ABSTRACT

TITLE:	Therapeutic Geology: The Effect of Geologic Mapping on At-Risk and Underprivileged Youth
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ABSTRACT: In the summer of 2011, a study was done to test whether geologic mapping can alleviate depression and anxiety and improve spatial awareness in a population of at-risk youth. Opportunity School in Colorado Springs, a school which houses a population of low socioeconomic students, allowed for the study to be conducted during the last period of four school days. The importance for this study stems from the arise of Nature Deficit Disorder among today's youth. Children are not exposed to or taught to understand the nature around them. A pre/post test experimental model was used to evaluate the before and after levels of depression, anxiety, and spatial awareness. These levels were determined using a three-part questionnaire, each part focusing on one of the dependent variables (depression, anxiety, spatial awareness). Following the pretest, students were taught the basics of geologic mapping. On the first day, students were taught Pace and Compass Mapping techniques. The second day, students were responsible for mapping an "Urban Grid". The last day of activities, students were confined to the indoors due to bad weather. Inside, students participated in games aimed at spatial learning. Following these three days of activities, students retook the initial questionnaire and then were allowed to debrief from the week. Results from the pre/post testing showed significant change in depression ($t(10) = 2.75$, $p < 0.02$). Moderate significance in anxiety ($t(10) = 2.17$, $p < 0.05$), and insignificant change in spatial awareness ($t(10) = -0.90$, $p > 0.05$). While this data shows positive changes for depression and anxiety, the lack of change in spatial awareness may be due to other factors (i.e. type of testing). However, due to outside factors, such as home life, weather, and the approach of the end of the school year, the positive changes observed may not be as strongly correlated with the mapping program as it would be had there been a control group. Further research and studies may show stronger correlations.