



International Conference on Advanced Computing Technologies and Applications (ICACTA-2015)

Assistive E-Learning System for the Learning Disabled

Zainab Pirani^{a*}, Sasikumar M^b

^aMHSSCOE, Byculla, Mumbai 400008, India

^bCDAC, Kharghar, Navi-Mumbai 410210, India

Abstract

Learning Disabilities (LD) are usually hidden disabilities that affect many individuals who usually have average or above average intelligence. It is acquired before, during or soon after birth and affects an individual's ability to learn, all through his/her life. LD may also involve difficulties with organizational skills and social interaction. These difficulties can be alleviated by providing appropriate e-learning environment for them. We had proposed a framework, an Assistive Learning Environment (ALE) to enhance the learning experience of LD students in their academic life¹, which is capable for recognizing what content has to delivered, variability associated with each LD learner and transformations associated with the content to deliver it to the LD learner. The system architecture is developed for our framework whose objective is to transform the given content in a way acceptable by the specific LD learner. This transformation is a complex process and it has to be done at various levels. Assistive E-Learning System, a prototype implementation of our framework has been completed and sample interactions are presented in order to assess the system's strengths and weakness. The system provides the user to indicate transformations and configurations not appropriate to the user.

© 2015 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of scientific committee of International Conference on Advanced Computing Technologies and Applications (ICACTA-2015).

Keywords: Learning Disability (LD); special needs; Assistive Learning Environment (ALE); transformations; architecture; e-learning system

* Zainab Pirani. Tel.: + 919820773912.

E-mail address: zainab.pirani@gmail.com

1. E-Learning and Learning Disabilities

In this technological era, e-learning is the link between internet and education. It is a popular educational technique providing promotional path for up gradation and reformation of education in all major countries of the world. However, as far as the students with learning disabilities (LD) are concerned, they often lack the opportunity to get trained via e-learning technology. There is a clear indication that most of the e-learning service providers perceive themselves as mere providers of technology. Consequently, while every technologically possible feature is included in e-learning environment, there is an absence of accessibility integration for LD students. These vendors often contradict themselves, on the one hand, they claim that they provide e-Learning solutions for all², but cannot incorporate the needs for LD students. It has become obvious that the impact of not considering the accessibility issues when implementing e-Learning solution will challenge the adaptability process.

LD is a general term that describes specific kinds of learning problems. A learning disability can cause a person to have trouble learning and using certain skills³. The skills most often affected are: reading, writing, listening, speaking, reasoning, and doing math states that LD are caused by differences in how a person's brain works and how it processes information⁴. Children with LD are not "dumb" or "lazy." In fact, they usually have average or above average intelligence. Their brains just process information differently. There is no "cure" for learning disabilities⁵. They are life-long. However, children with LD can be high achievers and can be taught ways to get around the learning disability. With the right help, children with LD can and do learn successfully.

The research in the field of providing assistance in learning for LD is still in infancy. In India, around 13 to 14 per cent of all school children suffer from learning disorders. Unfortunately, most schools fail to lend a sympathetic ear to their problems. As a result, these children are branded as failures. Besides the growing awareness, there are still a number of misconceptions that are associated with the term 'learning disabilities'. The reasons for these misconceptions are manifold⁶. The LD movement in India is of a recent origin, there has been an increasing awareness and identification of children with LD. Despite this growing interest, we still do not have a clear idea about such assistance to LD in e-learning environment. Policy related to this assistance for LD is yet to see the daylight. In absence of such a policy and incongruous environment, children with LD cannot be rehabilitated in regular schools⁷. Considering the barriers of LD learner and current scenario of e-learning, we decided to explore this domain of Assistive Learning for LD, trying to address the appropriate technology interventions for their problems.

1.1. Major Challenges

In realizing an Assistive E-Learning System for LD, the major issues and challenges are as follows:

- LD learners often lack the opportunity to get trained via e-learning technology, which provide innovative ways to learn and provide comprehensive interactive access to the content which cater to their requirements and they can learn when and where they want, at their own pace. The aim is to focus on following three dimensions of the e-learning framework: (a) Content (b) Presentation Formats and (c) Pedagogical Strategies through which teaching and learning process can be effectively achieved.
- Content plays a very important role for LD students. Focus is to build appropriate content which can help in building appropriate presentational interventions for LD. The content has to be enriched with text, graphics, audio and video according to the requirement of the LD learners⁸. Currently the content is designed in various formats but are not meant specifically for LD.
- Every LD learner has its own unique learning style. So in order to improve the learning curve, the content must be presented in the format that matches the learning styles of the LD learner⁹.
- LD students have wide range of learning needs. They have their own unique set of strengths, weaknesses, interests, experiences and special abilities. Therefore pedagogy that is appropriate for a particular learner in a certain situation may be of little value in another situation¹⁰. Thus by building pedagogical strategies appropriate for them we can customize their individual learning experience.
- Constructing pre-packaged content for different LD requirements is not feasible, given the wide variety of LD patterns and requirements¹¹. A rich and general framework which can transform content from a standard repository to each LD student would be valuable, but challenging to design.
- Also for any e-learning system, there are also typical challenges like delivery, which also apply to our task.

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات