IMPLEMENTATION & EVALUATION OF THE KNOWLEDGE ELEMENT PREPARATION MODEL

PRELIMINARIES

• Knowledge Element Preparation Model (KEP Model) by Thalmann, 2012
• part of a decision support system considering benefits and efforts
• basis for the KEPTool

Knowledge Elements  Adaptation Criteria  Employees

KEP Model

Ratings  Weights

Which knowledge elements should be prepared by which employee according to which adaptation criteria?

RESEARCH OBJECTIVE

The Implementation and Formative Evaluation of the KEP Model and the KEPTool

• evaluation of the...
• proposal the KEPTool computed for the Layers Theory Camp
• factors influencing the benefits and efforts in the KEP Model
• weights balancing the factors in the KEP Model
• rating procedure of the factors influencing the benefits in the KEP Model


PROCEDURE

Implementation of the KEP Model

• LP solver selection: GLPK
• implementation in GMPL
• declarative
• easy integration

KEPTool

Case: Layers Theory Camp

• part of the Learning Layers Project
• creation of many articles, flash meetings, presentations, spreadsheets, videos & wiki pages
• 61 knowledge elements, 11 topics, 6 types, 5 adaptation criteria, 2 employees

Computation of Proposal for the Layers Theory Camp

Rating of Efforts

• domain expert
• technical expert
• employees

Rating of Benefits

• self-administered questionnaire
• 21 respondents
• 7 volunteers for evaluation

Interviews and Data Analysis

• interviews à ~½ hour
• structured interviews following a guideline
• parts: factors in the KEP Model, proposal of the KEPTool and outlook for the KEPTool
• deductive and inductive coding after Mayring, 2014 and Miles et al, 2013
• summary

LIMITATIONS

• no consideration of automatic preparation / no setting of weights in proposal
• not generalisable or transferable
• subjectivity


RESULTS

Suggestions: Factors in the KEP Model

• benefit factor depending on employee
• factor concerning time, date, or version
• factor concerning safety, security, or environmental aspects
• investigate how factors can be instantiated
• (automatic) rating procedures

Application in a Real World Context

KEPTool

Suggestions: Relationships in the KEP Model

• exclusion of topics, types, or adaptation criteria
• technical evaluation
• change types of knowledge elements
• only one adaptation criterion

Suggestions: Application & Evaluation of the KEPTool

• clear description
• collaborative ratings
• assignment of topics and types
• involvement of stakeholders
• guidance in rating
• setting of weights
• timely proposal

Suggestions: User Interface of the KEPTool

• keywords or icons
• different languages
• terminology
• aggregation
• key measures

Suggestions: Application Scenarios of the KEPTool

• didactical tool
• project work
• knowledge management