SEDELA: Self-Data for Enhancing Lifelong Learning Autonomy

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Résumé

L'apprentissage tout au long de la vie revêt un enjeu majeur dans un environnement socio-économique où la transition professionnelle est devenue la règle. L'université peut fournir à ces personnes, qualifiées d'apprenants adultes, les ressources dont elles ont besoin pour les aider à acquérir, développer ou consolider de nouvelles aptitudes et compétences dans leur processus d'apprentissage tout au long de la vie. Le projet SEDELA vise à comprendre et à renforcer l'autonomie des apprenants dans une perspective d'apprentissage tout au long de la vie, en s'intéressant tout particulièrement au contexte de la formation professionnalisante à l'université. Dans cette communication, nous présentons les objectifs de recherche de notre projet et les résultats attendus en éducation et en intelligence artificielle.

Mots Clef

Formation tout au long de la vie, modélisation des connaissances, modèles d'apprenant ouvert, sémantique.

Abstract

Lifelong learning has become a central asset in a versatile socio-economic environment where people are encouraged to change occupations several times during their career. University can provide those people qualified as adult learners with the resources they need to help them acquire, develop or consolidate new skills and competences in their lifelong learning process. The SEDELA project aims to understand and enhance learner's empowerment in a lifelong learning perspective focusing specifically on continuing education at university. In this paper, we present the research objectives of our project and the expected results in education and artificial intelligence.

Keywords

Lifelong learning, knowledge modeling, open learner models, semantics.

1 Introduction

The evolution of society requires employees and unemployed people to adapt to the labor market, by changing their activity and by training on a regular basis. Many Opportunities are offered to experienced workers willing to make that change. Training leave, online training, vocational training, special funds, etc. are some of many means available nowadays to facilitate the transition between jobs or between job and a new training. Higher education has become a cornerstone for those who are willing to engage in a professional transition. The development of new skills and competences in lifelong learning process aims to help learners gain empowerment. That why, it's necessary to provide them with the necessary resources for achieving professional learning autonomy. The SEDELA project proposes to design an environment that will increase learner empowerment by combining (i) educational tools fostering the development of learner autonomy and (ii) services infrastructure enabling relevant model-based feedback development on self and collective learning.

2 The four facets of SEDELA project

2.1 Autonomous learning & learner autonomy

Learner empowerment refers to many definitions and significations [3]. One of them we find particularly relevant relates to the ability for a person to define their own learning path and act on their environment. Autonomy in adult education is defined as "the ability to take charge in one's learning" [9], meaning specifically "determining the objectives; defining the contents and progressions; selecting methods and techniques to be used; monitoring the procedure of acquisition properly speaking (rhythm, time, place, etc.); evaluating what has been acquired" [9]. Autonomous learners must have the capacity for critical reflection, decision making, and independent action. Those definitions highlight two different levels of autonomy: **autonomy in the learning process** and **learner autonomy** [4].

Research [5] [6] reveal that motivation is a crucial factor to engage autonomy. This hypothesis is incomplete, as they do not take into account the intricate interactions between learner's autonomy and their professional development. In order to fill this gap, Learner Autonomy Development will be scrutinized from a professional development point of view through posture, socialisation and identity [7].

2.2 Infrastructure Design

Our infrastructure aims at supporting lifelong Learning Autonomy Development (critical reflection, decision making and independent action) and Autonomous Learning Processes. It will propose an articulation between Personal Learning Environment (PLE) [10] and e-Portfolios [11]. Our infrastructure will be based on Personal Information Management System (PIMS) [1].

This will will provide necessary privacy and long-term storage, to enable personal data and learner models management in a lifelong learning perspective [8].

2.3 Semantic Open Learner Models

A learner model refers to the model constructed from observation of interaction between a learner and a technology-enhanced learning system. In the Learner Model community, important studies have been developed about learner control, understandability, availability of various sources, visualizations and their impact on learning. According to [11] [2], we retain some key features for learner models in a lifelong learning perspective: **open** to support autonomous learning process and learner autonomy, **negotiated** to support learner autonomy, **independent** to own and reuse personal data and **shared** to enable collaboration and personal data reuse in different learning contexts. An open, negotiated, independent and shared Learner Model is a necessary machine representation of the learner knowledge and skills and their progression to support lifelong learning (autonomous learning process and learner autonomy).

2.4 Trusted Collaborative Services

Linked Data, thanks to semantic Web technologies, make possible large scale integration of data on the Web. Data integration is a key issue when designing collaborative services. Semantic collaborative services will not only facilitate the management of learner's data, but also foster the development of learner's autonomy.

Each learner should manage her personal learning data in a private space. A learner may collaborate with others (learners, tutors, masters, etc.) by sharing data in behalf of her learning autonomy. Such a data sharing should be done through trusted services. Trust will be based in the capacity of learners to control the usage of their data, i.e., whom is able to access their data, for how long, for which purposes, under which context, which data can be integrated with which other data, where their data can be stored and/or processed, etc.

3 Perspectives

Aligned with [12], we aim at giving learner the control to its data through a lifelong personal environment. Semantic Open Learner Models, together with Trusted Services, provide a relevant infrastructure that enables new innovative services, both social and respectful of personal issues, while providing explicit resolution, needed for learner's autonomy support. We argue that autonomy support, personal infrastructure and trust are interrelated research issues, that can be tackled thanks Design Based Research [13]. To achieve this, we have to bridge the gap between several domains, Educational Science, Technology Enhanced Learning and Computer Science to foster synergies between learner autonomy formalization and semantic models design.

Acknowledgement

SEDELA is a project funded by CominLabs. It is common to laboratories: LS2N - Nantes University (Hala Skaf-Molli, Patricia Serrano Alvardo), CREAD (Jérôme Eneau and Jaque-François Marchandise) and Lab-STICC - IMT-Atlantique (the authors).

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