Application of Activity Theory to Elicitation of User Requirements for a Computerized Clinical Practice Guideline: The ActCPG Conceptual Framework

Pavel Andreev, Wojtek Michalowski, Craig Kuziemsky
University of Ottawa, Canada
Stasia Hadjiyannakis
Children’s Hospital of Eastern Ontario, Canada
AGENDA

• Introduction
• Research Design
  – Activity Theory (AT)
  – The ActCPG conceptual framework
• Proof of Concept
• Discussion and Conclusions
INTRODUCTION

• Clinical Practice Guideline (CPG)
  – positive impact on a patient’s outcomes
  – improves the quality of care
• Computer-Interpreted Guideline (CIG)
  – CIG plays the role of an Information System (IS)
  • Developing a CIG **should be similar** to developing any information system (IS)!!!
  • Learning about user requirements is a first and essential part of effective IS design
OBJECTIVE

• Create a conceptual framework to formalize extraction of user requirements from a CPG

RESEARCH DESIGN

• Activity Theory (AT)–based framework for addressing the specifications for the CIG
  – analysis of user requirements through the lenses of the Activity Theory (AT)
  – to complement, not substitute existing methods of transforming a CPG into a CIG
STRUCTURE OF AN ACTIVITY

By **what** means?

**Tools**

**Subject**

**Object**

**Division of labor**

**Outcome**

**Who?**

**What?**

**Why?**

**How?**

**Interacts with**

**Transform to**

**Engeström (1987)**

Who does **What**?

**Who else?**

Andreev et.al. ActCPG Framework

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Six stages:

1. Activity discovering.
2. Activity structuring and describing.
3. Activity decomposing.
4. User requirements identification.
5. User requirements evaluation.
6. User requirements specification.
We illustrate the use of the ActCPG conceptual framework
  – three stages of the ActCPG framework

CHEO in Ottawa, Ontario implemented in 2010 a Healthy Active Living treatment program (CHAL) for children and youth with complex severe obesity

Patients accepted into CHAL must meet criteria for Complex Severe Obesity
  – 1.) <17 years of age and
  – 3.) BMI > 95th% ile
2. ACTIVITY STRUCTURING AND DESCRIBING.

Andreev et.al. ActCPG Framework
3. ACTIVITY DECOMPOSING

Andreev et al. ActCPG Framework
The development of a CIG should follow all the steps of IS system

ActCPG is a useful conceptual framework consisting of 6 stages for identification and structuring user requirements
- enables CIG design to support multidisciplinary healthcare team

Limitations
- Structured CPG with a narrative is necessary
- More than one analyst should conduct activity structuring and describing, which is heavily influenced by the level of experience of an analyst
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