

Does self-directed learning produce outcomes equal or superior to face-to-face, teacher-guided learning?

What is the current state of self-directed learning in education?

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A recent expansion of student-driven learning made possible by technology has enabled students to independently learn whenever and wherever they choose, without the need for face-to-face contact with an instructor. Popular initiatives have brought this type of self-directed learning into mainstream education and across all levels of health professions education. For example:

- Learners can prepare for the MCAT with online modules created via a recent partnership of the AAMC with Khan Academy.
- Practicing physicians are learning clinical reasoning and biostatistics via MOOCs (massive online open courses).

This increased emphasis on, and availability of, independent learning raises the question: Does self-directed learning yield outcomes equal or superior to face-to-face, teacher-guided learning?

What are the educational underpinnings of self-directed learning?

Self-directed learning (SDL) is an educational concept that is often referenced when discussing independent learning in contrast with teacher-guided learning. Knowles defines SDL as "a process in which individuals take initiative, with or without the help of others, in diagnosing their learning needs, formulating goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies and evaluating learning outcomes." Problem-based learning and independent student research projects have traditionally been linked with SDL. However, increasingly SDL has been tied to technology-based educational approaches such as online courses, educational apps, and e-modules.

Related concepts:

- individualized learning
- independent learning
- self-regulated learning
- student-driven education

What is the evidence that supports self-directed learning?

In general, SDL and other learner-driven educational approaches facilitated by technology are connected with benefits such as:

- increased flexibility for students and instructors
- cost-effectiveness
- efficient use of educator resources
- preferred by millennial learners

In the health professions education literature, a 2010 systematic review identified and analyzed 59 studies (8,011 learners) to determine the effectiveness of SDL approaches to impact learners'

knowledge, skills and attitudes in contrast to traditional pedagogical approaches (Murad). This review analyzed studies from across the health professions that included online (e.g., interactive e-modules) and non-online (e.g., reading materials) SDL activities. Overall the review suggests that SDL is likely to be as effective as traditional teacher-driven methods in health professions education. More specifically SDL was associated with a moderate increase in learners' knowledge and non-significant increases in the skills and attitudes of learners. Studies also demonstrated that SDL was slightly more effective when students were involved in choosing their own learning resources, such as having the option to select learning methods that they felt best suited their preferred learning style. The data also suggest that SDL may be more effective for advanced learners.

Several recent studies further investigated this topic. A UCLA study of 44 students concluded that independent, asynchronous, computer-based instruction was less effective than traditional didactic methods in terms of knowledge gained (Jordan). Similarly a study that enrolled 223 medical students compared the use of lectures, workshops and SDL online modules to teach ECG interpretation. This study concluded that students performed similarly on an ECG exam when taught via either teacher-led lectures or workshops, but their tests scores were lower when using SDL modules. Both studies recommend further research before medical educators "throw in the towel on tradition."

How can I incorporate SDL into my educational practice?

Although more research is suggested, medical educators may want to:

- Create SDL opportunities that focus on the acquisition of knowledge and avoid those that focus on learners attaining skills and attitudes.
- Consider the level of the learner when creating SDL activities with the knowledge that SDL activities may be more effective for advanced learners.
- Provide learners with SDL opportunities that enable them to self-select approaches to independently learn the material.

Questions for consideration.

- How can learners be encouraged and supported in identifying and choosing their own learning resources?
- Is SDL more appropriate for certain types of learning than face-to-face, teacher-guided learning?

References

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