SOFT SYSTEM METHODOLOGY IN UNDERGRADUATE MEDICAL EDUCATION

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ABSTRACT

Introduction Medical education is undergoing fundamental changes from linear and mechanistic learning models to non-linear, systematic and complex theoretical concepts. However there appears to be no overarching methodology to transform these concepts to the practical. In addition there does not seem to be a method that would allow a continuous learning cycle to help educators respond to changes in curricula with new models of teaching and approaches to patient care. Soft System Methodology (SSM) is a means of addressing these fundamental issues. SSM has been used extensively for more than 30 years to address every day problematical situations in diverse organizations and institutions. SSM contrasts the problematical situation with models built by relevant people and groups to allow debate and discussion, leading to action to change and improve the situation. A reflective component encourages an ongoing cycle of learning for further changes and improvements.

Method A brief review of medical education literature looked at whether SSM has been used in medical education (particularly undergraduate medical education). As well the literature reviewed Problem Based Learning (PBL) and Reflective Practice to contrast SSM with these established medical education components. An example of a real-world problematical situation in undergraduate medical education (differences in clinical skills proficiency at UBC SMP) was used to illustrate how SSM could to change and improve the perceived problem. The information was presented in a 36” by 48” poster and single Power Point slide.

Results The literature is saturated with the concepts of non-linear, complexity and systems ideas as the new paradigms in medical education. SSM is not being used in undergraduate medical education or other areas of medical education and medical practice. PBL and Reflective Practice are accepted forms of learning in undergraduate medical education and medical practice respectively. Both PBL and Reflective Practice have components similar to SSM. Using the problematical situation of Clinical Skills proficiency for first year students, the Soft system Methodology created a framework to address potential differences in skills acquisition.

Conclusion Soft System Methodology may be a useful framework for informed debate among relevant people and groups to act to improve Clinical Skills among first year medical students at UBC SMP. Soft Systems Methodology may also have applications in other areas of medical education including Problem Based Learning, Reflective Practice and Life Long Learning.
SOFT SYSTEMS METHODOLOGY: A new paradigm in undergraduate medical education?

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Old Paradigms
Medical education has been undergoing a shift from linear thinking and transfer of knowledge and skills to non-linear, systems based and complexity approaches to learning, like Problem Based Learning and Reflective Practice.

BUT are we using old teaching methodologies to address this paradigm shift?

Is there a methodology out there that would help this issue and serve as an approach to address real life problematical situations in medical education, serve as a life long learning cycle...

AND GO WHERE NO MAN HAS GONE BEFORE?
Soft Systems Methodology (SSM) was developed by Peter Checkland in the 1980s when traditional systems engineering failed to change corporate IT systems involving human interactions with real-world Problems.

SSM is a way to address every day problematical situations by:
- Recognizing that world views are based on Perspectives;
- Developing Action Plans for Change.

So SSM:
- Takes a perceived real world problem;
- Creates activity models based on declared world views (the German word is Weltanschauung) that are relevant to the problem;
- Then uses the models to set up comparisons to question the real situation, looking to find changes that are desirable and culturally ok;
- Which helps define or takes action to improve the situation.

The completing element is a reflective piece that is driven by the process and creates a cycle of continuous learning.

A Real-World Problematical Situation

Dr H teaches clinical skills (physical exam and a sprinkling of history taking) to first year medical students in a progressive and exciting medical education program of a major university. As a part of a new Master Teachers Certificate Program, Dr H was required to create a project. He began to look at systems thinking and complexity in medical undergraduate education.

BUT he began to wonder about the differences in skills acquired by the students based on preceptor interests and experiences.

THEN he began to wonder if the students’ outcomes were affected by their interests and experiences too.

EVENTUALLY he thought: “what if we’re teaching skills based on old paradigms transferred onto the “new” paradigm of systems ideas, non-linear thinking and complexity in medical undergraduate education?”

So this is what he did:
- Did a brief literature search and found that:
  - Systems thinking and complexity are very much a part of the lexicon of medical education today.
  - There is little in the literature about how to teach these concepts in a practical overarching methodology.

PBL and Reflective Practice appear to be established approaches in undergraduate education and career based learning and have components that are part of SSM.

Dr H applied SSM to look at this real life problematical situation:

Differences in clinical skills training outcomes based on interests in interests and experiences

Brings together many relevant individuals/groups having different world views (Weltanschauung)

1. Perceived real-world problematical situation
2. Creates purposeful activity models expressing the different world views
3. Comparing problematical situation and purposeful activity models
4. Design for action or carrying out action for IMPROVEMENT

Structured debate & discussion, informed by the intervention, social and political contexts enables search for desirable and feasible change

36"x48” trifold PowerPoint 2007

IN CONCLUSION
Linear thinking and cause/effect models in medical education may be on the way out.

Complexity and systems ideas seem to be part of new paradigms in undergrad med. ed.

SSM may have a role in addressing problematical situations in undergraduate medical education

SSM could be a model for life long learning in other areas of medical education, including life-long learning

A BRIEF BIBLIOGRAPHY


Checkland, Peter. Personal email communication, April 2014.


Walsley, Gillian. Do We all Mean the Same Thing by “Problem-based Learning”? A Review of the Concepts and a Formulation of the the Grounds Rules. Academic Medicine Vo. 74, No. 2February 1999.


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