CHAPTER 8 – The Need for Empirical Evaluation of Learner Model Elements

Heather K. Holden and Anne M. Sinatra

U.S. Army Research Laboratory (ARL) - Human Research and Engineering Directorate (HRED)

Suo yuxian

Central China Normal University-The school of psychology

professor hu's second year master student

Section 1- 1

- What has been done by the author(s)?

  ✓ Provide justification for the need of empirical evaluation

  ✓ Present guidelines and suggestions on how to conduct such evaluations using GIFT.

Section 1- 2

- What has been done by the author(s)?

Three sections:

- ✓ the current understanding of <u>learner model elements</u>;
- ✓ the <u>incorporation of the missing link</u> of HCI user modeling research
- ✓ suggestions on how to <u>conduct experimentation using GIFT</u>

Section 2- 1

- Important <u>concepts</u> and <u>theoretical basis</u>

1.Important concepts in computer science

✓ Human Computer Interaction(HCI)

✓ User-sensitive design，Intelligent user interface (iui)

✓ User models

Section 2- 2

- Important <u>concepts</u> and <u>theoretical basis</u>

2. Psychological theory:
- ✓ Motivation theory、achievement goal theory、efficacy theory、personality trait theory
- ✓ flow theory

Section 3-1

- Problems & Suggestions

  Problems existing in the current learner model:

✓ the lack of understanding of <u>the impact and interaction effects</u> of learner model elements;

✓ the lack of <u>reusability and transferability</u> of learner models between ITSs, domains, and populations;

✓ The <u>nonexistence of the measures</u> from user models/modeling of which learner models/modeling is a subset;

✓ the lack of <u>standardization</u> for learner model development and structure.

Section 3-2

- Problems & Suggestions

  Suggestions for future empirical evaluation of learner models:

✓ Examine the impact and interaction effects of learner model elements;

✓ Increase the reusability and transferability of learner models into different domains;

✓ Look to fields such as HCI for guidance into elements that may be useful within the learner model;

✓ Begin to move toward standardization of learner models.

Section 4-1

- Advantages of using GIFT as an experimental Testbed

✓ GIFT is a <u>domain-independent</u> framework

✓ Allows for the <u>examination of the impact of individual learner model elements</u>, and the possible interactions between them.

Section 5-1

- What improvements can be made to this article?

    Add <u>more</u> research <u>examples</u> on how to promote the empirical evaluation of learner model elements from the perspective of user modeling.