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Cognitive productivity: Can cognitive science improve how knowledge workers' use IT to learn from source material?

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Abstract: Society depends on knowledge workers (KWs) to identify, characterize and propose solutions to the many significant challenges it faces. KWs contend with ever changing information technology (IT) and bemoan "information overload." They commonly consult literature (e.g., Allen, 2001) and use productivity software that, regrettably, fail to leverage key findings in cognitive science. Can cognitive science help KWs process information and learn with technology? Yes, provided we directly address their problems. We present the Cognitive Productivity Research Project (Beaudoin, 2014) which is: characterizing information processing (IP) challenges KWs face (e.g., cognitive illusions, missing concepts and learning strategies); exploring gaps in cognitive science, including under-explored concepts (e.g., meta-effectiveness, monitors) and phenomena (e.g., KWs' self-regulated learning when using IT tools to draw on source material); marshaling an IP architecture and principles to address these issues; and proposing practical IP strategies for KWs that emphasize meta-documentation and productive practice.