REL Appalachia Ask A REL Response

College and Career Readiness, Data Use, Research Tools
September 2019

Question:

How is self-directed learning defined and operationalized in the context of career readiness and workforce development?

Response:

Thank you for your request to our REL Reference Desk regarding evidence-based information about self-directed or self-paced learning in the context of career readiness and workforce development. Ask A REL is a collaborative reference desk service provided by the 10 Regional Educational Laboratories (RELs) that, by design, functions much like a technical reference library. Ask A REL provides references, referrals, and brief responses in the form of citations in response to questions about available education research.

Following an established REL Appalachia research protocol, we searched for peer-reviewed articles and other research reports on self-directed or self-paced learning. We focused on identifying resources that specifically addressed how self-directed or self-paced learning is used to support career readiness and workforce development. The sources included ERIC and other federally funded databases and organizations, research institutions, academic research databases, and general Internet search engines. For more details, please see the methods section at the end of this document.

The research team did not evaluate the quality of the resources provided in this response; we offer them only for your reference. Also, the search included the most commonly used research databases and search engines to produce the references presented here, but the references are not necessarily comprehensive, and other relevant references and resources may exist. References are listed in alphabetical order, not necessarily in order of relevance.

References

Fiel, J., Lawless, K. A., & Brown, S. W. (2018). Timing matters: Approaches for measuring and visualizing behaviours of timing and spacing of work in self-paced online teacher professional development courses. *Journal of Learning Analytics, 5*(1), 25–40. Retrieved from https://eric.ed.gov/?id=EJ1176040

From the abstract: "One feature of self-paced online courses is greater learner control over the timing of their work in a course. However, the greater timing flexibility that learners enjoy in such environments may play a different role in the learning process than has been previously observed in formal online or face-to-face courses. As such, the study of work timing merits further investigation. Toward this goal, this study forwards two measures that represent the timing of coursework: (1) the timing index, or the degree to which a participant completes 50% of their work, and (2) the spacing count, the frequency of work performed across the course timeframe. In this study, the authors demonstrate the use of these measures from a data set of 42 U.S. middle-school teachers who participated in a self-paced, online professional development course to support teacher implementation of a new blended-learning curriculum. Using the two measures, the authors identify timing behaviours of participants and examine the effects that timing has on teacher self-efficacy after completing the course. The two measures and visualizations demonstrated in this paper yield useful individual-level variables for course timing that can be used for further study on the effects on learning outcomes."

Fontana, R. P., Milligan, C., Littlejohn, A., & Margaryan, A. (2015). Measuring self-regulated learning in the workplace. *International Journal of Training and Development, 19*(1), 32–52. Abstract retrieved from https://figshare.com/articles/Measuring_Self-regulated_learning_in_the_workplace_/4110183

From the abstract: "In knowledge-intensive industries, the workplace has become a key locus of learning. To perform effectively, knowledge workers must be able to take responsibility for their own developmental needs, and in particular, to regulate their own learning. This paper describes the construction and validation of an instrument (the Self-Regulated Learning at Work Questionnaire) designed to provide a measure of self-regulated learning (SRL) behaviour in the workplace. The instrument has been validated through a pilot study with a cohort of 170 knowledge workers from the finance industry. Results indicate that the five scales of the instrument are reliable and valid, testing a broad range of sub-processes of SRL. The instrument can be used to identify knowledge workers who demonstrate different levels of SRL in workplace contexts for further exploration through qualitative studies and could also provide the basis of professional development tools designed to explore opportunities for self-regulation of learning in the workplace."

Jacobs, R. L., & Park, Y. (2009). A proposed conceptual framework of workplace learning: Implications for theory development and research in human resource development. *Human Resource Development Review, 8*(2), 133–150. Abstract retrieved from https://eric.ed.gov/?id=EJ845476; full text available at https://www.researchgate.net/publication/275714549_A_proposed_conceptual_framework_of_workplace_learning

From the abstract: "There is common agreement about the importance of workplace learning. Discussions about the topic have mostly focused on two major components: formal training and informal learning. These components have become the defining features of workplace learning. This article proposes a conceptual framework of workplace

learning that is comprised of the interaction of three variables: 1) the location of the learning; 2) the extent of planning that has been invested in developing and delivering the learning experiences; and, 3) the role of the trainer, facilitator, or others during the learning process. The need for the proposed framework stems from two concerns. First, formal training and informal learning represent incompatible levels of discourse, making it difficult to have a cohesive understanding of workplace learning. Second, workplace learning appears to exclude a large segment of HRD practice, particularly when formal training programs occur in the work setting."

Panadero, E. (2017). A review of self-regulated learning: Six models and four directions for research. *Frontiers in Psychology, 8*(422), 1–28. Retrieved from https://www.frontiersin.org/articles/10.3389/fpsyg.2017.00422/full

From the abstract: "Self-regulated learning (SRL) includes the cognitive, metacognitive, behavioral, motivational, and emotional/affective aspects of learning. It is, therefore, an extraordinary umbrella under which a considerable number of variables that influence learning (e.g., self-efficacy, volition, cognitive strategies) are studied within a comprehensive and holistic approach. For that reason, SRL has become one of the most important areas of research within educational psychology. In this paper, six models of SRL are analyzed and compared; that is, Zimmerman; Boekaerts; Winne and Hadwin; Pintrich; Efklides; and Hadwin, Järvelä and Miller. First, each model is explored in detail in the following aspects: (a) history and development, (b) description of the model (including the model figures), (c) empirical support, and (d) instruments constructed based on the model. Then, the models are compared in a number of aspects: (a) citations, (b) phases and subprocesses, (c) how they conceptualize (meta)cognition, motivation and emotion, (d) top-down/bottom-up, (e) automaticity, and (f) context. In the discussion, the empirical evidence from the existing SRL meta-analyses is examined and implications for education are extracted. Further, four future lines of research are proposed. The review reaches two main conclusions. First, the SRL models form an integrative and coherent framework from which to conduct research and on which students can be taught to be more strategic and successful. Second, based on the available meta-analytic evidence, there are differential effects of SRL models in light of differences in students' developmental stages or educational levels. Thus, scholars and teachers need to start applying these differential effects of the SRL models and theories to enhance students' learning and SRL skills."

Stubbe, H. E., & Theunissen, N. C. M. (2008). Self-directed adult learning in a ubiquitous learning environment: A meta-review. *Proceedings of Special Track on Technology Support for Self-Organised Learners*. Retrieved from https://pdfs.semanticscholar.org/d92a/9e61ac240a41a2a84e9ead1a482157215a52.pdf

From the abstract: "In our rapidly changing technological society, formal training alone cannot meet the need for development of working individuals. Self-directed learning is seen as a solution for adult learners to keep up with these changes. Therefore, the aim of this paper is to identify the essential elements of self-directed learning that should be integrated into a ubiquitous learning environment for learning in the workplace. To achieve

this, a systematic review on self-directed learning was performed. This produced five elements that support self-directed learning: learner control, self-regulating learning strategies, reflection, interaction with the social world and interaction with the physical world. This study shows that the characteristics of adult learning, as well as those of ubiquitous learning, match with the elements that support self-directed learning. Still, in the development of ubiquitous learning environments some elements of self-directed learning are not used yet. Therefore, the fields of research that focus on learning (e.g. adult learning, self-directed learning) and those that focus on learning technology (e.g. ubiquitous learning) should work towards a more integrated approach in the design of learning environments."

Yarnall, L., Freed, M., & Malone, N. (2019). Self-regulated learning. In J. J. Walcutt & S. Schatz (Eds.), *Modernizing learning: Building the future learning ecosystem*. Washington, DC: Government Publishing Office. Retrieved from https://www.researchgate.net/publication/333601547_Self-Regulated_Learning

From the chapter: "There's a growing need for continuous modes of lifelong learning to cope with the acceleration of knowledge production and flow aided by new technologies. In response, both schools and workplaces are progressing towards more independent, learner-centered forms of education and development. Potential support for lifelong learning comes from improvements in AI technologies that permit more personalized learning, and greater access to mobile and search technologies that provide ubiquitous access to information. In the workplace, trainers are increasingly using cloud-based software, augmented reality, and virtual reality to prepare workers, support their lifelong learning needs, and enable diverse collaboration methods. In higher education, institutions are increasingly offering online education options and providing students with information resources and communication tools to aid their independent research and collaboration. However, despite these trends, both educators and employers report challenges with this shift towards greater learner-control. For instance, some learners have difficulty taking responsibility for their own learning, and others may struggle to assimilate their diverse experiences—leading to a situation where they have increased exposure to information but reduced overall comprehension."

Additional Organizations to Consult

edX: https://www.edx.org/

From the website: "edX is the trusted platform for education and learning. Founded by Harvard and MIT, edX is home to more than 20 million learners, the majority of top-ranked universities in the world and industry-leading companies. As a global nonprofit, edX is transforming traditional education, removing the barriers of cost, location and access. Fulfilling the demand for people to learn on their own terms, edX is reimagining the possibilities of education, providing the highest-quality, stackable learning experiences including the groundbreaking MicroMasters® programs. Supporting learners at every stage, whether entering the job market, changing fields, seeking a promotion or exploring new

interests, edX delivers courses for curious minds on topics ranging from data and computer science to leadership and communications. edX is where you go to learn."

- Differences between instructor- and self-paced courses: https://edx.readthedocs.io/projects/edx-guide-for-students/en/latest/SFD_self_paced.html

iNACOL: https://www.inacol.org/

From the website: "iNACOL is a nonprofit organization with the mission to drive the transformation of education systems and accelerate the advancement of breakthrough policies and practices to ensure high-quality learning for all. We leverage the power of personalized, competency-based learning models to accelerate the shift to student-centered learning."

Methods

Keywords and Search Strings

The following keywords and search strings were used to search the reference databases and other sources:

- ("self-directed learn*" OR "self-paced learn*") AND ("career readiness" OR "workforce development" OR "professional development")

Databases and Resources

We searched ERIC, a free online library of more than 1.6 million citations of education research sponsored by the Institute of Education Sciences (IES), for relevant resources. Additionally, we searched the academic database ProQuest, Google Scholar, and the commercial search engine Google.

Reference Search and Selection Criteria

In reviewing resources, Reference Desk researchers consider—among other things—these four factors:

- Date of the publication: Searches cover information available within the last ten years, except in the case of nationally known seminal resources.
- Reference sources: IES, nationally funded, and certain other vetted sources known for strict attention to research protocols receive highest priority. Applicable resources must be publicly available online and in English.
- Methodology: The following methodological priorities/considerations guide the review and selection of the references: (a) study types—randomized controlled trials, quasi experiments, surveys, descriptive data analyses, literature reviews, policy briefs, etc., generally in this order; (b) target population, samples (representativeness of the target

population, sample size, volunteered or randomly selected), study duration, etc.; (c) limitations, generalizability of the findings and conclusions, etc.

- Existing knowledge base: Vetted resources (e.g., peer-reviewed research journals) are the primary focus, but the research base is occasionally slim or nonexistent. In those cases, the best resources available may include, for example, reports, white papers, guides, reviews in non-peer-reviewed journals, newspaper articles, interviews with content specialists, and organization websites.

Resources included in this document were last accessed on September 3, 2019. URLs, descriptions, and content included here were current at that time.

This memorandum is one in a series of quick-turnaround responses to specific questions posed by education stakeholders in the Appalachia region (Kentucky, Tennessee, Virginia, and West Virginia), which is served by the Regional Educational Laboratory Appalachia (REL AP) at SRI International. This Ask A REL response was developed by REL AP under Contract ED-IES-17-C-0004 from the U.S. Department of Education, Institute of Education Sciences, administered by SRI International. The content does not necessarily reflect the views or policies of IES or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. government.