

## Flow Links Curiosity and Creativity: The Mediating Role of Flow

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**Abstract :** Introduction: Curiosity is a positive emotion and motivational state that consists of the desire to know. Curiosity consists of several related dimensions, including a desire for exploration, deprivation sensitivity, and stress tolerance. Creativity involves generating novel and valuable ideas or products. How curiosity may prompt greater creativity remains to be investigated. The phenomena of flow may link curiosity and creativity. Flow is characterized by intense concentration and absorption and gives rise to optimal performance. Objective of Study: The objective of the present study was to investigate whether the phenomenon of flow may link curiosity with creativity. Methods and Design: Fifty-seven individuals from Australia (45 women and 12 men, mean age of 35.33, SD=9.4) participated. Participants were asked to design a program encouraging residents in a local community to conserve water and to record the elements of their program in writing. Participants were then asked to rate their experience as they developed and wrote about their program. Participants rated their experience on the Dimensional Curiosity Measure sub-scales assessing the exploration, deprivation sensitivity, and stress tolerance facets of curiosity, and the Flow Short Scale. Reliability of the measures as assessed by Cronbach's alpha was as follows: Exploration Curiosity =.92, Deprivation Sensitivity Curiosity =.66, Stress Tolerance Curiosity =.93, and Flow=.96. Two raters independently coded each participant's water conservation program description on creativity. The mixed-model intraclass correlation coefficient for the two sets of ratings was .73. The mean of the two ratings produced the final creativity score for each participant. Results: During the experience of designing the program, all three types of curiosity were significantly associated with the flow. Pearson r correlations were as follows: Exploration Curiosity and flow,  $r = .68$  (higher Exploration Curiosity was associated with more flow); Deprivation Sensitivity Curiosity and flow,  $r = .39$  (higher Deprivation Sensitivity Curiosity was associated with more flow); and Stress Tolerance Curiosity and flow,  $r = .44$  (more stress tolerance in relation to novelty and exploration was associated with more flow). Greater experience of flow was significantly associated with greater creativity in designing the water conservation program,  $r = .39$ . The associations between dimensions of curiosity and creativity did not reach significance. Even though the direct relationships between dimensions of curiosity and creativity were not significant, indirect relationships through the mediating effect of the experience of flow between dimensions of curiosity and creativity were significant. Mediation analysis using PROCESS showed that flow linked Exploration Curiosity with creativity, standardized beta=.23, 95%CI [.02,.25] for the indirect effect; Deprivation Sensitivity Curiosity with creativity, standardized beta=.14, 95%CI [.04,.29] for the indirect effect; and Stress Tolerance Curiosity with creativity, standardized beta=.13, 95%CI [.02,.27] for the indirect effect. Conclusions: When engaging in an activity, higher levels of curiosity are associated with greater flow. More flow is associated with higher levels of creativity. Programs intended to increase flow or creativity might build on these findings and also explore causal relationships.

**Keywords :** creativity, curiosity, flow, motivation

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