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Manifestations of the Pedagogical Communication in applying LbD4All through Web 2.0

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Abstract: The current paper examines some specific features of the use of Web 2.0 at a lifelong learning level at Sofia University “St. Kliment Ohridski”, the Faculty of Philosophy. The research is focused particularly on the Bulgarian educational context and new practises as part of the LeTeEm project [1]. The subject of the research includes some spheres of use of Web 2.0, distinguished by the communication roles of users and participants, over a period of two years. Web 2.0 tools and their application in education are relatively new phenomena from an academic point of view but due to their dynamic development over the past seven years and their vast every-day-life use, they are currently being incorporated in the practices of teacher communities all over the world, including EU countries. What is more, we can no longer look at professional communities as ones confined to a particular country, i.e. from Finland, the Netherlands, Scotland, Romania, Bulgaria, etc. - these are created across state borders and physical limitations and each participant enriches them with their specific background and experience. Thus the main goal of the current paper is to investigate the education potential of the Web 2.0 used by teachers as participants in the LeTeEm project; the kinds of digital environments used for developing digital literacy as an additional skill in teachers’ professional development; the relevance and efficiency of the combination between Web 2.0, e-learning and pedagogical innovations in the educational context in different countries. The second research goal includes a survey of specific educational methods and methodological approaches used by the teaching staff inspired by the LeTeEm project.

The first part of the paper focuses on the introduction of the main terms and their interpretation: Web 2.0, e-learning 2.0, blogs, virtual teacher communities, digital literacy, LbD4All, etc. The second one discusses some results of the research into using Web 2.0 in education shedding light on practising teachers’ readiness to actively participate in virtual communication as part of the teaching and learning process on the basis of the LbD4All Action Model.

Keywords: Web 2.0, electronic mediated communication, computer mediated communication, online communication, e-learning 2.0, sites of social networks, blogs, learning by developing for all (LbD4All).

Introduction

This paper attempts to present the results of a piece of research into the use and implementation of Web 2.0 tools and e-learning in an in-service teacher training on implementing the LbD4All Action Model as a key part of the LeTeEm project. Although the topic is innovative, it is possible to trace its roots to well-established pedagogical practices. That is why it allows for the combination of two approaches: a brief historical overview and a

successive introduction of the main terms and notions starting from the basics and continuing to the new terms incorporated gradually in the functioning terminology of the broader field of e-Learning, electronically mediated communication (EMC), today's social networks, etc. Logically, after the theoretical frame we present the methods employed in the process of the research while our focus is on the specific application of Web 2.0 in virtual teacher communication as displayed particularly in the context of preparing to adopt innovative pedagogical activities.

Theoretical frame

With regard to our first area of interest – e-learning and virtual communication, it is possible to separate four groups of key notions whose common features are diversity of terms and permanent renovation of the terminology. The quick increase in the number of terms in circulation whose meaning is overlapping or close is a result of the need to provide an up-to-date report on the dynamical development of technologies and the increasing role of the Internet and social networks in particular. We will introduce only the main notions as it is not possible to present all of them in a short paper and secondly, because this is not its goal.

Web 2.0 and Social Networks

We will start with **Web 2.0** and **social networks**. Tim O'Reilly introduced the notion and the term Web 2.0 in 2005 presenting his ideas in the online article "What Is Web 2.0. Design Patterns and Business Models for the Next Generation of Software" [2]. Lon Safko and David K. Brake in their book "The Social Media Bible" present the features of social media differentiating between social media and social networks. The authors explain the special features of Web 2.0 and especially of the content and minicontent; they also dwell on how communication is maintained in the new environments [3]. We will continue the survey with what Clara Shih states in connection with the Internet in her book "The Facebook Era". She presents the four decades since the advent of computing and points out that social networking appears in its fourth decade – it started at the beginning of the 21st century [4].

Another researcher and practitioner, Nick Peachey, dwells on the application of the Internet and focuses on the features of Web 2.0 with regard to teachers in his online handbook "Web 2.0 Tools for Teachers" [5].

Jeremy B. Williams and Joanne Jacobs analyse the use of blogs as a learning space in the higher educational sector and it is new sphere of exposure / application of social networking sites speaking of an enlarged sphere of blogs application [6]. Earlier on, Barry Wellman, Janet Salaff, Dimitrina Dimitrova, Laura Garton, Milena Gulia, Caroline Haythornthwaite research computer networks as social networks [7]. Stephanie Nilsson studies the function of language to facilitate and maintain social networks in research weblogs. [8]. Reece Lamshed, Marsha Berry and Lauri Armstrong defend the position that blogs are a personal e-learning pace. [9].

On the basis of this brief overview, it is evident that Web 2.0 challenges permanent interest and researchers open new prospects to their application particularly in the field of education.

Digital Natives, Net Generation, and App Generation

The next group of terms consists of notions regarding learners. Two of the most popular terms, *Digital Natives* and *Digital Immigrants*, were introduced by Marc Prensky at the turn of the Millennium [10]. The term *Net Generation* is a title of the book edited by James Oblinger and Diana Oblinger [11].

Joel Hartman, Patsy Moskal, and Chuck Dziuban focus on online learning and discuss two domains of online learning related to the features of the Net generation in the sixth chapter „Preparing the Academy of Today for e Learning of Tomorrow” of their book „Net Generation”: [12].

“The first domain – learning engagement – encompassed six items where students indicated their:

- overall satisfaction with online learning
- ability to integrate technology into their education
- ability to control their own learning
- ability to study efficiently
- ability to meet their educational objectives
- willingness to take another online course.

The second domain – interaction value – is based on students’ evaluation of their online learning experience with regard to:

- ease of interaction
- amount of interaction with students
- quality of interaction with students
- amount of interaction with the instructor
- quality of interaction with the instructor.” [13].

With the vast use of smart phones and the development of online apps, naturally, researchers’ interest has been drawn to the influence of the latter on the way modern students learn. Thus the term *App generation* has been coined. The discussion sways from viewing the current generation of learners from “app-dependent” to “app-enabled”. However, the prevailing opinion seems to be that using apps promotes a strong sense of identity, allows deep relationships, and stimulates creativity. Gardner & Davis (2012) state that “apps are great if they take care of ordinary stuff and thereby free us to explore new paths, form deeper relationships, ponder the biggest mysteries of life, forge a unique and meaningful identity. But if apps merely turn us into more skilled couch potatoes who do not think for ourselves, or pose new questions, or develop significant relationships, or fashion an appropriate, rounded, and continually evolving sense of self then the apps simply line the road to serfdom, psychologically speaking [14].

E-learning

E-learning is the basic notion, however, the positions associated with the term have changed over time. The other terms are ‘online learning’ and ‘distance education’. Mark van’t Hoft and Philip Vahey introduce the term „Highly Mobile Comput” [15]. Martin Ebner and Mandy Schiefner ask the question „Mobile learning – trend or concept?” in the article *Microblogging – more than fun* [16]. The terms are used by researchers and practitioners and the metalanguage is constantly changing recognizing the need for updating the terminology.

Abu Nadzrah Bakar interprets e-learning as an e-learning environment and he focuses on the use of blogging as a platform for language learning [17].

Kar-tin Lee discusses the effectiveness of e-learning in the article “E-Learning: The Quest for Effectiveness” [18].

Allison Rossett and Antonia Chan prognosticate the features of e-learning, and its development. They talk about “new e-learning” in the “The ASTD E-Learning Handbook” [19]. Martin Ebner attractively presents his opinion and takes a position on the features of e-

learning presenting it as formulae in the title of the article “E-learning 2.0 = e-Learning 1.0 + Web 2.0? Second” [20]. (Ebner 2007).

Allison Rossett and Antonia Chat use the term e-learning 2.0 as well [21]. Parallel to the positive attitude of the above-mentioned authors some researchers express their forecast concerning e-learning with hesitation or apprehension, or even extremely negatively. Marting Ebner and Mandy Schiefner, for instance, prefer to choose a provocative question for the title of their article: “Will e-Learning Die”? [22]. However, e-learning continues developing.

What kind of literacy

It is important to discuss what skills are necessary in order for an individual to function successfully in an e-learning environment. In the same way as knowing the alphabet lays the foundation of one’s literacy, certain knowledge and skills underlie the process of using electronic channels of communication and digital resources.

Jami Carlacio and Lance Heidig use the term digital literacy and they explain why in their article “Teaching Digital Literacy. Digitally: A Collaborative Approach. Media in Transition” [23].

George Lorenzo and Charles Dziuban explain the terms information skills, information competence, information literacy skills, visual literacy, new media literacy [24].

Jami Carlacio and Lance Heidig explain the need for multiple literacy in the twenty-first century, agreeing that students do have digital literacy but adding that teaching digital natives shifts the current research topic to new cognitive maps [25].

Gunther Kress introduces and explains the term multimodality in his book „Literacy in the New Media Age”. [26]. One of the key terms is the multi-modality of texts and hence multimodal literacy. Some of the features of this new kind of literacy are the transformation and transition from the book to the screen, the interaction between text and image to communicate meaning. Gunther Kress introduces the term „visual grammar” and argues the need to use it. The author explains that students have different attitudes to studying and that they decide how to do it and engage with the information and with the blocks of text according to their interests. Kress describes the difference between written texts and on-screen ones [27].

The LeTeEm Project

As mentioned above, it is generally accepted that students are already better at using digital tools and that their satisfaction with learning is higher when an e-learning environment is set up. On the other hand, it seems that teachers need to develop their digital literacy in order to not simply catch up with the Net generation but be able to set up meaningful classroom activities based on Web 2.0 resources and tools [28].

However, along with the need to implement a meaningful educational experience which acknowledges the development of modern ICTs, it is necessary to look more carefully into the aims of modern education. On a Europe-wide level it has been repeatedly stressed that education and training play a key role in the future growth, long-term competitiveness and social cohesion of the Union. The European Council emphasizes on the fact that “*young people need the right skills for the labour market. Stronger cooperation between education and training providers, social partners and other relevant parties should be promoted to support a smoother transition from education to work*” (3144th Council meeting, 10 Feb 2012) [29]. The need to facilitate the encounter and mutual enrichment of secondary, tertiary and lifelong education with the real world labour market is becoming ever more important. That is

why the LeTeEm European project (Learners, Teacher and Employers) has set to look for practical solutions to make the above possible on the basis of adapting the Learning by Developing action model (which has been developed and trialled out in the context of tertiary education in Finland (Raij: 2014) [30] for implementation in a variety of settings, mainly in teacher and secondary education.

The LbD4All Action Model

Modern pedagogies rely on a number of distinct didactic models whose predominant features maybe viewed as belonging to the educational-theoretical, constructivist or communicative education (Penkova, Tsvetkova: 2015) [31]. The pragmatic-constructivist trend in education is based on sharing knowledge between the subjects of education laying an emphasis on the way a learner gains or constructs knowledge developing his personality in this process. Acquisition of knowledge takes place within the cognitive structures defined by teachers and is based on self-organisation on part of the learner. It is necessary for teachers to create an educational environment which is rich, motivating and oriented to learners' communicative needs. In view of the realities of present-day challenges facing education it is hardly surprising that constructivist ideas are put to the fore and, on the other hand, educationalists are looking for ways to combine and thus further enrich existing pedagogical approaches and learning models. Models based on *experiential learning, contextual learning, collaborative and cooperative learning, learning by doing, service learning* as well as others are being experimented with in order to be implemented in secondary education.

The action model Learning by Developing for All – LbD4All – is an example of this tendency. It is mainly based on learning by doing and service learning and is an adaptation of the above-mentioned LbD model developed under the LeTeEm project. The model is realized through five dimensions, namely *authenticity, research-oriented approach, partnership, experiential nature* and *creativity* (Henriksson, Manitere, Manti: 2014) [32]. Following this model, education is realized through the preparation and implementation of a specific learning project which is based on a real-life task introduced by an employer and typical of a particular sphere of human activity or branch of industry. Another characteristic feature of this learning project is its cross-curricular nature requiring the partnership between teachers of more than one subject, learners and employers. The preparation, implementation and the final utilization of the project results are directly related to using ICTs (mainly of a Web 2.0 nature) to communicate and collaborate, to evaluate the results of the different project stages, etc.

Results

Although the LbD action model can be regarded as a well-established practice particularly in the context of the Finnish higher education conceptualising the proposed methodology of LbD4All and putting it into the context of secondary education using e-learning tools proved not to be a very easy process. The main obstacle seemed to be making the conceptual accessible and meaningful to a larger audience of teachers and teacher trainers, school principals across Europe, i.e. putting the LbD4All action model to practice in a variety of school settings. The first step taken by the LeTeEm project partners was to combine the conceptual framework with the e-learning aspect and decide on how to implement both by use of a customised e-learning platform which provides a common space for communication and collaboration for all agents in the teaching and learning process – teachers, learners and employers.

A major project output was the systematic teacher training based on the LbD4All adapted for schools which took place over several months in several EU countries (Bulgaria, Romania, Scotland, the Netherlands, Finland, and Portugal facilitated by the integrated e-learning platform. The training course itself was flexible enough to allow carrying out offline, online or in a blended manner. The trained teachers had the opportunity to participate in a hyper locality context together with colleagues and trainers from different countries and of various experience: (Bulgarian, Belgian, Finnish, Dutch, Romanian, Scottish teachers working collaboratively). They were introduced to the use of several Web 2.0 tools and to strategies for implementing e-learning channels and cross-curricular teaching in own practice. The other key aspect of the training was teachers' preparation for implementing a cross-curricular learning project and for effective interaction with employers following the LbD4All action model. Altogether 272 teachers were trained online or during blended learning courses while another 60 teachers were trained in a face-to-face manner. The main outcome of this mass training of educators is the necessary prerequisite for the uptake of LbD4All in secondary education contexts. With the help of the administered pre- and post-training questionnaires the following major conclusions can be formulated.

Prior to the start of their training teachers declare familiarity with Web 2.0 and e-learning and manage to give relevant examples of these. They find it difficult, however, to conceptualise the use of these in their teaching practice. This means that the focus should be shifted from the nature of the social internet as most "digital immigrants" are now if not proficient at least regular users of Web 2.0 tools in their daily lives. Instead, greater attention should be paid to their educational affordances.

- In line with the preliminary expectations, on the whole teachers are not familiar with the concept of Learning by Developing, but they demonstrate a good level of awareness of different constructivist ideas and practices such as project-based learning, service learning, learning by doing especially within the context of teaching the subject they are specialists in. However, most teachers share an openness to learn about LbD4All and some of them manage to guess successfully the meaning of the LbD dimensions.
- At the end of the training, there are indications that teachers can use the proposed methodology in order to combine education with real life. They are able to identify cross-curricular fields which can be exploited with the help of partners from the world of work. These examples, proposed by the teachers themselves, are characterised by a high level of concreteness and practical advantage yet in line with the theoretical knowledge they have to transmit to their learners as required by the respective national educational context.
- Another conclusion worth noting is the awareness of the importance of systematized pedagogical and theoretical information in developing tangible products of teachers' and learners' efforts in and out of class.
- There is a marked awareness that online communication, information and collaboration can be helpful in teachers' day-to-day tasks and a readiness to discuss and present online what is done offline and vice versa, to share and multiply what they have done.
- From the point of view of the e-learning theoretical frame discussed in the first part of the current paper, on examination of the behaviour of registered users on the e-learning platform, 3 modes of such can be defined.

- The first one is the behaviour of active users who do not simply access the “static” parts of the teacher training space and follow the tasks but take part in online discussions, contributing to their development and even initiate interaction with their tutors or colleagues on the course.
- The second one is the behaviour of semi-active users who prefer to access the “static” parts of the online training space, do not take part in all discussions and rarely initiate discussions or interaction on their own.
- The third one is that of “lurkers” who use the platform as a database of information, possibly following the interactive elements of the training without becoming visible by relying to posts or adding to collaboratively developed content. This might be due to the combination of established offline modes of teacher behaviour and the reluctance to move to a more Web 2.0-appropriate online behaviour of not simply being a user or someone who has the answers but someone who shares content and contributes to its development and further creation.

The above insights are invaluable in the sense that they prove that Web 2.0 and e-learning are already part of established teacher training solutions but they also allow teacher educators to plan for adequate actions stimulating the transition from just accessing information online to being an active user and content creator.

Applying the LbD4All Action Model in the Bulgarian secondary schools

The close examination of the training courses and the subsequent piloting of the LeTeEm e-learning platform and the LbD4All action model in secondary education shows uneven distribution of uptake of the proposed pedagogical actions. They prove to be more readily accepted in Bulgaria and Romania than in the other project countries. Although school education in Bulgaria is strictly regulated by the National Educational requirements for study content for the respective subjects and the syllabi for applying them in each grade, Bulgarian teachers demonstrate an open mind towards new educational approaches and are very creative in their application. Based on the pilots carried out in Bulgaria, several important aspects of the process can be understood in greater depth. These are:

- achieving synergies at an institutional (school) level promoted by the application of the LbD4All Action Model
- research and innovation at secondary school level inspired by the application of the LbD4All Action Model and the LeTeEm learning platform
- Engagement and relations with outside partners inspired by the application of the LbD4All Action Model

Several best practice cases in Bulgaria have to be mentioned. The first one is the case of Sonya Krancheva, teacher of English and History at “Bratya Kanazirevi” school, Razlog, Bulgaria who trialled the action model with 26 students from grade 9, two other teachers from the same school - of Bulgarian language and ICT – and 10 local employers. Her students actively used the platform to communicate while working on their project in addition to meeting the employers in their companies and offices. The LbD4All Action model and platform were made part of the teacher’s educational technology developed and piloted through a pedagogical experiment. This led to collection of empirical data and its statistical processing. Based on this, the teacher has published two online articles and had developed a diploma paper for the award of the highest professional qualification level in the country.

The second case was realised by Rositsa Vasileva, deputy-head of the “Hristo Yassenov” School in Etropole, Bulgaria and was carried out with 65 students from grade 5 to grade 9, 24

teachers of all subjects, the Municipality of Etropole as the main employer, the local History museum, the “Holy Trinity” Monastery and the local horse raising enterprise. An interesting aspect of this case is the fact that the deputy-head teacher acted as teacher trainer for her colleagues before they started implementing the LbD4All in a complex all-school project. The latter allowed the students to communicate with the key people responsible for governing their city and learn how this is done in a real life context, they could also choose which area of the city’s heritage to work on and realize their creative potential according to their interests and abilities.

The third case we would like to mention here is that of Desislava Dimitrova, a representative of the Ruse Chamber of Commerce who initiated a piloting project with 4 teachers and 8 students from the 11th and 12th grade of the “Elias Kaneti” Vocational High School in Ruse, Bulgaria. What is most worth-noting in this case is the fact that an employer acted as a multiplier and trained the four teachers how to apply the LbD4All ideas and worked with the students towards the implementation of their learning project using the LeTeEm e-learning platform.

These three best practice cases shed light on important aspects of incorporating the suggested ways of bringing the real world into the secondary school classroom such as the optimum project duration and the necessary preparation of teachers, learners and employers in order to carry out their tasks successfully and to make the most of their partnership [32].

Conclusion

The LbD action model adapted for use in a secondary school setting can be implemented with an emphasis on employing Web 2.0 solutions to the task of linking school education to universities and to the requirements of the labour market in a way that will guarantee the theoretical value and the practical relevance of education at all levels. This can be achieved by adequate teacher training already successfully piloted across countries and settings and by a wide awareness-raising which will alert the attention of business representatives, educators, parents and local communities to the need for linking school experiences to real life. The proposed model has been proved to lead to cooperation on a school and beyond school levels with businesses and local authorities. It can be stated that as a result of the actions undertaken within the LeTeEm project an awareness of the importance of a new type of pedagogic competence, including digital literacy, pedagogical background and coaching skills in a virtual environment developed in cooperation with business representatives in different EU countries has been achieved. Conditions for new e-learning behaviour modes with regard to new communicative and social roles, i.e. content creator, online contributor, web editor, moderator of virtual discussions and self-reflection through a rotation of roles have been created. Last but not least, online collaborative teacher groups and online collaboration between business and education has been trialled out and best practices in this respect have been identified in order to inform future actions in this sphere.

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