

3rd Workshop on Personalization Approaches for Learning Environments (PALE 2013)

Preface

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Abstract. Personalization approaches in learning environments can be addressed from different perspectives and also in various educational settings, including formal, informal, workplace, lifelong, mobile, contextualized, and self-regulated learning. PALE workshop offers an opportunity to present and discuss a wide spectrum of issues and solutions, such as pedagogic conversational agents, personal learning environments, and learner modeling.

1 Introduction

The 3rd International Workshop on Personalization Approaches in Learning Environments (PALE)¹ takes place on June 10th, 2013 and is held in conjunction with the 21th conference on User Modeling, Adaptation, and Personalization (UMAP 2013). The topic can be addressed from different and complementary perspectives. PALE workshop aims to offer a fruitful crossroad where interrelated issues can be contrasted, such as pedagogic conversational agents, responsive open learning environments, and learner modeling. The benefits of the personalization and adaptation of computer applications have been widely reported both in e-learning (the use of electronic media to teach, assess, or otherwise support learning) and b-learning (to combine traditional face-to-face instruction with electronic media - blended learning).

¹ <http://adenu.ia.uned.es/workshops/pale2013/>

Previous PALE workshops (both at UMAP 2011 and UMAP 2012) have shown several important issues in this field, such as behavior and embodiment of pedagogic agents, suitable support of self-regulated learning, appropriate balance between learner control and expert guidance, design of personal learning environments, contextual recommendations at various levels of the learning process, predicting student outcomes from unstructured data, modeling affective state and learner motivation, and using sensors to understand student behavior and tracking affective states of learners, harmonization of educational and technological standards, processing big data for learning purposes, predicting student outcomes, adaptive learning assessment, and evaluation of personalized learning solutions. This points at individualization of learning as still a major challenge in education where rapid technological development brings new opportunities how to address it. A lot of data can be collected in the educational process, but we need to find ways how to use it reasonably and to develop useful services in order to make the learning process more effective and efficient. Novel personalized services and environments are needed especially in lifelong and workplace educational settings, in order to support informal, self-regulated, mobile, and contextualized learning scenarios. A big challenge is also adaptation considering both long-term objectives and short-term dynamically changing preferences of learners. Here open and inspectable learner models play an important role. In the case of pedagogic conversational agents personalization is fostered by the use of adapted dialogues to the specific needs and level of knowledge of each student.

In order to foster the sharing of knowledge and ideas to research on these issues, PALE format moves away from the classic 'mini-conferences' approach and follows the Learning Cafe methodology to promote discussions on open issues regarding personalization in learning environments. This means that participants attending the workshop benefit both from interactive presentations and constructive work.

2 Workshop themes

The higher-level research question addressed in the workshop is: “What are suitable approaches to personalize learning environments?” It is considered in various contexts of interactive, personal, and inclusive learning environments. The topics of the workshop included (but not limited to) the following:

- Motivation, benefits, and issues of personalization in learning environments
- Approaches for personalization of inclusive, personal and interactive learning environments
- Successful methods and techniques for personalization of learning environments
- Results and metrics in personalized learning environments
- Social and educational issues in personalized learning environments
- Use of pedagogic conversational agents
- Affective computing in personalized learning environments
- Ambient intelligence in personalized learning environments
- User and context awareness in personalized learning environments

3 Contributions

A blind peer-reviewed process by three reviewers per paper with expertise in the area was carried out to select the contributions for the workshop. As a result, 4 submissions were accepted, which report designing approaches, evaluation methods and open issues for eliciting the recommendation support to personalize learning environments.

Arevalillo-Herráez et al. [1] discuss what is needed to design an experiment for capturing relevant information from an ITS to improve the learner's competence in solving algebraic word problems considering learners' emotional and mental states. To enrich learner's experience with affective support both action logs to record user's interaction with the system, which can be used to discover important information that help instructional designers to improve the ITS performance, and emotional information gathered from external sources, which reflect affective or mental states, can be used.

Labaj and Bieliková [2] propose a conversational evaluation approach be used within ALEF adaptive learning framework that tracks the user attention and uses that information to ask the evaluation questions at the appropriate time and right when the user is working with the part in question (or just finished working with it). This approach aimed to get higher cooperation from the user providing more feedback than when we would ask them randomly.

Koch et al. [3] are researching, developing, and testing technologies to instrument classrooms, collect human signal data, and derive meaning that can lead to understand their relation with the education performance. In particular, they have developed an interface to capture human signals in learning environment, integrated into innovative analytic models to extract meaning from these data and have implemented a proof-of-concept experiment to detect variations of attention deficit hyperactivity disorder based on level of attentiveness, activity and task performance.

Manjarrés-Riesco et al. [4] discuss open issues which arise when eliciting personalized affective recommendations for distance learning scenarios, such as scarce reported experiences on affective support scenarios, ii) affective needs, iii) difficulties of affective communication in virtual learning communities, iv) reduced scope of the affective support provided in current approaches, and v) lack of resources for educators to provide affective support. These issues were identified in the course of applying TORMES user centered engineering approach to involve relevant stakeholders (i.e. educators) in an affective recommendation elicitation process.

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