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Analyzing the efficacy of Moodle towards in-service EFL teachers' development: the case of the HOU

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The present article focuses on the use of Moodle in the M.Ed. in TESOL programme of the Hellenic Open University (HOU). More specifically, it explores whether the current use of Moodle enhances the development of the aforementioned teachers and if it promotes the social constructivist pedagogy, on which the philosophy of the platform is based. The motivation behind this study was recent literature review which has revealed a need for integrating technology into teacher education programmes on condition that effective educational uses are applied. To this intent, a small-scale case study was conducted which employed a mixed-methods research model including a questionnaire survey and some interviews. The results substantiate the hypothesis that a more elaborate use of Moodle through a transformation of pedagogical practices towards social constructivist and learner-centered procedures would produce EFL teachers who would demonstrate significant learning outcomes.

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Το παρόν άρθρο επικεντρώνεται στη χρήση του Moodle στη μεταπτυχιακή ειδίκευση καθηγητών Αγγλικής γλώσσας στο Ελληνικό Ανοικτό Πανεπιστήμιο (ΕΑΠ). Πιο συγκεκριμένα, ερευνάται αν η παρούσα χρήση του Moodle ενισχύει την εξέλιξη των παραπάνω καθηγητών και αν προάγει την παιδαγωγική του κοινωνικού εποικοδομητισμού πάνω στην οποία βασίζεται η φιλοσοφία της πλατφόρμας. Κίνητρο για αυτήν την έρευνα αποτέλεσε πρόσφατη βιβλιογραφική ανασκόπηση η οποία φανερώνει μια ανάγκη για ενσωμάτωση της τεχνολογίας στα προγράμματα εκπαίδευσης καθηγητών με την προϋπόθεση η χρήση της να γίνεται αποτελεσματικά. Έτσι, διεξήχθη μία μικρής κλίμακας μελέτη περίπτωσης, η οποία εφάρμοσε ένα μοντέλο έρευνας μικτής μεθόδου μέσα από ερωτηματολόγιο και μερικές συνεντεύξεις. Τα αποτελέσματα ενισχύουν την άποψη πως μια πιο εξειδικευμένη χρήση του Moodle που στρέφεται σε κοινωνικό-εποικοδομητικές και μαθητοκεντρικές πρακτικές θα οδηγούσε σε σημαντικά αποτελέσματα στην μάθηση των καθηγητών της Αγγλικής ως ξένης γλώσσας.

Keywords: Moodle, blended learning, Learning Management Systems, e-Learning, social constructivism, teacher development

1. Introduction

Nowadays, education is undergoing significant changes contemplating new ways of teaching and learning (Mehrabi & Abtahi, 2012). More specifically, universities have witnessed the use of virtual environments which are available online organizing and disseminating information in a systematic, systemic and interactive manner either synchronously or asynchronously (Abdelraheem, 2012). As a result, there is an explosion in the number of institutes using Learning Management Systems¹ (LMSs) to deliver blended learning and distance education courses in the hope of enhancing students' learning experience. An example of an LMS is the Moodle platform which is built on the sound educational philosophy of social constructivism since it allows the exchange of information among users geographically dispersed through mechanisms of synchronous and asynchronous communication (Cole & Foster, 2010). Research has proven that Moodle usage enhances learning beyond the classroom for both teachers and learners, on condition that effective educational practices are applied (*ibid*). The purpose of this study is to investigate the efficacy of Moodle in the M.Ed. in TESOL programme of the HOU and explore the hypothesis that its current use does not potentiate EFL teacher development and that a more elaborate use of it through a transformation of pedagogical practices towards social constructivist and learner-centered procedures would produce EFL teachers who would demonstrate significant learning outcomes.

2. Literature review

2.1. E-learning and LMSs

The synchronous way of life has catalyzed the need for ongoing professional development of the existing workforce, has resulted in demands for flexible and convenient learning opportunities and has necessitated easier access to education. As a result, an explosion is occurring currently in the demand for distance education (Chavan & Pavri, 2004), with e-learning being one of the fastest modes. Actually, e-learning is an emerging educational practice which has grown dramatically over the past two decades with characteristics that suit the learning needs of modern society and that have a great impact on professional training and academic education (Sun *et al.*, 2008). It has been defined as 'online' interactions of various kinds that take place between learners and tutors (Dougiamas, 2011). Gonella and Panto (2008) have traced the following four stages in the evolution of e-learning: web-based training, e-learning 1.1, online education and e-learning 2.0. In this final stage of e-learning the LMS continues to be the dominant technology for delivery of online courses (Rupesh Kumar, 2009).

LMSs allow for the creation of unique learning environments that can supplement in-class activities, empowering both students and instructors to reinforce the course material, and to engage with the material in a variety of different ways (Dougiamas & Taylor, 2003). They are generally described to be software applications used by the instructors to administer learning through the distribution of instructional materials and monitoring and assessment of student participation and performance (Srichanyachon, 2014). Additionally, they enable

¹ LMSs are software applications used by the instructors to administer learning through the distribution of instructional materials and monitoring and assessment of student participation and performance (Srichanyachon, 2014).

individual (student-to-content, student-to-student, instructor-to-student) and group interactions accommodated by built-in LMS tools (Kats, 2013). Today, most LMSs make extensive use of the web and include features such as discussion forums, chats, journals, automated testing, grading tools and student tracking.

The predominant reason that LMSs have seen such widespread implementation is an overriding expectation that their use will enhance a student's learning experience, and thereby lead to better individual performance (Martín-Blas & Serrano-Fernández, 2009). Regrettably, some LMSs are primarily used as a tool set for information distribution and administrative effectiveness rather than a system with potential to improve teaching and learning activities (Black *et al.*, 2007). If these platforms are used in their fullness, they have many capabilities like interaction, feedback, conversation and networking (Costa *et al.*, 2012). Thus, the usability² of the LMS is the key to the effectiveness and efficiency of the online course (Lewis *et al.*, 2005).

2.2. The Moodle platform: an overview

One implementation of LMS is the Moodle platform which provides educators, administrators and learners with a single robust, secure and integrated system to create learning environments (Kabassi *et al.*, 2016). It is available for free on the web (Cole & Foster, 2010) with various plugins for different functionalities, it allows the exchange of information among users through mechanisms of synchronous and asynchronous communication, such as forums and chats (Costa *et al.*, 2012) and it permits teachers to provide and share documents such as assignments and quizzes with students, in an easy-to-learn and user-friendly interface (Dougiamas, 2011). Moodle's worldwide numbers of more than 90 million users across both academic and enterprise level usage make it the world's most widely used learning platform trusted by many institutions and organizations³. Apart from universities, 'Moodle is also used in high schools, primary schools, non-profit organizations, private companies, and by independent teachers and even home-schooling parents' (Al-Ajlan, 2012, p. 200). In Greece, Moodle is trusted by more than 45 learning environments such as the National Technical University of Athens, the universities of Macedonia and Thessaly, the Greek School Network and the Hellenic Open University (HOU).

2.2.1. The Moodle philosophy

After the early years of forays into computer-mediated conferencing and web-based learning it is becoming clear that the pedagogical use of the Internet should be informed and appraised by clear theoretical perspectives (Amundsen, 1993) and that the correct and effective use of technology in education must be supported by proven pedagogical and practical procedures based on computer supported collaborative and constructional learning (Moreno *et al.*, 2007). In the same vein, Abdelraheem (2012) claims that Moodle is built on the theoretical perspective of constructivism according to which knowledge is not passively received from the environment but it is actively constructed by the learner (Piaget, 1975). Additionally, many adopters refer to Moodle as being based on an extension to

² 'The usability of the LMS is the extent to which a product can be used by specific users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use' (Berns, 2004, p. 21).

³ The platform is trusted by many organizations including Shell, London School of Economics, State University of New York, Microsoft, the Open University (Moodle.Net, 2017), Massachusetts Institute of Technology and Yale.

constructivism called 'social constructivist' principles (Chao, 2008). Social constructivism has ideas that can be traced back to Vygotsky (1978) and 'extends constructivism into social settings, wherein groups construct knowledge for one another, collaboratively creating a small culture of shared artifacts with shared meanings' (Moodle Philosophy, n.d., p. 2).

Apart from the social constructivist philosophy, the main advantage of Moodle is that the courses developed are based on constructionist pedagogy as well (Veglis & Pomportsis, 2005). Constructionism asserts that 'constructivism occurs especially well when the learner is engaged in constructing something for others to see' (Dougiamas, 2000, p. 3). In addition to the aforementioned theories, Martin's background in education led him to adopt the theoretical perspective of social constructionism as the main theory behind Moodle (Cole & Foster, 2010) with an emphasis on tools that promote collaboration and self evaluation. 'While most Virtual Learning Environments (VLEs) are instructor-oriented and largely concerned with how course content is delivered, Moodle is based on a learner-oriented philosophy called social constructionist pedagogy, in which students are involved in constructing their own knowledge' (Chavan & Pavri, 2004, p. 129). According to this approach, people learn through a creative social process by investigating, analyzing, collaborating, sharing and reflecting (Martinez & Jagannathan, 2008).

2.2.2. *The architecture of Moodle*

The platform promotes the aforementioned theories through the different tools that it provides its users with. Thus, regarding its architecture, the Moodle platform is characterized by a set of functionalities grouped in two different classes, that of resources and that of modules⁴ (Blin & Munro, 2008). The latter provide a central point for information, discussion and collaboration among Moodle users (Al-Ajlan, 2012) and can be classified as follows: interactive tools where peer interaction is fostered through channels of communication such as discussion forums and chats, web 2.0 tools for collaboration such as journals, wikis and glossaries and finally both tools that provide timely feedback on performance (Martinez & Jagannathan, 2008) and tools specifically designed for collecting feedback from students.

3. Research methodology

3.1. *Nature of the study*

The study is both an exploratory case study⁵, the case of the use of Moodle in the M.Ed. in TESOL programme of the HOU and an instrumental case study intended to investigate a wider issue (Stake, 1995, p. xi) that of the general use of Moodle in higher education as a tool for teacher development. It is in favour of a pragmatic approach thus the researcher remained as free as possible of paradigmatic dogmas and felt free to choose the research method that worked best in the enquiry (Dörnyei, 2007). As a result, a mixed methods

⁴ Resources present instructional materials that are usually created in digital formats and then uploaded to the platform (webpages, power point files, word documents, flash animations, video and audio files represent some examples of these resources) and modules are components created via Moodle in order to provide interaction among students and teachers towards manipulation and content transformation (Blin & Munro, 2008).

⁵ Case study is the study of the 'particularity and complexity of a single case' (Stake, 1995, p. xi).

research⁶, 'a new and vigorously growing branch of research methodology, which offers the best of both worlds' (Brown, 2004, as cited in Dörnyei, 2007, p. 20) by 'corroborating, elaborating or initiating findings from the other method' (Rossman & Wilson, 1985, p. 627), was used. It involved both quantitative, through questionnaires, and qualitative, through interviews, methods⁷ in a separate and parallel manner because concurrent designs are invaluable when we examine a phenomenon that has several levels (Dörnyei, 2007) as it is the case of Moodle, which can be studied at the trainers' level using interviews and at the trainees' level using questionnaires. Finally, the aforementioned choice of method was made in order to achieve a fuller understanding of the target phenomenon, to foster triangulation⁸ and to verify one set of findings against the other (Sandelowski, 2003).

3.2. Hypothesis and research questions

The current study explores the hypothesis that the current use of Moodle in the M.Ed. in TESOL programme of the HOU does not promote the philosophy of the platform and as a result does not contribute to EFL teacher development and that a more elaborate use of it through a transformation of pedagogical practices towards social constructivist and learner-centered procedures would produce EFL teachers who would demonstrate significant learning outcomes. To this end, the researcher was genuinely interested in finding out if there was limited cooperation and communication among the participants through Moodle in an era when the most prevalent theoretical perspectives in research on online learning are those of social constructivism and social constructionism and in an era when both trainees and trainers are used to online communication. In addition, a need to explore the potential of the collaborative use of this tool, to prove that such a use brings higher learning achievements and to investigate if trainees and trainers prefer other ways of communication instead of the platform was expressed by the researcher. More specifically, this research aims at answering the following research questions:

1. What are the trainees' attitudes and beliefs regarding the use of Moodle in the context of the M.Ed. in TESOL programme of the HOU?
2. How often and for what reason do the trainees use Moodle?
3. What kind of use would the trainees like to have in order to fulfill their training needs?
4. Why does the current use of the Moodle platform not enhance the trainees' development?

3.3. The context and the subjects of the study

⁶ 'Mixed methods research involves different combinations of qualitative and quantitative research either at the data collection or at the analysis levels (Dörnyei, 2007, p. 24). Researchers have been referring to studies that combine qualitative and quantitative methods under a variety of names, such as multitrait-multimethod research, interrelating qualitative and quantitative data, methodological triangulation, multi-methodological research, mixed model studies, and mixed methods research (Creswell *et al.*, 2003). A straightforward way of describing mixed methods research is to define it as some sort of a combination of qualitative and quantitative methods within a single research project' (Dörnyei, 2007, p. 44).

⁷ 'Quantitative research involves data collection procedures that result primarily in numerical data which is then analysed primarily by statistical methods. Qualitative research involves data collection procedures that result primarily in open-ended, non-numerical data which is then analysed primarily by non-statistical methods' (Dörnyei, 2007, p. 24).

⁸ The real breakthrough in combining qualitative and quantitative research occurred with the introduction of the concept of 'triangulation', which in Denzin's (1978) terms, is a way of validating hypotheses by examining them through multiple methods.

The study addresses the students of the M.Ed. in TESOL programme of the HOU and it involves 72 participants, 70 female and 2 male, of different age groups ranging from 22 to 59. All of them have been teachers of English for some years and they were or have been students of the university for at least one year after the academic year of 2013-2014. This was the year when the Moodle platform⁹ was first used in the HOU and since then it has resulted in a very flexible system for it because it was very reliable, scalable and customizable. Finally, 2 tutors of the aforementioned programme and the developer of the platform participated in the study expressing their views, the former about the current use of the platform at the university and the latter mainly about the suggested use of it.

3.4. Data collection instruments

As it was mentioned in section 3.1, the researcher made use of both quantitative and qualitative approaches. Regarding the quantitative instruments, a questionnaire (see Appendix I) was designed and administered to the trainees of the M.Ed. in TESOL programme of the HOU. Moreover, qualitative data were collected through some interviews with the developer of the Moodle platform and with two tutors of the above described programme.

3.4.1. The questionnaire

The researcher opted for the use of the questionnaire because 'questionnaires are relatively easy to construct, extremely versatile and uniquely capable of gathering a large amount of information quickly in a form that is readily processible' (Dörnyei, 2007, pp. 101-102). Furthermore, time and cost-efficiency are cited as some of its additional advantages (Dörnyei & Taguchi, 2010) that the researcher took into account. Regarding the concepts researched, the questionnaire included 5 basic sections focusing on the trainees' attitudes towards the platform, their training on the use of the platform and the frequency of their use of it, the degree of interactivity and reflection promoted through Moodle, the frequency of their use in different features of Moodle and the way they would like to enhance their learning through the platform. Finally, 'validity was improved through careful sampling, appropriate instrumentation and appropriate statistical treatments of the data' (Cohen *et al.*, 2007, p. 133). Concerning sample size, the researcher needed around 70 participants both 'to make sure that these coefficients were significant and that she did not lose potentially important results' (Dörnyei & Taguchi, 2010, p. 63).

3.4.2. The interviews

The interview is a natural and socially acceptable way of gathering information which can be used in a variety of situations to yield in-depth data (Dörnyei, 2007). Thus, the researcher interviewed individuals who could provide rich and varied insights into the phenomenon under investigation so as to maximize what she could learn. The interviews, as Kvale (1996) suggests, belonged to the category of a one-to-one 'professional conversation' and were 'one-off events lasting about 30-60 minutes' (Dörnyei, 2007, p. 134). Finally, they were highly structured directive¹⁰ interviews (Richards, 2003) and, in line with Dörnyei (2007, p. 135), the researcher 'followed a prepared, elaborate interview schedule' because she was

⁹ <http://study.eap.gr>

¹⁰ 'We can simply package up interviews as either directive (those following a specific agenda) or non-directive (those which are allowed to develop more naturally)' (Richards, 2003, p. 51).

aware of what she did not know and could frame questions that would yield the needed answers. Finally, the researcher selected the three participants mentioned in section 3.3 who shared some important experience relevant to the study in order to conduct an in-depth analysis that would reveal common patterns in a group with similar characteristics (*ibid*).

4. Findings

4.1. Presentation of the quantitative findings

In this section, the researcher presents a summary of the focal points of the quantitative data in order to test the hypothesis that the current use of Moodle in the M.Ed. in TESOL programme of the HOU does not have the potential of leading to EFL teacher development. Regarding attitudes towards the Moodle platform, an interesting finding was that there was only positive propensity towards the fact that Moodle was a useful software tool (see Table 1) while a high percentage (73,6%) disagreed that the knowledge they got from Moodle was inferior to that of a traditional classroom.

	Frequency	Percent	Valid Percent	Cumulative Percent
Partly agree	6	8,3	8,3	8,3
Agree	38	52,8	52,8	61,1
Strongly agree	28	38,9	38,9	100,0
Total	72	100,0	100,0	

Table 1: Moodle was a useful software tool

Concerning interactivity and reflection through Moodle, a negative tendency (73%) showed that they did not interact more through Moodle than they would in a traditional class and that reflective thinking was not developed more through Moodle than through traditional classroom (56,9%). About frequency of use in different features of Moodle, it is worth noting that there was an outstanding percentage of 80,6% that attested to the fact that they always used Moodle to submit assignments (see Table 2), 51,4% to download course material (see Table 3) and 52,8% to check course announcements (see Table 4).

	Frequency	Percent	Valid Percent	Cumulative Percent
Seldom	2	2,8	2,8	2,8
Occasionally	3	4,2	4,2	6,9
Very frequently	9	12,5	12,5	19,4
Always	58	80,6	80,6	100,0
Total	72	100,0	100,0	

Table 2: I used the platform to submit assignments

	Frequency	Percent	Valid Percent	Cumulative Percent
Never	3	4,2	4,2	4,2
Very seldom	4	5,6	5,6	9,7
Seldom	4	5,6	5,6	15,3
Occasionally	4	5,6	5,6	20,8
Very frequently	20	27,8	27,8	48,6
Always	37	51,4	51,4	100,0
Total	72	100,0	100,0	

Table 3: I used the platform to download course material

	Frequency	Percent	Valid Percent	Cumulative Percent
Seldom	7	9,7	9,7	9,7
Occasionally	3	4,2	4,2	13,9
Very frequently	24	33,3	33,3	47,2
Always	38	52,8	52,8	100,0
Total	72	100,0	100,0	

Table 4: I used the platform to check course announcements

In addition, a positive frequency was expressed towards using Moodle to do assignments (75%), to answer questionnaires (72,3%) and to get feedback (79,1%). Concerning the suggested ways for the use of Moodle, the questionnaire revealed that an outstanding percentage of participants showed a high agreement towards all the suggested uses of the platform with disagreement being confined to very low scores. The highest preference was expressed for using web 2.0 tools (76,4%) (see Table 5) and forums (76,4%) (see Table 6) followed by teleconferences (75%) (see Table 7).

	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	1	1,4	1,4	1,4
Slightly disagree	2	2,8	2,8	4,2
Partly agree	5	6,9	6,9	11,1
Agree	9	12,5	12,5	23,6
Strongly agree	55	76,4	76,4	100,0
Total	72	100,0	100,0	

Table 5: I would like Moodle to enhance my learning through the use of web 2.0 tools

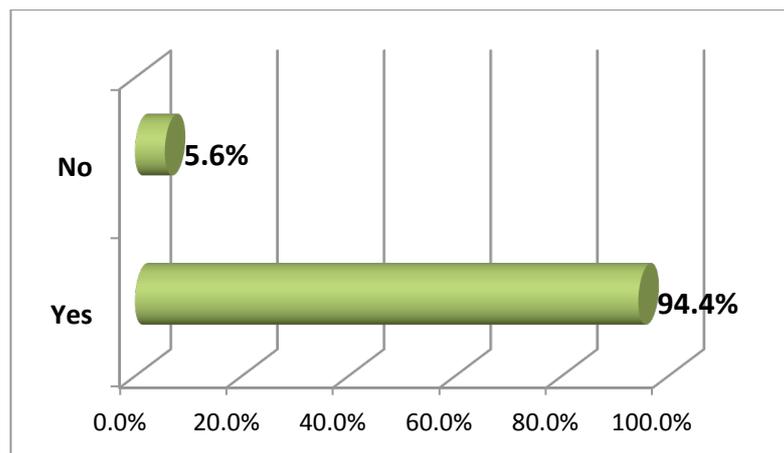
	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	1	1,4	1,4	1,4
Partly agree	2	2,8	2,8	4,2
Agree	14	19,4	19,4	23,6
Strongly agree	55	76,4	76,4	100,0
Total	72	100,0	100,0	

Table 6: I would like Moodle to enhance my learning through conversation in forums

	Frequency	Percent	Valid Percent	Cumulative Percent
Slightly disagree	1	1,4	1,4	1,4
Partly agree	6	8,3	8,3	9,7
Agree	11	15,3	15,3	25,0
Strongly agree	54	75,0	75,0	100,0
Total	72	100,0	100,0	

Table 7: I would like Moodle to enhance my learning through teleconferences

Concerning training on the Moodle platform, only a small minority subscribed to the idea that they had received training on the educational use of Moodle before their studies in the HOU while a spectacular consensus view of 94.4% considered basic introductory training on Moodle functionalities useful (see Graph 1).



Graph 1: Basic introductory training on Moodle functionalities would be useful

Finally, as regards frequency of use, the questionnaire replies showed a once a week tendency of use spending an average time of 1-6 hours on it.

4.2. Presentation of the qualitative findings

Most of the above quantitative facts are verified by the interviews with the two tutors and the developer of Moodle. The researcher tapped into the collective wisdom of the interviewees which showed that both tutors agreed that the training offered to them was not adequate so that they could use all the different Moodle tools and that, in order to improve the aspect of communication in the university, they expressed a need for extensive and detailed training. In addition, they had not used tools like forums and wikis, since according to one of them *'Moodle is a platform only for assignments, grades and for giving material for students to study'*. Additionally it was found that the students are reluctant to use the platform, preferring instead, their personal mails or as one tutor commented *'the channels of communication they are accustomed to'*. What is more, they conjointly boosted the idea of a symbiosis of Moodle with contact sessions, a view also espoused by the founder of the platform. Finally, Martin Dougiamas, the founder of the platform, in his interview shed light on the way his platform could be used and among other things he stressed that *'people learn best when constructing things for others in a social environment'* and that *'any learning will be improved by giving students more responsibility to create things for their teacher and their peers'*.

5. Discussion

5.1. Answering the Research Questions

Based on the sound findings and with regard to the first research question, the quantitative data revealed a positive stance towards the use of the platform, a fact corroborated both by the interviews with the tutors and by an agglomeration of studies in the Greek reality, albeit in different contexts¹¹ (Bountouris *et al.*, 2005; Karasavidis, 2003; Kavroumatzis & Fesakis, 2007; Michailidids *et al.*, 2009; Skiadelli, 2008 and Tzimopoulos, *et al.*, 2007). Additionally, the present study revealed that participants see it as a useful tool for learning, an idea also echoed by Abdelrahheem (2012).

Concerning the second research question, Moodle was mainly used to submit assignments, to download course material and to check course announcements corroborating Black *et al.*'s (2007) study in the literature review. The once a week tendency of use on the part of the trainees further confirms the fact that social interaction was not promoted and if it was promoted it was not highly stressed. Tools that reinforce social interaction like forums, chat rooms and wikis were of secondary importance in the trainees' studies, a finding prominently voiced by Demiris (2010) and Filippidis (2008) showing that the culture of regular communication among trainees has not been developed yet in the HOU (Papazoglou, 2015). Finally, the students used the platform to get feedback, a finding closely connected to Ayakli's (2003) study which showed that feedback on the assignments was important in the M.Ed. in TESOL programme of the HOU.

¹¹ Although the researcher tried hard, she could not find studies which refer to the use of the platform in EFL teacher training contexts in Greece. So she does refer to studies related to the use of the platform but in different contexts.

Regarding the third research question, it was found that the trainees wanted a totally different use of the platform based on interaction and collaboration affirming that in distance education students are more satisfied by the provided education if there is a high degree of interactivity with the teacher trainers (Swan, 2001). Also, in the same vein with Kiriakidis (2007) and Rogers (1999), who conjointly claim that the teacher trainers in distance education should develop collaborative approaches of teaching reinforcing interaction, the trainees in the current study expressed a high preference for conversation in forums organized by the trainer. Burns (2011) contests the view that the uses of web 2.0 tools are still limited in the field of teacher professional development so the participants' manifestation of an impressive conversion towards an interactive and reflective use of Moodle with an emphasis on web 2.0 tools proved an apocalypse.

With regard to the fourth research question, a fact, blatantly obvious from the research, was that the current use of Moodle did not approximate, and satisfy the social constructivist criteria for the development of knowledge thus it did not confirm Abdelrahhem's (2012), Chao's (2008), Dougiamas and Taylor's (2003) and Chavan and Pavri's (2004) studies, presented in section 2.3, which respectively considered the theories of constructivism, social constructivism, constructionism and social constructionism as the main theories behind Moodle. The quantitative results, in line with the qualitative analysis, show that the platform did not promote the philosophies on which it is based and thus it did not enhance learning, extending on the one hand Moreno *et al.*'s (2007) study in the literature review and confirming Cole and Foster's (2010) research that Moodle enhances learning on condition that effective educational practices are applied. In conclusion, EFL teacher development was not enhanced because the primary use of Moodle as a high-tech information repository tool and a low or moderate level use of its different tools were identified and a different approach than the highly interactive, discussion-based method favored by most asynchronous online courses appeared. As a result, Lewis *et al.*'s (2005) study in the literature review, that the key to the effectiveness and efficiency of an online course is the usability of an LMS, was corroborated.

5.2. Implications

The above study was an attempt to bring to the fore insights into the use of Moodle which only recently scholars have begun investigating in Greece. As a result, a number of pedagogical implications that should not be discounted became apparent. First, a pedagogical use of Moodle has been unveiled which will exercise influence for future improvements in the technologically enhanced distance based EFL In-service Teacher Education and Training (INSET) teacher training. Second, the idea that proper training on the use of Moodle bears significance in order to acquire the necessary expertise and confidence needed has been stressed. Third, trainees have been provided with a model of how to exploit pedagogically the platform. Finally, the insights gained could point towards key factors for future investigations in the context of EFL teacher education in Greece while at the same time help university efforts towards the elimination of a limited use of Moodle in higher education.

6. Conclusions

LMSs offer a hitherto undreamed of capacity to control and regulate teaching that has led to an eventual cascade of their adoption by many universities all over the world. In the same

vein, Moodle has established itself as a fixture of the Greek higher education landscape in general and the HOU in particular. The purpose of this small-scale study was to offer insights into the contribution of the current use of Moodle to EFL teacher development. Overall, the findings of this study point unequivocally to the conclusion that Moodle did not promote the philosophies on which it is based since collaborative and constructional learning were not promoted. Additionally, the use of Moodle has done little to enhance EFL teacher development and meet the new needs and challenges of higher education in the 21st century because it was mainly used as a tool set for information distribution and administrative effectiveness. Data point to conclusions that lead us back to internal training and training plans that should favor more Moodle features that contribute to interaction and online collaborative learning because it is believed that without them tutors are still not using fully the LMS technology to improve their teaching practice. In order to reap the benefits of a pedagogically sound use of Moodle, it is incumbent of all people involved to display acuity in recognizing that only by applying effective educational practices can the power of Moodle truly be leveraged. LMSs are here to stay and their rapid uptake among the educational community promises that Moodle will remain a critical area in higher education preparing next generation for a workplace that is growing more wired by the day (Klonoski, 2005). This is a fact that should be seriously taken into account by educators because 'if we teach today's students as we taught yesterday's, we rob them of tomorrow' (Dewey, 1916).

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Appendix I: The questionnaire of the research

Questionnaire on the efficacy of Moodle towards in-service EFL teachers' development in the context of the HOU

Dear colleagues,

My name is Theohari Evangelia and I am a teacher of English in a Primary School as well as a postgraduate student in the MA in TESOL programme of the Hellenic Open University (HOU). I am currently writing my dissertation investigating the efficacy of Moodle towards in-service EFL teachers' development in the context of the HOU. Since the Moodle platform was first used by the HOU in 2013, this is a questionnaire directed towards the students who have already used this software tool in their studies. As a current or former postgraduate student in the MA in TESOL programme of the HOU yourself, your contribution to the present questionnaire is considered valuable. I would really appreciate it if you could spend a few minutes to complete the following anonymous research tool. The information provided will be kept confidential and will be strictly used for the purposes of this dissertation. This questionnaire consists of seven sections. Please read each instruction and write your answers. This is not a test so there are no 'right' or 'wrong' answers. The results of this survey will be used only for research purposes so please give your answers sincerely, as only this will guarantee the success of the investigation. Finally, if you need any clarifications or additional information and if you wish to have access to the results of the survey, please feel free to contact me at the e-mail address or telephone number provided. Thank you in advance for your time and help.

Theohari Evangelia

E-mail: etheoh@gmail.com

Telephone number: [...]

SECTION I-ATTITUDES TOWARDS MOODLE

Following are a number of statements on the **attitudes of people towards the Moodle platform** with which some people agree and others disagree. Please indicate your opinion honestly after each statement by choosing the answer that best indicates the extent to which you agree or disagree with the statement.

(Strongly disagree- Disagree-Slightly disagree-Partly agree-Agree-Strongly agree)					
1. Moodle was a useful software tool					
2. I do not have any difficulties using the platform					
3. Moodle increased my motives to learn					
4. Moodle made learning more fun to me					
5. The knowledge I got from Moodle was inferior to that of a traditional classroom					
6. I would recommend others make use of Moodle					

7. Moodle addressed my educational needs.					
8. I was interested in using Moodle					
9. Moodle developed my skills in self-regulation					
10. Moodle developed my skills in self-management					
11. Moodle optimized the learning process					
12. Moodle offered flexibility					
13. Moodle increased autonomy					
14. I did not find Moodle very cumbersome to use					
15. I would like to see Moodle in all my courses					

SECTION II-INTERACTIVITY

Following are a number of statements on **interactivity promoted through the Moodle platform** with which some people agree and others disagree. Please indicate your opinion honestly after each statement by choosing the answer that best indicates the extent to which you agree or disagree with the statement.

(Strongly disagree- Disagree-Slightly disagree-Partly agree-Agree-Strongly agree)					
1. The Moodle platform provided a learning environment for me and my peers based on social interaction					
2. Moodle enhanced the interaction with my instructor					
3. Moodle enhanced the interaction with my peers					
4. Interactivity in Moodle facilitated learning					
5. Interaction gave me the sense of belonging					
6. Through interaction I got new knowledge					
7. Instead of Moodle I preferred using other channels of communication					

8. I did not hesitate to interact through Moodle					
9. I interacted more than I would in a traditional class					
10. The Web 2.0 tools of Moodle facilitated contact					
11. Rather than read content I interacted and did things with it					
12. My learning behavior was best described as collaborative					
13. My general competence in the target language was developed through the social character of Moodle					
14. Moodle increased my motives in doing team work					
15. Interaction helped me get answers to my questions					

SECTION III-REFLECTION THROUGH MOODLE

Following are a number of statements on the **degree of reflection fostered through the Moodle platform** with which some people agree and others disagree. Please indicate your opinion honestly after each statement by choosing the answer that best indicates the extent to which you agree or disagree with the statement.

(Strongly disagree- Disagree-Slightly disagree-Partly agree-Agree-Strongly agree)					
1. Moodle developed my ability in reflective thinking					
2. Reflective thinking developed more through Moodle than through traditional classroom					
3. Moodle encouraged reflective dialogue					
4. Moodle allowed me to see the answers of my peers					
5. Moodle allowed me to get feedback from my peers					
6. Moodle allowed me to create activities for my peers to answer					

7. Teacher's feedback helped me think critically on my answer					

SECTION IV-FREQUENCY OF USE IN DIFFERENT FEATURES OF MOODLE

Following are a number of statements on the **frequency of use in different features of the Moodle platform** with which some people agree and others disagree. Please indicate your opinion honestly after each statement by choosing the answer that best indicates the frequency of use

(never- very seldom-seldom-occasionally-very frequently-always)

I used the platform to:

a) do assignments					
b) work in wikis					
c) get feedback					
d) participate in a discussion forum					
e) check course announcements					
f) answer questionnaires					
g) download course material					
h) submit assignments					
i) take quizzes					
j) participate in a chat room					
k) ask questions					
l) do self-assessment activities					
m) upload material for others to see					
n) see my peers' answers					
o) have social interaction					
p) send messages					
q) receive messages					
r) have peer evaluation					

SECTION V-SUGGESTED WAYS TO ENHANCE LEARNING THROUGH MOODLE

Following are a number of statements on **how you would like to enhance your learning through the Moodle platform**. Please indicate your opinion honestly after each statement by choosing the answer that best indicates your choice (More than one answer is possible)
I would like Moodle to enhance my learning through:

a. I would like Moodle to enhance my learning through teleconference	
b. I would like Moodle to enhance my learning through interactive exercises on the material	
c. I would like Moodle to enhance my learning through videoed material of contact sessions	
d. I would like Moodle to enhance my learning through model answers from previous years	
e. I would like Moodle to enhance my learning through the use of web 2.0 tools	
f. I would like Moodle to enhance my learning through the use of web 2.0 tools	
g. I would like Moodle to enhance my learning through self-assessment quizzes	
h. I would like Moodle to enhance my learning through conversation in forum organized by my teacher	
i. I would like Moodle to enhance my learning through follow-up activities after the end of my studies so that I can consolidate what I have learned	
j. I would like Moodle to enhance my learning through follow-up activities after the end of my studies so that I can consolidate what I have learned	
k. I would like Moodle to enhance my learning through construction and sharing of social artifacts	
l. I would like Moodle to enhance my learning through construction and sharing of social artifacts	
m. I would like Moodle to enhance my learning through team work	
n. I would like Moodle to enhance my learning through reading other students' online submissions	
o. I would like Moodle to enhance my learning through online feedback from my peers on my work	

DEMOGRAPHIC INFORMATION

1. Gender:

Male Female

2. What is your age range? :

22-29 30-39 40-49 50-59

3. What is your educational background? (in case of more answers, please tick your highest qualification)

Master's Degree
Master's Degree in progress
Doctorate Degree
Doctorate Degree in progress

4. Current employment:

State school
Private school
Private foreign
language centre
Private tutoring

5. How many years of teaching experience do you have?

1-5 6-10 11-15 16-20

6. How familiar do you consider yourself with the Moodle platform?

Extremely
very moderately
slightly
not at all

7. Have you got previous experience on the use of the platform?

YES NO

8. How many course modules have you completed so far with the help of Moodle?

This is my first module
2 course modules
3 course modules
4 course modules

9. I logged on to Moodle

Daily
Once a week
Once a month

10. What was the average time you spent on Moodle per week?

1-6 hours per week
More than 6 hours per week

11. I had received training on the educational use of Moodle before starting studying in the HOU

YES NO

12. Basic introductory training on Moodle functionalities would be useful

YES NO

Thank you very much for your cooperation!

Evangelia Theohari (etheoh@gmail.com) has been a teacher of English since 1996. She worked in foreign language institutes from 1996-2003 and she has been a state EFL teacher both in secondary and primary education since 2003. She holds a B.A. in English Language and Literature from the Aristotle University of Thessaloniki and a M.Ed. in TESOL from the HOU. Her research interest includes the integration of technology into EFL teacher education.
