Annotated Bibliography for

The Impact of Digital Literacy on Instructional Design and Learning Strategies

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References

Anthonysamy, L., Koo, A. C., & Hew, S. H. (2020). Self-regulated learning strategies in higher education: Fostering digital literacy for sustainable lifelong learning. *Education and Information Technologies*, *25*(4), 2393–2414. https://doi.org/10.1007/s10639-020-10201-8

This study analyzed the relationship between self-regulated learning strategies and digital literacy within blended classrooms. The authors are faculty at a private multimedia university in Malaysia and write extensively on the topics of digital learning and instructional design. The qualitative study was based on a survey of full-time undergraduate students in information technology programs in Malaysian private universities. Four domains were tested in the experiment: cognitive engagement, metacognitive knowledge, resource management, and motivational beliefs. The study results showed a significant positive relationship between the last three domains and digital literacy, but cognitive engagement (concentration) was not revealed to be contingent on a student's digital literacy. The results imply that self-regulated learning strategies can be used to improve a student's digital literacy competency and gain skills applicable to the professional world. Unfortunately, the scope of the study was so limited (Malaysia, private schools, undergraduates), that the observations may not be applicable to more diverse groups of learners.

Barzilai, S., & Ka'adan, I. (2016). Learning to integrate divergent information sources: The interplay of epistemic cognition and epistemic metacognition. *Metacognition and Learning*, *12*(2), 193–232. https://doi.org/10.1007/s11409-016-9165-7

The lead author for this paper, Dr. Barzilai, has a background in digital literacy and epistemic thinking and has written extensively on the integration of these subjects. This study examined how well Arab Israeli 9th graders integrated multiple, divergent

information sources in a writing assignment after receiving various levels of scaffolding support from their teachers. Three classes were used to compare differentiated methods of no scaffolding, strategic (limited building block support) scaffolding, and metastrategic (highly abstract building block support) scaffolding. Results showed that students' digital literacy increased over time based on how complex the scaffolding support they received. The strategic group made significant improvements in their ability to integrate multiple, diverse information sources into cogent arguments. These results imply there is potentially great value in developing instructional design strategies that reinforce the value of discriminating among numerous information sources to determine value and breadth of understanding. Additionally, the study highlighted the value in developing scaffolding strategies to increase student confidence in managing the complexities of the digital information environment.

Kim, K. T. (2019). The Structural relationship among digital literacy, learning strategies, and core competencies among South Korean college students. *Educational Sciences: Theory & Practice*, *19*(2), 3–21. https://doi.org/10.12738/estp.2019.2.001

In this study, Kim explored the structural relationship between digital literacy, core competencies, and the learning strategies necessary to produce college graduates that can thrive in a 21st century information society. While there was a positive correlation between digital literacy and core competencies, the study did not discriminate between competencies to identify if any were more affected than another. Kim is careful to highlight that the study was designed to explore relationships of technology and competencies, while not providing any qualitative findings on the impact of those relationships. This study's significance is in its analysis of how learning strategies may act as critical factors in the development of core competencies by using information and educational technologies when students are in the classroom, engaged in independent

study, or participating in group learning. The study results showed clear implications that colleges should develop digital literacy tools that emphasize learning technologies to reinforce critical and creative thinking, emotional self-regulation, and collaboration.

O'Brien, K. L., Forte, M., Mackey, T. P., & Jacobson, T. E. (2017). Metaliteracy as pedagogical framework for learner-centered design in three MOOC platforms: Connectivist, Coursera and Canvas. *Open Praxis*, *9*(3), 267–286. https://doi.org/10.5944/openpraxis.9.3.553

This article analyzes metaliteracy as a pedagogical model across three separate Massive Open Online Course (MOOC) platforms designed to enhance self-paced learning. The authors describe metaliteracy as a reframing of information literacy where the student actively participates in the creation of digital content. This team of educators are members of the Metaliteracy Learning Collaborative and have developed an alternative view of the MOOC that is more student-centered to better align with critical components of metaliteracy. As opposed to the dominant MOOC models that are automated and lecture-based, the three example platforms (Connectivist, Coursera, and Canvas) are used to provide an environment more conducive to self-regulation. Learners assumed various roles (participant, contributor, teacher) within the courses, demonstrating that the more decentralized nature of the platforms allowed for more organic collaboration as learners chose paths that better aligned with their personal goals. The results of the MOOC experiments show the value of allowing students to participate more in driving content as part of the learning process, thereby gaining agency in their own education.

Šorgo, A., Bartol, T., Dolničar, D., & Boh Podgornik, B. (2016). Attributes of digital natives as predictors of information literacy in higher education. *British Journal of Educational Technology*, *48*(3), 749–767. https://doi.org/10.1111/bjet.12451

Šorgo *et al.* developed this study to identify and describe the key variables affecting information competency of students who are reportedly ‘digital natives.’ The authors are university educators who believe students should have the opportunity to improve their digital literacy to better compete in the 21st century workforce. A key assumption is that regular users of digital and information devices are more prepared to succeed in a world driven by data and technology. The results show that while there is a positive correlation between technology ownership and user confidence, those factors alone do not directly predict gains in learning core competencies required to achieve adequate digital literacy. A key insight was that for many students, experience with information communication technology was primarily for a social purpose, developing quite different literacy competencies. From these results, the authors conclude that information literacy must be explicitly taught and experienced through courses designed to develop critical thinking and professional collaboration. Competencies developed from courses grounded in internet-based research and group projects are two examples of learning design that can increase a student’s information literacy.