Student-written text at different levels of conceptual abstraction represented as a complex network

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The paper describes an architecture for representing student writing as a complex network in a pedagogically useful way. Students in our test course were expected to submit weekly blog posts about these readings and create and apply descriptive keywords (which functioned as conceptual categories) to each other's writings. These descriptive keywords functioned as conceptual categories guiding their work in the course. We developed digital tools that made use of these keywords that they applied to each other's writings, in creating networks representing a collective meaning for the work the students produced. This network representation provided an opportunity for each student to critically reflect on the relationships between these conceptual categories and writing, both his/her own and others'. Additionally, we had students construct a separate network as a concept map, which encoded two different kinds of relationships between meronymic (part-of) and hyponymic (is-a) relationships. These relationships, encoded through the concept map, afford a way to represent any complex network of student writing at different levels of abstraction. The paper will speculate on the philosophical question what it might mean to symbolically represent cultural practices (such as writing) as a complex network when the representation is additionally mediated by another level of subjective cultural practice (in the form of the multi-level concept map), and what, if anything, any observed regularities (such as small-world or power-law regularities) could signify under such circumstances. The paper will also discuss alternative approaches (such as automated, text-mining based methods) for conceptual category generation, which may lead to a different answer to the above question.