Despite numerous calls for increased technological innovation in library systems (Rockman, 2001), very little current research is being done using Java. Partly, this is because Java is considered an old-fashioned language (Tennant, 2000). However, multiple studies have pointed out the usefulness and flexibility of Java (Gritzalis, Aggelis, & Spinellis, 1999) as well as specific uses of Java by library programmers for its multipurpose nature (Hahn & Ryckman, 2012).

Research on the use of Java in the Library and Information Science (LIS) field is mostly focused around two central uses, one educational and one organizational. Neither use fits precisely what my project focuses on, but both uses are tangentially related to aspects of my project. However, both have provided unique and instructive resources.

Much of the research focusing on education is instructional, demonstrating effective methods for teaching Java to students. While I am creating an educational tool, information on how best to educate is relevant, but the difference between Java instruction and information literacy instruction make much of this information not as relevant to my purposes. My focus on self-directed learners also has several mirrors in LIS literature with regards to Java, but again, much of the literature is focused on how to teach the Java itself, rather than how to use Java to teach.

One particular article stands out as relevant because of its approach using game-based learning techniques, which I think can be effectively applied to many different learning scenarios, including my information literacy instructional purposes (Wang, Li, & Tzeng, 2014). Similarly, an article about developing interactive e-books for children’s storytime uses similar game-based learning concepts for teaching basic literacy (Borgstrom, 2011). I believe this model will translate well into developing information literacy skills for both youth and self-directed adult learners.

The organizational research I have found is mostly ways in which Java is being used in libraries for database query and information retrieval systems. (Jansons & Cook, 2002) (Milosavljevic & Tesendic, 2010) This user-end perspective is illuminating, and in fact represents much of the multi-purpose nature of Java that inspired me to learn this particular programming language. However, the usefulness of these methodologies is limited due to the difference between information retrieval and information literacy instruction.

One other potentially relevant and useful article I came across is one detailing the use of simulations to mimic cognitive, visual and other impairments (Giakoumis, Kaklanis, Votis, & Tzovaras, (2013). Such tools may be useful during initial usability testing for my project. Since my focus is on self-directed learners for whom traditional higher education is out of reach, many of which may be affected by cognitive and other impairments.

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