

60-Second SoTL

Episode 17 – Reflection and Authentic Learning

(Piano Music)

00:03

Jessie L. Moore:

What can reflection on authentic tasks illuminate about student learning? That's the focus of this week's **60-second SoTL from Elon University's Center for Engaged Learning**. I'm Jessie Moore.

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In "Linking Reflective and Authentic Learning: Encouraging Deeper Learning Experiences in a First-Year Civil Engineering Module at a University in South Africa," published in the open access journal, *SoTL in the South*, Johannes Bester and Eric Pretorius analyze student reflections on an authentic learning task. While their analysis does not enable the researchers or readers to draw conclusions about learning outcomes associated with reflection, students' reflective writings do offer a window into their perceptions of and outcomes from authentic learning.

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The researchers focused on an authentic learning experience in a first-year, second-semester module or course in a four-year civil engineering program. Students are required to participate in an Egg Protection Device competition, using pre-packaged materials to design and manufacture a concrete device intended to protect an egg when a weight of one kilogram is dropped onto the device. The activity is sponsored by the Concrete Society of Southern Africa, and it requires students to integrate prior and new knowledge about concrete and design, while working in teams to complete their task, thereby simulating a professional work experience in civil engineering. Bester and Pretorius added reflection prompts to learn more about students' experiences with this authentic learning task.

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Students were not required to complete the reflection tasks analyzed in the study, but the course, or module, design included a session on reflection – explaining what it is and why it's important for professional engineers. Across two years of data collection with 283 students, 196 consented to participate in the authors' study, and of those 196 students, 72 – or approximately 37% - engaged in deep reflection about their learning. 78 (or 40%) engaged in what the authors describe as shallow reflections, focusing on facts and physical experiences, without clear evidence that the students attempted to make meaning of their own learning. 46 study participants (or 23%) did not engage in any reflection.

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Students' reflections offer insight into their development of professional and lifelong learning skills. For example, students commented on their challenges with team communication and their need to navigate conflict to collaborate on shared tasks. Students also reflected on time management strategies that worked well and on teamwork strategies they could carry forward to future settings. Students' reflections also offered a window into their understanding of course concepts as they grappled with why designs didn't work and what they would do differently in the future.

The authors conclude that reflection can enhance authentic learning tasks by helping students engage in both reflection-in-action, Schön's term for students' in-the-moment reflection to complete the task, and reflection-on-action, Schön's term for subsequent reflection on what worked and how the experience might apply for future activities. Moreover, students' reflections suggest that the Egg Protection Device assignment, as an authentic learning task, moved students beyond recitation of memorized information to problem-solving and critical thinking to apply their knowledge in a team setting to achieve a shared goal representative of their future work.

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Although not reported in this article, it would be interesting to compare other learning outcomes for students who engaged in reflection versus those who did not. Students' reflections made some aspects of their learning visible for their lecturers, but did their engagement with reflection correlate with any learning outcomes or performance markers for the course? Hopefully the authors will pursue that analysis in a future article.

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To learn more about Bester and Pretorius's study, follow the link in our show notes to read this open access article and to review our supplemental resources for this episode.

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(Piano Music)

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Join us next week for another snapshot of recent scholarship of teaching and learning on **60-second SoTL from Elon University's Center for Engaged Learning**. Learn more about the Center at www.CenterForEngagedLearning.org.

04:11

(Piano Music)