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The effectiveness of Learner Stories in identifying outcomes for the adult learner within
Personal Learning Environments.

Peter Rawsthorne

Memorial University of Newfoundland

Partial fulfillment of the requirements for ED6610

Dr. Bruce Mann

Monday, March 26, 2007

Abstract

Instructional Systems Design (ISD) has often drawn upon software engineering methods and approaches (Douglas, 2006). A recent trend within software engineering is in using what are collectively known as Agile methodologies. The agile methodologies build upon the pragmatic and user centered practices of rapid development. The increased attention within education on personalization or the Personal Learning Environment (PLE) requires people take more ownership of their own learning and therefore the identification of their learning objectives. The use of the Agile method known as user stories can be used to gather learner stories which could then be used in combination with a personal competency assessment to identify personal learning objectives.

Research Questions

How do learner stories assist adult learners in identifying their desired learning outcomes when designing their own learning materials for use within a Personal Learning Environment (PLE)?

What attitudes are displayed by learners towards creating their own learner stories and identifying their personal learning objectives?

Literature Review

Three main themes were explored during the literature review for this proposal. The three themes are as follows;

1. Instructional Systems Design – was reviewed from the perspective of entrenched and emerging design process. The ADDIE (Lee & Lee, 1996) and Dick and Carey (Molenda, 2003) were reviewed as the traditional models. And the Constructivist Learning Environments (Jonasson, 2001; Wilson, 2000) was reviewed as the emerging process.
2. Agile Methods – were reviewed to explore how an agile approach is implemented and what processes and techniques could be used in the instructional design within a personal learning environment. Three themes were explored within the agile methods;
 - Agile User Stories (Ambler, 2006; Cohn, 2004)
 - Agile Test Cases (Chun, 2004; Cohn, 2004)
 - Agile Instruction (Ardis, 2004; Chun, 2004; Douglas, 2006)
3. Completion – knowing when learning outcomes or competencies have been met is important in determining if you have learned the required skills and knowledge. The process of getting to completion was explored through the use of;
 - Agile Test Cases (Chun, 2004; Cohn, 2004)
 - Means-Ends (Marshall, n.d.)
 - Competence based education (Everwijn, 1993)

Definition of Terms

Learner Story

A learner story describes skills or knowledge that will be required for a person to be successful within a task or subject domain. Learner stories are composed of three aspects;

- A written description of the story used for reference and planning.
- Conversations with subject matter experts about the story that serve to flesh out details and identify learning outcomes.
- Test scenarios that identify and document the details used to determine when the learner has gained the required skills and knowledge.

(Adapted from (Cohn, 2004); “What is a user story?” page 7.)

Outcome Story

An outcome story describes the outcomes or acceptance tests the learner needs to be considered competent in applying their new found knowledge. Outcome stories are composed of three aspects;

- A companion learner story.
- A written description of how the skills or knowledge are applied in practice. (Everwijn, 1993)
- Assessment methods to determine competency.

Participants

The participants will consist of adults with knowledge of pedagogy and approaches to self-directed and life-long learning. The volunteer participants will be solicited from a number of social networking sites focused upon pedagogical issues in education.

<http://www.elgg.net> is one such site.

Materials

The following materials will be required for project completion;

- Desktop Computer(s)
- Internet access
- Internet chat (MSN or equivalent)
- Wordpress (2.0 or greater)
 - Privacy feature is required
- Google Reader
 - To aggregate other participants blogs
- Index cards and writing instrument

Design

A spiral action research method will be utilized. (Baskerville, 1996; Mann, 2006) The first few steps (or iterations) of the project will be as follows; (keep in mind that later steps may change as the research influences each subsequent step).

- Step 1.** Idea forming phase – during this phase a description of the learner story and the research project will be introduced upon the <http://www.elgg.net>. Participants will be asked to express interest in participation.
- Step 2.** Participants will complete a pre-test and interview to gather data regarding the participants comprehension of learning outcomes, self assessment and competency analysis.
- Step 3.** Participants will write a set of learner stories and there respective outcome stories with the assistance of self identified mentors and subject matter experts. This set of stories will identifying their personal learning objectives.
- Step 4.** Participants will engage in self-directed learning activities derived from the learner stories.
- Step 5.** Participants will review their learner and outcome stories and further refine their personal learning objectives to bring learning closer to their outcome stories.
- Step 6.** Process will iterate back to step 3. until Means-Ends (Marshall, n.d.) come to closure.
- Step 7.** Participants will complete a post-test to gather data regarding the participants comprehension of learning outcomes, self assessment, competency analysis and overall satisfaction with creating their own learner stories.

Instrumentation

The following events will be used to gather data;

- Pre-test
- Interview questions
- Written work (through all iterations)
 - Learner stories, Outcome stories and Competency Analysis
 - Blogs and Wiki
 - Observations
- Post-test

Procedure

Procedure will follow the means-ends analysis method;

1. Until the goal is reached or no more procedures are available:
 - Describe the current state (learner story), the goal state (outcome story) and the differences between the two (competency analysis).
 - Use the difference to describe a procedure that will hopefully get nearer to goal state (outcome story).
 - Use the procedure and update current state.
2. If goal is reached then success otherwise fail.

Expected Results

- Participants will show an ability to write learner stories describing their learner needs.
- Participants will show an ability to seek out ‘experts’ to assist in writing outcome stories.
- Participants will have ability to competency analysis derived from learner and outcome stories.
- Participants will develop working relationships with ‘experts’ in developing methods to create self-directed learning environments.
- Participants will show ability to close gap between learner story and outcome story.

Data collection method

- Data gathered from pre and post tests will be quantitative
- Data gathered from Interviews, written work and observations will be qualitative and analyzed with appropriate use of discourse and content analysis. (Mann, 2006)

Data Collection

- Observations from pre and post test will be provided. The intent of these two tests is to identify current and developed knowledge.
- Written data will be analyzed through discourse and content analysis. Considerable effort will be performed as this is where the data will be found to support the research question(s).

Conclusions of the study

- The issue being addressed by this study is can Agile methods be utilized by learners to develop their own materials and learning objectives for use within a Personal Learning Environment (PLE).
- The conclusion will provide further insight into this thesis. If a positive result is found further investigation into the best methods in creating learner stories will have to be further explored.

Contributing factors

- Participants comfort with online learning and Web 2.0 based technologies (blogs, wikis, etc.)
- Willingness of participants to innovate
- The participants ability to engage an 'expert'
- The succinctness of learner stories and outcome stories
- Ability to perform competency analysis

Implications of the study

- A renewal of means-ends analysis methods within the concept of agile methods.
- Further understanding of Agile approaches appropriateness for learning environments.
- A proven approach for individuals to identify their learning needs within PLEs.

Limitations of the study

- Number of participants
- Fall off in participation
- Inappropriate fit of Agile methods in learner-centered design

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