Teaching Residents to Teach Themselves: Creating Self-Directed, Lifelong Learners
“Individualized Learning Plans”

Annotated Bibliography

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This article aims to analyze learning goals from pediatric residents and forms a conceptual model based on resident ILPs. The ISMART mnemonic, which highlights characteristics of meaningful resident learning goals, is developed and the statistical process leading to development is also described (ISMART stands for Important, Specific, Measureable, Accountable, Realistic and Timeline.) It includes interesting resident perspectives and examples of “good” learning goals.


This brief 3-page article describes ILPs in detail, including various different forms of ILPs. It reviews what is known about ILPs and success with pediatric residents. It contains thirty two references, as well as a nice review of future research questions.


With self-assessment and self-directed, lifelong learning becoming mainstays of the medical profession, these authors undertook a comprehensive literature review examining the utility and validity of self-assessment, including thought-provoking results and comments. No surprise that out of 20 eligible studies that gathered self and external assessments, 13 demonstrated little, no or inverse relationship between self-assessment and external indicators of performance.


This review paper is a clearly written, insightful discussion of many important factors about the manner in which physicians self regulate and improve. Self-efficacy and self-concept theory, cognition and metacognitive theory, social cognition, models of expert performance and how expertise is developed, and the concept of reflective practice are all reviewed in a literature based manner. Future research directions in this area are expanded upon at the end of the article.


This is the original article written regarding pediatric residents and ILPs that looked at handwritten (not computerized) ILPs. Results reveal that the ILPs were “helpful” in providing a framework and focus for learning. Barriers were time constraints and difficulty in producing learning goals and strategies. The mean number of goals per learning plan reviewed (n = 16) was 3.23 (range: 1-7). Authors provided a two-hour workshop to participants; faculty development focused on basic teaching and adult learning principles with a focus on promoting reflection and awareness of learning. Some of the faculty suggestions included: “start with PL-1s”, “set time aside for doing this”, and “give a specific list of specific goals per year of residency”.


An APPD special project grant facilitated this study of 46 pediatric training programs. The aim of the study was to determine whether resident or program characteristics are associated with effective self-directed learning of residents. Provides valuable information for program leadership regarding what kind of ILPs are used, who facilitates their completion, etc. They used the Kolb Learning Style Inventory and the Jefferson Lifelong Learning Scale and found that the most important factors associated with effective self directed learning were resident characteristics, not program characteristics. Important tips to make ILPs more useful included tracking of progress toward goals and developing measurable goals.


This paper describes a survey of pediatric residents and faculty at UC Davis (single institution). Attitudes, knowledge and self-perceived skills around self-assessment, self-directed learning and ILPs were explored. The study reports comments and sentiments from the residents and faculty which are quite interesting.

A pilot study at Stanford in the Internal Medicine Department. The purpose was to develop and implement a curriculum to teach physicians self-directed learning skills during inpatient wards rotations. A very good background section discusses self-directed learning. The curriculum utilized is interesting. It involves assessment, a learning resource exercise, a clinical question diary and a journal reading exercise. It is geared towards direct reflection in action type learning. No “learning plan” terminology was utilized.


This is a report on a nicely designed research project to look at implementation of a learner centered learning goal in a clerkship at Northwestern. Interestingly, the third year students rated it more favorably than the fourth year med students. The advantages of the learner-centered exercise were that there was more ability to explore topics at their own pace. They conclude that having learners develop their own learning goals is an “efficient and valuable adjunct to patient care activities in the clinical care setting”.


These two papers are written by a leader in the field of learning contracts/ILPs. The first is an excellent examination of the theoretical basis of contract learning and how it is relevant to clinical settings. As a UK physician his perspective reflects his locale, nonetheless it is a well-written summary and discussion of learner-driven learning and learning plans. The second title is an actual descriptive research paper on a process to introduce contract learning to senior house officers at a general hospital in the UK. Generally positive responses were made by the H.O. regarding the program.


This is an outstanding, albeit slightly outdated, review and discussion of the reason for the shift to continuous professional development away from older versions of CME. It discusses Pedialink very nicely and the reasoning behind the set-up of the on-line ILP for Pediatric Residents. It also discusses the proposed learning cycle of clinicians by Donald Schon.


This paper reports on a project in a descriptive manner about the implementation and evaluation of learning contracts in clinical nursing. Specifically, a rotation in mental health nursing is the setting. The guidelines for creating a learning contract were to 1) identify learning objectives, 2) propose learning strategies and resources to accomplish the objectives 3) identify evidence of accomplishment, and 4) describe the means for evaluating their performance. Some of the described benefits of the learning contracts were that their use increased learner autonomy, increased student motivation, strengthened the effectiveness of the rotation, and increased sharing among learner peers and the faculty. Some of the difficulties were that the faculty had limited time to facilitate the learner’s objectives, and lack of experience with using learning contracts.


A nice summary of why self-directed learning is a good educational strategy most likely to produce physicians prepared for lifelong learning. It reviews some of the terminology of self-directed learning and gives a good overview.


This reference provides a literature review of contract learning and an actual study involving students in the radiology science program at University of North Carolina. The depth of this contract learning is deeper than the more superficial one to two times per year individual learning plans we are required to do with our residents. It is interesting to see the barriers and benefits identified by the student users.