Promotion of Self Directed Learning in

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“Education would be so much more effective if its purpose were to ensure that by the time they leave school every boy and girl should know how much they don’t know, and be imbued with a lifelong desire to know it.”

Sir William Haley

Background Med 1-2

Integrated Pathway

- Lecture based
- Some TBL/Small Group
- Relatively passive
- Relatively structured
- Teacher centered

Independent Study Pathway

- Study independently
- Self-regulated learning
- Self-directed learning
- Flexible
- Learner centered

Why do we lecture?

- Efficient way to communicate one-to-many
- Effective for teaching difficult concepts
- Efficient way to highlight key features
- It is the way we were taught
- It is easy

What is a self-directed learner?

Metacognitively, motivationally, and behaviorally active participants in their own learning.

- Proactively seek out information
- Overcome obstacles
- Accept responsibility

“Half of what you’ll learn in medical school will be shown to be either dead wrong or out of date within five years of your graduation; the trouble is that nobody can tell you which half—so the most important thing to learn is how to learn on your own.”

David Sackett, M.D.
McMaster University
How do I know if I am Self-Directed Learner?

- Self Directed Learning Perception Scale
- Self Directed Learning Competencies
- Self Directed Learning Readiness Scale (SDLRS)
  - Guglielmino – 1977
  - Most widely used instrument for assessing self-directed learning readiness

Does readiness for self-directed learning predict performance in an independent study based medical curriculum?

Douglas Danforth, Melissa Stahr, Rada Kuperschmidt, Patricia Fertel, David Way
The Ohio State University, Columbus, Ohio

Case matched correlation study. ISP and IP Students were matched on:
- MCAT
- Undergraduate Institution
- Undergraduate Science GPA
- Gender
- Ethnicity

OSU COM (class of 2012) students recruited
- 31 matched pairs completed the study

All students completed the Self-Directed Learning Readiness (SDLRS) Assessment Instrument as well as a curriculum questionnaire.

Outcome Measures:
- Pathway preferences/satisfaction
- SDLRS, USMLE Step 1, Med 2 Average

Data analysis:
- ANOVA
- Multiple Linear Regression

Methods

Key Questions

1. Are the two pathways different from each other on the measure of independent learning (SDLRS)?
2. Does SDRLS predict USMLE Step 1 performance?
3. Does the SDRLS score predict USMLE Step 1 performance differently for IP students than it does for ISP students (does interaction of pathway and SDRLS score predict USMLE Step 1 performance)?

Results

Key Questions

1. Are the two pathways different from each other on the measure of independent learning (SDLRS)?

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<td>SDLRS Score</td>
<td>IP</td>
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a. Predictors: (Constant), PATHWAYN, SDLRS SCR
b. Predictors: (Constant), PATHWAYN, SDLRS SCR, PATHINTERACTION

Summary

- ISP and IP students are equally satisfied with their choice of program but various factors contribute to that satisfaction
- ISP students score higher on SDLRS than IP students
- SDLRS score is not correlated with performance on USMLE Step 1 in either pathway

Conclusions

- Learning style does not predict performance in two distinct medical curricula
- Independent learners are more likely to “choose” an independent study curriculum than a lecture based curriculum

leadserveinspire
Curriculum goal:
Design learning resources around defined objectives and provide multiple resources

Objective Based vs Teaching Method Based

- Handout with all objectives and several resources for each
- Suggested study schedule
- eLearning Modules

Suggested Schedule

2/28

- Male Reproduction
- Female Reproduction

3/1

- Female Reproduction

3/2, 3/3

- Describe the anatomy (including histology) of the male reproductive tract
- Describe the anatomy (including histology) of the female reproductive tract
- Review the menopause, including its impact on reproductive function

Curriculum goal:
Design learning resources around defined objectives and provide multiple resources

Outcomes:

- Studying from objectives vs lectures was challenging
- Multiple learning resources led to confusion
- eLearning Modules were highly rated
  - Require considerable time and effort

Part One – Key Design Features

- Design learning resources around defined objectives
- Reduce emphasis on the standard lecture
- Utilize turning-point sessions and case-based clinical correlates
- Utilize TBL sessions to link basic and clinical content

Learning Resources

- Surgery and Gynecology: Chapter 1, 2, 3, 4, 5
- Genetics and Endocrinology: Chapter 6, 7, 8
- Clinical Decision Making: Chapter 9
- Interactive Learning Modules

Evaluation of Multiple Reproduction

Outcomes:

1. Less important to assess the success of the learning objectives
2. More important to assess the learning outcomes

Clinical Relevance

- gynecology and obstetrics
- Contraception
- Menstrual cycle
- Fetal development
- Breast pathology

Part One – Clinical Foundations

- Year 1
  - Orientation
  - Evaluation
  - Exploration
  - Endocrine and Reproductive Disorders
  - Gastrointestinal and Renal Disorders
  - Host Defense

- Year 2
  - Orientation
  - Evaluation
  - Exploration
  - Skin Bone and Muscle Disorders
  - Medical Practice and Patient Care
  - Neurological Disorders
  - Cardiopulmonary Disorders

Projects

STEP 1
**Curriculum goal:** Reduce emphasis on lectures

**Shift in emphasis**

- Learn first in class and go home to review notes
- Study at home and come to class prepared for a higher level discussion

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**Curriculum goal:** Reduce emphasis on lectures

- Traditional lecture hours reduced from 32 → 10
- Of 22 hours removed
  - 10h were replaced with TBL, CRIS, CPC
  - 12h were deleted
    - 2/3 basic science
    - 1/3 clinical content
- Total in-class time was reduced from 34h → 22h

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**Curriculum goal:** Reduce emphasis on lectures

- Outcomes:
  - Significant challenge for students
    - “Block seemed disorganized”
    - Students struggled to identify important material
  - Significant challenge for faculty
  - Several issues specific to pilot

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**Curriculum goal:** Provide interactive case-based clinical correlates to emphasize clinical reasoning and integration

**Part One – Key Design Features**

- Design learning resources around defined objectives
- Reduce emphasis on the standard lecture
- Utilize turning-point sessions and case-based clinical correlates
- Utilize TBL sessions to link basic and clinical content

**Approaches:**

1. Introductory lecture followed by quiz questions
2. Case-based approach following single individual throughout reproductive lifespan
3. Students had to solve problems based around specific physiological concept (oxygen delivery to fetus)

**Outcomes:**

- Clinical Reasoning sessions highly rated
- Case based approach with Turning Point questions seemed most effective
- Linking basic and clinical concepts essential
Curriculum goal: Utilize several TBL sessions as part of the block evaluation process.

Approach
- Utilized three TBL sessions – one each week
- Traditional TBL format except that both the IRAT/GRAT and application exercises were completed in one session

Outcomes:
- Students enjoy TBL
- TBL during first week was challenging but effective
- TBL requires a minimum of 2 hours to effectively finish.

Part 1 Design Guidelines – How did we do?
- Design learning resources around defined objectives
- Significantly reduce the standard lecture with a faculty member and students in the lecture hall.
- Present (real time) turning-point sessions that have questions covering the objectives.
- Utilize case based clinical correlates
- Utilize several TBL sessions as part of the block evaluation process.

Summary
Faculty/Block Leader challenges
- Designing cohesive block of IP/ISP approaches was difficult
- CRIS/TBL – good options for active learning but ...  
- Lecturers struggled
- Integration of knowledge and skills

Student challenges
- Prioritizing from objectives vs lectures was challenging
- Multiple learning resources was confusing

Key Points and Implications for Implementation
- Faculty change will be difficult
- Focus/limit learning resources
- Training and support for eLearning will be critical
- Standardization of content delivery may be important
- Integrating ISP and IP styles is challenging

Opportunities for Self-Directed Learning in LSI
- ISP – like modules
- eLearning Modules
- Video/Webcasts
- Clinical Reasoning and Integration Sessions
  - Flipped Classroom
Opportunities for Self-Directed Learning in LSI

- Flipped Classroom
- KHANACADEMY

The integration of e-learning into medical education can catalyze the shift toward applying adult learning theory, where educators will no longer serve mainly as the distributors of content, but will become more involved as facilitators of learning and assessors of competency.

Resources:


http://www.selfdirectedlearning.com/
http://www.selfdirectedlearning.org/
http://www.oltraning.com/SDLwebsite/indexSDL.php
http://medicaleducation.wetpaint.com/page/Self+Directed+Learning