# Mapping of Personalized Learning Environment (PLE) among Malaysian's Secondary School

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*Abstract*— **Integrating informal and formal learning by using social media in education context of the pedagogical approach is called as Personalized Learning Environment or PLE. This paper reports on the implementation of Personalized Learning Environment (PLE) among Malaysian's secondary school. The purpose of this paper is to highlight (a) Personalized Learning Environment (PLE), (b) Why use PLE, (c) Elements in PLE, (d) Framework in PLE and (e) Issues with PLE. Several surveys were developed to explore the learning needs and goals as well as to construct the vision of PLE implementation. PLE is using a variety of social media in teaching students to become effective self-regulated learners. Besides that, it may help the students acquire basic and complex personal knowledge, management skills such as for creating, managing, and sustaining.**

*Keywords—Personalized Learning Environment; E-Learning; Framework; Social Media*

## I. Introduction

The use of information and communications technology (ICT) is one of the ways to encourage the process of learning, to support communication in learning settings, to assess learning activities, to manage resources and to create educational materials. Nowadays, electronic learning or E-learning encompasses a wide range of technological applications. Towards Malaysia's vision by 2020, ICT becomes an important agenda of achieving transforming the country from a production- to a knowledge-based economy. During the process of learning, students communicate, negotiate and talk each other to share their achievements [13]. The rapid growth and advancement of technology-based instructional strategies, tools, and courses have facilitated this unbundling of instruction by expanding teachers' and students' access to Web- or software-based learning modes [7]; [23].

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## II. Personalized Learning Environment (PLE)

The learner may need all possible tools and resources during learning process in a user-centered customizable way that aimed by PLE [30]. PLE is not only a social landscape, but it is a personal space which belongs and controlled by the learner. It can connect with other personal spaces for collaborative knowledge creation and effective knowledge sharing. Indeed, traditional learning based on "one size fits all" approach, tends to support only one educational model, because in a typical classroom situation, a teacher often has to deal with several students at the same time [3]. Many researchers suggested that the distinctiveness and differences of each learner must be taken into account in preparing the learning procedures which is to ensure them engage and take responsibility for their own learning [1]; [12];[15]; [18]; [26]; [36]; [39]. PLE is one of the new concepts in designing and developing an online learning which is focusing on individual learning rather than the facilities, resources, instructor and tools. To improve the effectiveness of learning, PLE has also played an active role [37]. PLE also is one of the tools that allows for a learner to engage in a distributed environment consisting of a network of people, services and resources [29].

## III. Why use Personalized Learning Environment (PLE)

Students always seek information to address a problem at school, work or to justify a curiosity. They are not only to seek information but also to share information by taking advantage of digital and networked technologies. Since they are active co-producers of content, learners should not be considered as passive information consumers [9]. The integral part of the college experience becomes highly self-motivated, autonomous, and informally in the context of social media [22]; [33];[34]. However, the pedagogical evidence of social media is allowing learners to manage and maintain a learning space that facilitates their own learning activities and connections across time is a place relying on traditional platforms such as course and learning management systems (LMS) [22]; [31];[38].

## IV. Elements in Personalized Learning Environment (PLE)

Society is currently immersed in what has come to be known as the social web [24];[10];[32];[4];[5], the most defining traits of which are summarized and defined below [6];

a) Software as a service: online services and applications from the browser, interoperability between services and applications, standards.

b) Making the most of collective intelligence.

c) Everyone is an author who can publish: reading and writing networks, simple and powerful tools (blogs, wikis, photos, videos, podcasts, etc.)

d) Content management: creation and sharing of knowledge, micro-contents, using metadata, syndication, as well as tagging.

All in all, this more socially connected Web allows people to contribute as much as they can consume [2]. Most of the tools and resources available (wikis, blogs, YouTube, social networks, bookmarking, etc.) focus on enabling and promoting user-generated content that can be later distributed through the participation, interaction and collaboration of everyone –hence its "social" label.Several principles can be associated with everything related to the social web [25] a) An attitude against technology such as Web 2.0 has consistently has a strong impact field of knowledge; b) The permanent Beta: the tools and resources are continuously developed, new features are often added, distributing the software as a service rather than a product; c) The right to mix a number of reserved rights: Creative Commons [17] devised a new licensing system for content distribution and use that allows users to share their knowledge without violating privacy rights; d) Emergent: free software which contains mechanisms favoring intrinsic patterns and structures in interactions between individuals; f) hackbility: or the ability to experiment with various data sources, mixing them to create a new product.

## V. Framework in Personalized Learning Environment (PLE)

A framework of PLE is shown in Figure 1. The possibility to plug learning components comes from multiple sources into a learner-controlled space. The content comes from the different source example feeds, widgets and media into a single interface. To create entirely different views or uses of the original data, a more complex remixing of different APIs applications is integrated. To define approaches to developing PLEs it requires some attempts. PLE is a collection of all the different tools used in our everyday life for learning, but it is not an application. There are different ways of PLE development [20]. PLEs can be realized as WebTops, desktop applications example PLEX [40] and content management systems.
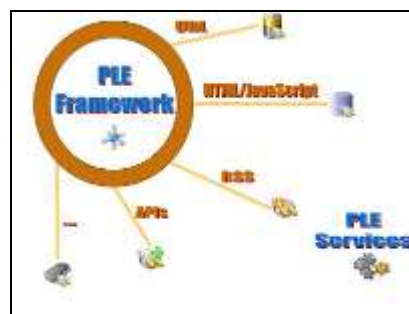


Figure 1.   Framework in Personalize Learning Environments (PLE)

PLEs can also exist in an ad-hoc manner such as through blogs. PLE framework should meet the challenges and reflect the PLE characteristics outlined in the previous sections. PLE needs to meet the following attributes:

- **Personalized:** PLE should provide the learner with the ability to determine and use the tools, incorporate a myriad of tools, services and the way that fit to create leaner's own PLE that adapt their situation and needs.

- **Social:** The building of interactive environments should be supported by PLE by offering a means to connect with other personal spaces so that learners can engage in collaborative knowledge creation and knowledge sharing. Some of social features such as social tagging, commenting, and sharing have to be supported.

- **Open:** To ensure communication with other services and interoperability, PLE should be based on open. API should be provided that can be used third-party services.

- **Ubiquitous:** PLE should provide ubiquitous access and flexible delivery PLEs from multiple channels to a wide variety of platforms and mobile devices.

- **Easy to use:** to personalize and manage her PLE with minimum effort, learner should be able to copy-and-paste and drag-and-drop elements. PLE should provide rich experience.

## VI. Issues with Personalized Learning Environments (PLE)

The same concepts that students with very little computer related skills can find it difficult to learn in personalized e-learning environments due to the complexity of the components required to personalize systems to their needs [8][27]. Researchers like [11] and [14] have indicated similar views to [16], and have argued that it would be difficult to design course context and structure to facilitate student' s needs with very little ICT skills. In order to deliver course content, activities and services, specific research is required in the area of instructional design; learner centeredness; a wide range of functionalities; and domain experts to support and guide the learning cycle. According to [19] and [28], the problems with these approaches are the complexity of

managing individual environments to compensate the needs of the learners.

However, according to [11] and [14], to compensate for the individual learning experience a more effective learning process must be designed and implemented. This would involve direct interaction at the design stage amongst the learners and the domain experts, which would enable a balance to be developed; however, this identifies areas of support and time, which sometimes the domain expert does not have.

[35] and [8] indicate that the components for adapting to individual needs can be everyday technology, but the problem is associated with how the learning materials are structured which is not feasible to describe all the conditions that are required for determining which part of on-line materials is appropriate for different learner's needs. According to [8] and [21], learning environments must be flexible enough to support platform dependencies, which can lead to different institutions to use learning materials from other on-line sources.

## VII. Conclusion

The model in PLE should represent a shift away, which students gather information through independent channels such as the LMS, textbook, or library instead a model where students draw connections from a growing matrix of resources that they select and organize. PLEs can promote authentic learning by incorporating expert feedback into resources and learning activities. In terms of designing, PLE is creating self-direction and responsibility for learning, organization rests with the learner. Although, it is challenging to learner to reflect on the tools, but resources that will help them learn best where PLE puts students in charge of their own learning processes.

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