desires for novel experiences which spark associative creativity (Mann & Cadman, 2014; Gasper & Middlewood, 2014), suggesting boredom proneness might lead to more creative achievements.
- The desire to escape present unstimulating circumstances by boredom prone individuals predisposes them to want to avoid the state of not-knowing, or deprivation-type epistemic curiosity (Hunter et al., 2016).
- Curiosity motivates individuals to behave and process information in fresh ways while being immersed in the creative process (Kashdan & Silvia, 2009).

**Aim:** To examine if deprivation-type epistemic curiosity mediates the relationship between boredom proneness and creative achievement.

**H1:** There is a positive relationship between boredom proneness and creative achievement.

**H2:** Boredom proneness will be positively related to deprivation-type epistemic curiosity.

**H3:** Deprivation-type epistemic curiosity will partially mediate the relationship between boredom proneness and creative achievement

## Method

A cross-sectional non-experimental correlational study was conducted amongst 90 psychology undergraduates in Malaysia who were at least 18 years of age.

Measures used:

- Deprivation-type Epistemic Curiosity:** 5-item Deprivation-Type Epistemic Curiosity Scale (ECD) (Litman, 2008)
- Boredom Proneness:** 28-items Boredom Proneness Scale (Vodanovich & Kass, 1990).
- Creative Achievement:** 80-items Creative Achievement Questionnaire (CAQ) which can be further studied as three subfactors: Scientific Achievement, Performing Achievement, and Expressive Achievement (Carson, Peterson, & Higgins, 2005)

## Analyses and Results

- Correlation analyses were run across all four continuous variables to test the first hypothesis.

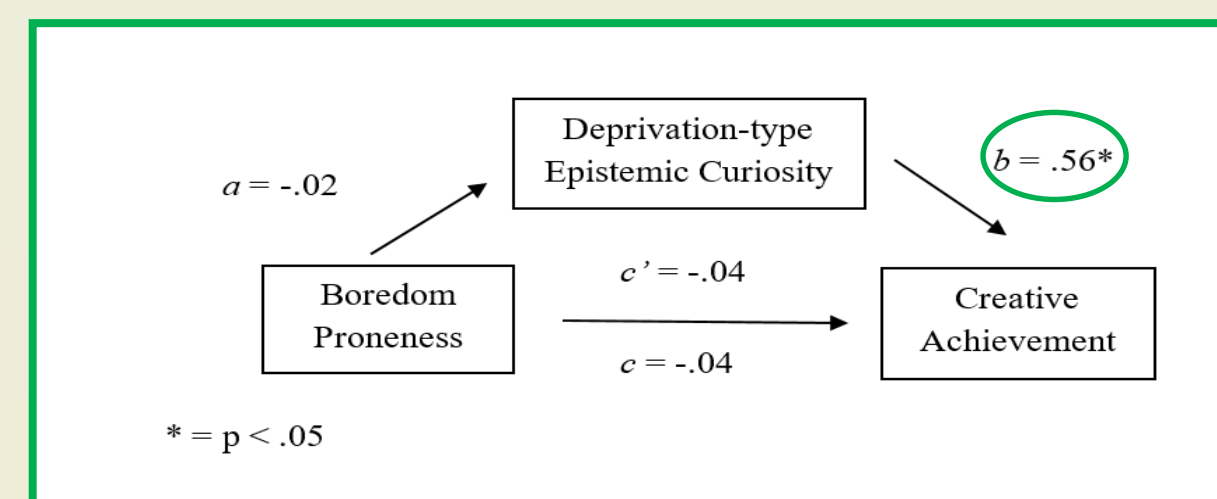
Measure	M	SD	1	2	3
1. Boredom Proneness	109.58	15.01	.74	-	-
2. Creative Achievement	7.74	5.75	-.12	.61	-
3. Deprivation-type Epistemic Curiosity	14.82	2.47	-.09	.25*	.69

\*Deprivation-type epistemic curiosity significantly correlates with creative achievement,  $r = -.22$ ,  $p < .05$ .

Reliability alpha for BPS and ECD is satisfactory, but CAQ is slightly unsatisfactory.

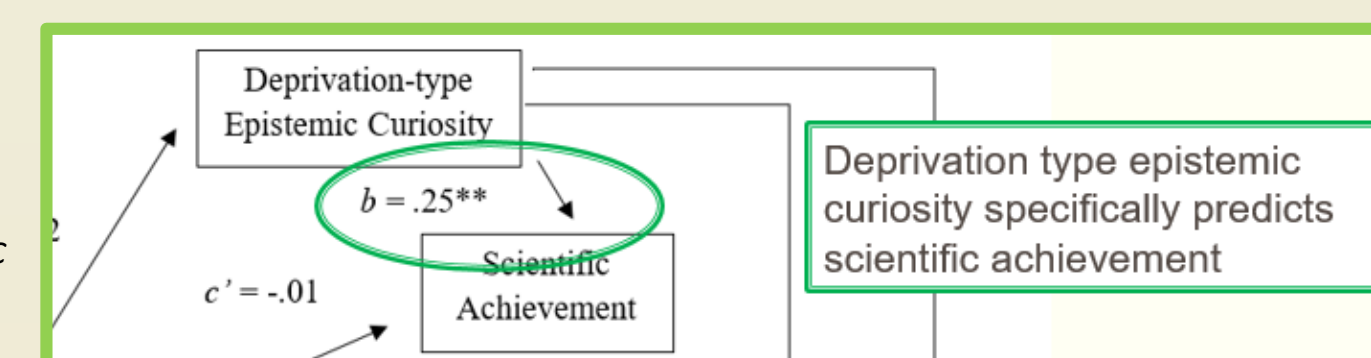
**Figure 1:** Descriptive Statistics, Reliability Statistics, and Pearson Product-Moment Correlations of Boredom Proneness, Creative Achievement, and Deprivation-type Epistemic Curiosity.

- Mediation analysis was run using boredom proneness as the predictor, creative achievement as the criterion, and deprivation-type epistemic curiosity as the mediator.
- Later on, creative achievements are further analysed as Scientific Achievement, Performing Achievement, and Expressive Achievement



**Figure 2:** Mediation model of Deprivation-type Epistemic Curiosity on the relationship between Boredom Proneness and Creative Achievement.

**Figure 3:** Post Hoc analyses shows Deprivation-type Epistemic Curiosity specifically predicts Scientific Achievement.



## Discussion

### All hypotheses were not supported

- Past research support for the links between boredom proneness and creative achievement were not supported.
- Being prone to boredom means that one is less sensitive to rewards and less capable to feel motivated as a result of prolonged activation of the behavioural inhibition system (Mercer-Lynn, Bar & Eastwood, 2014).
- Boredom proneness is not related to deprivation-type epistemic curiosity, which also contradicts findings from past studies (Hunter et al., 2016; Eren & Coskun, 2016; van Aart et al., 2010)
- Past studies were based on the state of boredom, not boredom proneness.
- The present research suggests that boredom proneness alone might be symptomatic of a cycle of the self being trapped in unengaging activities and not able to engage meaningfully with the external world, resulting in an impaired ability to be motivated.

### Other Findings: Deprivation-type epistemic curiosity linked with scientific achievements (Inventions, Scientific Discovery, Culinary Arts)

- These domains involve creative processes like finding novel uses for everyday items, inventing an item, solving scientific problems, and experimenting with recipes, which is primarily unique only to these domains.
- Having a thirst for knowledge (Litman, 2008) motivates one to solve problems, create items, and experiment with different options, but not beyond these activities.
- Epistemic curiosity not necessarily a precondition for creativity in general (Kashdan & Fincham, 2002), but specifically for creativity that is formed on discovery and exploration.

## Conclusion

Results of the present study suggest that epistemic curiosity is associated with achievements in relation to scientific inquiry and experimentation among students of the psychological sciences. Educational institutions with an agenda of instilling greater scientific capacities in students or academic staff can benefit from the present study.

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