Remediation and metaphor: gamifying teaching programming

Desirée MAESTRI,1 Luciane Maria FADEL2
Programa de Pós-Graduação em Engenharia e Gestão do Conhecimento,
Universidade Federal de Santa Catarina, Florianópolis, SC, Brasil
Email (1) maestri.desiree@gmail.com
Email (2) luciane.fadel@ufsc.br
ORCID: 0000-0002-9198-3924

Abstract

The development of abstract thinking needed to solve complex problems is often associated with teaching programming. Most of the platforms that support this teaching are structured in a rigid form and with a coherent interface to the old logic patterns associated with programming. Thus, it is common for beginners in the programming study to feel uncomfortable with such sobriety. This paper argues that remediating games through structural metaphor can make programming teaching environments fun without losing focus on logical intelligence. A close reading of the App Inventor platform developed this argument. This reading was carried out using the analytical lenses of remediation and metaphor. The findings indicate that App Inventor remediates a puzzle game through structural metaphor. The blocks that fit together (use of pieces) and are joined from a set of rules indicate the elements of games used. Both (pieces and rules) are the re-enactment of the puzzle. The similarity to a puzzle encourages experimentation because the metaphor was built into the user’s conceptual system. In addition, the structure of a game allows errors to be made. Experimentation and error provide the basis for learning because they support agency. Thus, structural metaphor evokes agency through mastering choice and mastering narrative. Agency, in turn, supports logical intelligence.

Keywords: Remediation, gamification, teaching programming, agency.