We investigate algorithms for vertex colorings, which are local in the following sense. Let \( G \) be a simple finite graph of order \( n \). Each vertex of \( G \) is associated with an agent, who decides for a color out of the set \( \{1, \ldots, k\} \). The global structure of \( G \) is unknown to any of the vertices. Moreover, each agent may observe the colors chosen by the neighboring vertices, but there is no other means of communication between the agents. Now the graph is colored in rounds. In each round every vertex chooses a color. We look for algorithms, that guarantee a stable proper coloring after a finite number of rounds, where stable means that the coloring is not changed in the following rounds. The main result will be an algorithm that guarantees with probability \( 1 - \delta \) a stable proper coloring with \( k \) colors within \( O(n \log \frac{1}{\delta}) \) rounds, where \( k - 1 \) is any constant upper bound on the coloring number \( \text{col}(G) \).

**Keywords:** graph coloring, local algorithms