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Achievements of Gymnasium Students in Montenegro on Electric Circuit Test

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Abstract. Electric circuits are an important element of physics class. However, many students leave secondary school without having an adequate conceptual understanding of simple circuits. Voltage in particular is a difficult concept since students understand voltage as a property of the electric current. Gymnasium students in Montenegro did test which contained problems of understanding concepts of electrical current. Percentage of students who understand a concept of current is relatively high, but percentage of students who succeed to deal with voltage concept is decreasing rapidly. This investigation reveal the problems that students have on microscopic level about the charges in battery. Since great fraction of students assume that only battery determines the value of current same as the charges from battery flow to wire, it implies that more time, more lessons, should be devoted to this area. Those findings should be useful for teaching community in creating pathways that will replace those wrong mental models or ideas with scientific ones.

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