

1145-L1-2137 **Debasmita Basu*** (basud2@montclair.edu), basud2@montclair.edu, and **Nicole Panorkou** (panorkoun@montclair.edu), panorkoun@montclair.edu. *Developing Students' consciousness about Greenhouse Effect through Dynamic Mathematical Activities.*

This study focuses on the role of critical mathematics literacy (Frankenstein, 1990) to help students examine the socio-political issues of the greenhouse effect by analyzing and identifying patterns in mathematical data and graphs. Although most of the essential information about the greenhouse effect in news media and weather reports is expressed in the form of graphs, the interpretation of such graphs is challenging for students. Students often focus on the shape of the graph, overlooking the covariational relationship between the concerned quantities (Monk & Nemirovsky, 1994). To address this issue, in this study I developed a set of mathematical dynamic modeling tasks in NetLogo (Wilensky, 1999) and implemented them in two middle school classrooms. The results of the study show that the dynamic nature of the tasks enabled students to identify the covariational relationships between the quantities that affect the greenhouse effect, such as identifying the covariational relationship between carbon-dioxide and air temperature, and carbon-dioxide and height of sea level. Identifying these mathematical relationships developed within students a critical consciousness about the causes and consequences of greenhouse effect. (Received September 24, 2018)