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Exploring the effectiveness of Edmodo on Greek EFL B1 learners' motivation to write

Ερευνώντας την αποτελεσματικότητα του Edmodo στα κίνητρα για την παραγωγή γραπτού λόγου Ελλήνων μαθητών Αγγλικής επιπέδου B1

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The present study aims at investigating the effectiveness of the Edmodo educational social network on Greek High School EFL learners' motivation to write. For this purpose, an Edmodo-based writing project was designed and implemented with the students of a 3rd grade Junior High School classroom. For the collection of data a pre- and post- questionnaire for the students, administered before and after the application of Edmodo, the Edmodo learning platform and the analysis of the students' posts on it during the project and semi-structured interviews to probe deeper into the learners' perceptions concerning the use of Edmodo in writing lessons were employed. The results of the study revealed that the implementation of the Edmodo project had a positive effect on the aspects of writing motivation examined, as a shift in students' attitudes to writing and writing habits as well as increased participation and engagement in the writing process and tasks were detected. The research findings appeared to be quite encouraging, indicating that Edmodo can be a valuable tool in the hands of teachers who seek effective ways to develop, foster and maintain students' motivation to write.

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Η παρούσα μελέτη έχει σκοπό να διερευνήσει την αποτελεσματικότητα του εκπαιδευτικού κοινωνικού δικτύου Edmodo στα κίνητρα Ελλήνων μαθητών Γυμνασίου για την παραγωγή γραπτού λόγου στην εκμάθηση των Αγγλικών ως ξένης γλώσσας. Για τον σκοπό αυτό, σχεδιάστηκε και εφαρμόστηκε στους μαθητές της 3ης Γυμνασίου ένα σχέδιο εργασίας για την παραγωγή γραπτού λόγου βασισμένο στο Edmodo. Για τη συλλογή των δεδομένων, χρησιμοποιήθηκε ένα ερωτηματολόγιο μαθητή πριν και μετά το σχέδιο εργασίας, η πλατφόρμα του Edmodo και η ανάλυση των αναρτήσεων/δημοσιεύσεων των μαθητών, καθώς και ημι-δομημένες συνεντεύξεις που πραγματοποιήθηκαν με σκοπό να εξεταστούν βαθύτερα οι αντιλήψεις των μαθητών όσον αφορά τη χρήση του Edmodo στα μαθήματα

παραγωγής γραπτού λόγου. Τα αποτελέσματα της μελέτης αποκάλυψαν ότι η υλοποίηση του σχεδίου εργασίας στο Edmodo είχε θετικό αντίκτυπο στις πτυχές των κινήτρων στην παραγωγή γραπτού λόγου που διερευνήθηκαν, καθώς εντοπίστηκαν σημαντικές αλλαγές στην στάση και τις συνήθειες των μαθητών απέναντι στη δεξιότητα παραγωγής γραπτού λόγου και αυξημένη συμμετοχή και αφοσίωση στη διαδικασία και τις εργασίες παραγωγής γραπτού λόγου. Τα ευρήματα της έρευνας φαίνεται να είναι αρκετά ενθαρρυντικά, υποδεικνύοντας ότι το Edmodo μπορεί να αποτελέσει ένα πολύτιμο εργαλείο στα χέρια των εκπαιδευτικών που αναζητούν αποτελεσματικούς τρόπους για την ανάπτυξη, ενίσχυση και διατήρηση των κινήτρων των μαθητών στην παραγωγή γραπτού λόγου.

Keywords: Edmodo, motivation to write, collaborative writing, B1 High School learners

1. Introduction

The use of Information & Communication Technology (ICT) in foreign/second language learning (FLL/SLL) has widely spread over the past two decades as the traditional lecture-based, teacher-centered lesson, while effective to a point, does not seem to fully meet the present generation learners' needs, who are growing up surrounded by and using digital tools (Rodinadze & Zarbazoaia, 2012). In an attempt to extend conventional literacy practices and taking into consideration that motivation is one of the determinant factors in successful FLL/SLL, educators have already started harnessing digital communication tools, such as Social Network Sites, since infusing Web 2.0 technology into instruction enhances student motivation (Mills & Chandra, 2011) and social networking in particular provides new opportunities for a more motivated and learner-oriented language classroom (Türkmen, 2012).

One of the most recent technologies applied in language classrooms is Edmodo, a secure social network website specially designed for educational purposes. Although the research on the use of Edmodo is relatively new, there are a number of studies investigating its impact on EFL learners, most of which highlight its positive effect on motivation and writing performance (Duran, 2013; Purnawarman *et al.*, 2016; Shams-Abadi *et al.*, 2015). However, there is still very limited research on its effectiveness on Greek students' motivation (Douvliis *et al.*, 2015; Sotiroudas *et al.*, 2013) and no studies in relation to Greek EFL students' writing motivation in specific.

Considering the above, as well as the fact that the majority of Greek secondary students at state schools appear to be demotivated towards English (Dermanoutsos, 2010), the current case study attempts to investigate the effectiveness of Edmodo on Greek High School students' motivation to write and aims to prove that Edmodo can be effectively implemented into the Greek EFL classroom in order to engage students in the writing process and enhance their motivation to write.

2. Literature review

2.1. Motivational variables in relation to writing

2.1.1. Interest in writing

Interest has been defined as a psychological state that “occurs during interactions between persons and their environment, and is characterized by increased attention, concentration and affect” (Hidi & Boscolo, 2006, p.145). Interest-based motivation has been found to result from either a situational or an individual interest (Hidi, 1990). Briefly, situational interest tends to be evoked suddenly by certain stimuli in the environment and represents a potentially sustainable affective reaction (Lipstein & Renninger, 2007), whereas individual interest refers to both a psychological state and an enduring predisposition to attend to objects and events and to reengage with particular content over time (Krapp, 2000).

The role of interest in writing has been investigated in the light of the above distinction in studies where topic attractiveness has been viewed as the basic motivational source of writing (Benton *et al.*, 1995; Hidi & McLaren, 1991) and interest has been viewed as rather static since students were thought to be interested or uninterested in a specific topic (Boscolo *et al.*, 2007). However, more recently, scholars have conceptualized interest in writing in a different way (Hidi *et al.*, 2002; Nolen, 2003). Arguing that being interested in a topic does not necessarily mean that one is interested in writing as an activity, the above-mentioned authors consider the activity of writing itself as the source of interest. According to Boscolo and Hidi (2007, p.6), interest is rather “a student’s orientation to writing” and students are expected to find writing interesting if the instruction and the classroom activities give them the chance to delve into the attractive and challenging aspects of the activity.

2.1.2. Self-efficacy in writing

According to social cognitive theory, self-efficacy is defined as an individual’s beliefs and personal judgements about their capabilities to perform at a certain level and attain designated goals (Bandura, 1986; Zimmerman, 2002). Self-efficacious people set challenging goals, to which they strongly commit, are willing to expend a great amount of effort to reach them, persisting with their pursuit even when they encounter difficulties, and tend to recover their sense of efficacy in case of failure (Bandura, 1994). Regarding the sources by which people develop their self-efficacy perceptions, Pajares (2003) acknowledges mastery experience as the most influential one, arguing that success raises self-efficacy, whereas failure undermines it.

Self-efficacy for writing refers to individuals’ beliefs of their ability to write certain types of text (Pajares & Johnson, 1994). Although self-efficacy beliefs about writing have received modest attention, the researchers who have explored their effect on writing performance found that the two are related. For example, Schunk and Swartz (1993) reported that self-efficacious writers are more likely to choose to write and persist with writing tasks than students who do not feel competent. Other researchers demonstrated that self-efficacy was predictive of students’ intrinsic motivation to write and writing performance (Pajares & Johnson, 1994, Shell *et al.*, 1995) and that students’ beliefs about their capability directly influenced their apprehension, as students who feel confident of their writing capabilities experience less apprehension compared to those who doubt them (Pajares & Valiante, 1996).

2.1.3. Self-regulation of writing

Zimmerman and Risemberg (1997, p.76) define the term as “self-initiated thoughts, feelings, and actions that writers use to attain various literary goals, including improving their writing skills as well as enhancing the quality of the text they create”. According to a model they developed, self-regulation of writing involves the person, the behaviour and the environment. These elements correspond to three types of categories of self-regulatory influence, namely *personal*, *behavioral* and *environmental* which interact in a cyclic process where writers monitor the degree of success of the self-regulatory strategies they employ and continue, modify or give up what they are doing according to the resulting feedback (Graham & Harris, 2000).

A variety of self-regulated strategies that writers use to control the above mentioned processes have been identified, but Zimmerman and Kitsantas' (1999) analysis takes this descriptive classification one step further to incorporate the developmental sequence of self-regulation in writing and hypothesize that it is divided into four progressive levels. In the first level learners observe a model, in the second they attempt to emulate the model's performance, in the third they apply self-control and in the fourth they adapt their performance to different internal and external conditions.

2.1.4. Writing as a meaningful activity: The socio-constructivist approach

The socio-constructivist approach to literacy learning views writing as a process of meaning construction and assumes that writing is a meaningful activity, a way of expressing ideas in order to reflect, reason and compare, and can produce its own motivation (Hidi & Boscolo, 2006). Studies on the teaching of writing influenced by this approach have highlighted two basic conditions that should be present in order to fuel students' motivation to write: linking writing to other school activities and disciplines and exploiting its social nature (Boscolo & Hidi, 2007). Reasons and occasions to write should not be confined to the teaching of language skills, but writing can be used in various subjects, for many objectives and be practiced in a variety of genres, limiting this way the traditional isolation of academic writing and enabling students to use it as a communication tool (*ibid*). Moreover, when writing is viewed as a social activity and students collaborate to write a text, motivation is most likely to be triggered, as collaboration in a community of writers has been found to have both affective and cognitive advantages (Nolen, 2007).

2.2. EFL Writing in Greek high schools

The recently-introduced FLL curriculum, known as IFLC (2016), specifies descriptors of communicative competence and as far as writing is concerned, it suggests that B1 learners should be able to narrate stories and personal experiences, describe events, feelings and plans, discuss everyday problems in short texts, provide detailed information about themselves, exchange information on everyday social issues, suggest solutions to problems, write comments on blogs or Facebook, express opinion on topics they are interested in and summarize information drawn from multiple sources. They are also expected to be able to mediate in written form between Greek and English.

Although *Think Teen, 2nd Grade of Junior High School (advanced)* (Giannakopoulou *et al.*, 2009a), the coursebook used within the current study, includes a wide variety of genres and states that its purpose regarding writing instruction is learning to write rather than writing to learn (Giannakopoulou *et al.*, 2009b), a closer look revealed that the amount of time

devoted to writing instruction is disproportionate compared to the teaching of other skills, the choice of topics could have been more targeted and suitable to 14-year-old Greek teenagers, model texts provided often deprive students of the chance to express their own voice, create their own plans, make predictions and be creative (Goby, 1997), writing tasks often fail to incorporate process writing and ICT integration is very limited.

Considering the above, it is not surprising that many of the studies conducted in the Greek context investigating students' level of motivation (Dermanoutsos, 2010; Kousta, 2016; Lymperaki, 2015; Papageorgiou, 2007) suggest that Greek EFL learners in state schools tend to be rather demotivated to actively participate in the learning process.

2.3. Demotivating factors in relation to Greek EFL writing

Writing is considered a difficult, cognitively demanding and highly complex activity that tends to generate feelings of anxiety and apprehension and students often construe writing as a rather boring activity or find themselves in a situation of not knowing what to write and thus usually display reluctance and avoidance to do so (Cleary, 1991). Apart from the complexity of the writing process, other explanations for students' lack of motivation to write include the absence of conditions related to the process approach that could make writing attractive and students willing to write, such as freedom of choice of topics, collaborative writing and attention to the process of writing rather than the product, negative attitudes to writing that students develop throughout school years, which can greatly influence learners' self-efficacy perceptions, unattractive writing tasks where students regularly have to narrate, describe or report, mostly working on their own and over relying on model essays, always in paper form, just for assessment purposes and with the teacher being the only audience, which may easily turn writing into a routine practice, and finally the considerably limited explicit strategy instruction and ICT integration.

2.4. The Edmodo educational social network

Edmodo was created in 2008 by two school employees, Nic Borg and Jeff O'Hara, who wanted to bring the school environment closer to the 21st century world and its connectedness (Edmodo.com). Boasting currently around 75 million users worldwide, it has become one of the leading social learning networks devoted to "connecting learners with the people and resources they need to reach their full potential" (ibid, n.p.).

More specifically, Edmodo can be described as "an educational website that takes the ideas of a social network and refines them and makes it appropriate for a classroom" (Cauley, 2012, p.1). It is a free, private, social learning network that provides a secure platform for teachers and students to connect, interact and collaborate since once teachers create a group for their class, the system generates a group code that is distributed to students in order to enroll into the group and in this way privacy is secured since nobody can take part in the group or view its activity without code access. It is often described as 'Facebook for schools' because it resembles its design and interface, but it is considered to have more educational features and gives a clearer and greater emphasis on educational applications (Carlson & Raphael, 2015).

Via Edmodo, teachers and students have numerous options which are all meant to help increase communication. One of its main features is the ability it offers to post and respond to posts in real time through the *Note* tab enabling different types of exchanges to take place (teacher-student, student-teacher, teacher-group and student-group) and facilitating

multiple, simultaneous and dynamic threaded discussions in which members can post and reply to posts by adding attachments or tagging other members. In addition to enabling asynchronous interactions mediated by digital writing, posting content also includes *Assignments*, *Quizzes* and *Polls*. *Assignments* can be created, edited and sent out, attaching any type of file to them, and once they are submitted by students, options of grading and annotating are also offered. *Quizzes* can also be created online and uploaded, allowing teachers to insert files or links to the questions. Finally, teachers can conduct *Polls* for students to vote for virtually anything. *Notifications* inform teachers and students about any activity in their Edmodo group. Other features include checking student progress and awarding *Badges*, uploading files to the *Library* that serves as a cloud storage in which all files are automatically saved and setting a class *Planner* with assignment deadlines, presentations or exam dates.

Being a social software application and Web 2.0 tool, Edmodo largely complies with the principles of the constructivist approach to learning (Vygotsky, 1962) and can effectively assist in building a constructivist learning environment, while it also reflects the central tenet of social constructivism, that learning is a social activity occurring when people interact with others (*ibid*), and basic principles of the theory of connectivism advanced by Siemens (2004). Although the study on the use of Edmodo in EFL education is new, a number of researchers have investigated possibilities of using Edmodo for the teaching of writing and the results of their research mostly reveal that Edmodo can be successfully integrated into writing instruction, effectively developing students' writing skills (Apriani, 2015; Candrasari, 2015; Durán Lara, 2013; Fauzi, 2015; Gardner, 2013; Purnawarman *et al.*, 2016). Apart from the various studies exploring the effectiveness of Edmodo in developing EFL writing skills, Edmodo has also been researched in relation to its contribution to motivation enhancement in FLL. Findings indicate that there are motivational benefits arising from the integration of Edmodo in the teaching process (Al-Kathiri, 2015; Al-Ruheili and Al-Saidi, 2015; Hariri and Bahansal, 2015; Manowong, 2016; Tambunan, 2015; Türkmen, 2012; Yulastri, 2015).

3. The research design

3.1. Aim and research questions

Taking into account the positive results of previous international research in relation to Edmodo, writing and motivation, the present study aimed to investigate the effectiveness of Edmodo on Greek EFL learners' motivation to write.

The research questions posed were the following:

- 1) To what extent can the implementation of Edmodo change students' attitudes towards writing?
- 2) To what extent can Edmodo increase student engagement in writing through collaborative writing tasks?
- 3) In what ways can Edmodo change the writing habits of Greek EFL learners?

3.2. Participants

The participants were 11 students, 8 boys and 3 girls, attending the 3rd grade of a state Junior High School. According to the CEFR, the majority can be characterized as “Independent” users at B1 “Threshold” level, while 2 students were at the B2 “Vantage” level (Council of Europe, 2002).

3.3. Research method

The study made use of a mixed methods research design, combining qualitative and quantitative research tools within one project in order to ensure *triangulation*. According to Cohen *et al.* (2007), relying on a single method may bias or distort the researcher’s view of the observed pattern, but a mixed methods research can bring out the advantages of both approaches and eliminate their weaknesses (Dörnyei, 2007). More specifically, the effect of Edmodo on students’ motivation to write was investigated through a pre-/post-questionnaire, students’ posts on Edmodo and semi-structured interviews with them.

In order to explore students’ writing habits and attitude to writing before and after the Edmodo treatment and detect a possible shift in them a pre-/post- questionnaire was administered, as questionnaires are time- and effort-saving, can gather a great amount of information in a short time and data can be easily processed (Dörnyei, 2007). More specifically, the questionnaire consisted of three parts. The first part comprised questions aiming at gathering factual information about the students. The second part contained attitudinal items regarding the writing skill, all of which were of the four-point *Likert scale* format. The third part consisted of items aiming at collecting behavioral data about learners’ writing habits before, while and after writing. After the Edmodo treatment, the same questionnaire was administered in order to gauge changes in the learners’ writing habits and attitude, but a fourth part was added, in order to explore learners’ perceptions on the effectiveness of Edmodo in relation to their engagement in writing and their motivation.

Students’ posts on Edmodo was another data collection instrument. By observing students’ activity on Edmodo, the researcher gained useful insights concerning students’ engagement in the writing process. During the implementation of the Edmodo project about 300 student posts and replies were exchanged, all of which were task-related.

Finally, semi-structured interviews comprised the last research tool, following Dörnyei and Taguchi’ s (2010) suggestions about complementing questionnaire data with other data collection methods, particularly qualitative ones, in order to address the weaknesses of the quantitative nature of questionnaires, such as their limited scope for in-depth analysis. In particular, a set of open-ended questions was prepared to collect data regarding students’ possible shift in their attitude towards writing and writing habits and their perceptions on the effectiveness of Edmodo on their motivation to write.

3.4. Research procedure

For the purposes of this study, an Edmodo-based writing project was designed and integrated in the classroom procedures for one month. It was linked with the syllabus through topic and task, as the two tasks chosen, a biography of a famous Greek and an advice giving e-mail, were taken and adapted from the coursebook used. The general aim of the Edmodo intervention was to increase students’ engagement in writing through the exploitation of some attractive Edmodo features, such as *Polls* and *Notes*, and enhance their

motivation to write through collaborative writing tasks assigned, actualized and submitted on Edmodo, for which the process writing approach would be followed and peer-editing would be practiced in an attempt to develop students' responsibility and autonomy in learning. Following the framework proposed by Fried-Booth (2002), the project was divided into three stages: planning, implementation and evaluation/feedback, each of which included a series of teacher-designed activities conducted by the students in the school computer lab and through their home computers.

3.4.1. The planning stage

At the beginning of the procedure, the teacher created a group for her class in her Edmodo account and in the first session she distributed the group code to her students in order for them to create their own Edmodo accounts. After they signed up, the rest of the session was devoted to familiarizing them with the features of the platform, as none of the students had ever used Edmodo before. Due to the similarity that Edmodo bears to Facebook regarding its interface, students had already posted their first greeting messages and replies and set up their profiles by the end of the lesson. The teacher awarded *Badges* for profile completion to build extrinsic motivation and together with her students went through a list of netiquette rules about posting on Edmodo to avoid inappropriate content and wandering off the tasks, as there was a chance that students might consider Edmodo as more of a social networking site than an educational tool and participate in more social conversation than academic (Stroud, 2010).

Before the second session, students logged in to Edmodo at home to go through the student guides the teacher had posted and vote in three polls about their first impression of Edmodo and in one poll about the first task they would like to do on Edmodo, out of a list of tasks included in or adapted from their coursebook. This way, interest in the writing activity was generated as learners took initiative in directing their own learning, which was expected to raise their intrinsic motivation. According to the voting results, the majority of students chose to write a biography. The teacher posted a list of famous Greeks for whom students were asked to do some research before choosing the one they wanted to write about in the next session.

In the second session, students voted in the poll with the famous Greeks and according to their votes 4 smaller groups were created, each of which would collaboratively write the biography of the person they had chosen. This way, students' further arousal of interest and involvement in informed decision-making were guaranteed, which was expected to bring about more engagement and intrinsic motivation development, while motivation was also expected to be triggered through the social nature of the activity. As soon as subgroups were created, students started their online research, while the teacher posted useful material on how to write biographies to provide scaffolding. She went through this material with her students, discussed questions on the procedure to be followed and created events in the calendar/planner with deadlines for task stages and completion. This way, a positive emotional environment and a supportive context for writing were created, conditions considered crucial in developing and maintaining motivation.

3.4.2. The implementation stage

During the implementation stage and during the third session, students divided the biography into parts according to a graphic organizer posted by the teacher, which aimed to encourage them to plan, brainstorm and organize their biographies as graphic organizers are

particularly suitable for groupwork, can play a vital role in facilitating the writing process and contribute to motivation enhancement (Egan, 1999). All subgroups found this resource most helpful and decided on their own which parts of the biography each member would write, assuming thus responsibility for their writing, which could lead to increased autonomy and, in turn, internalization of motivation. As soon as they agreed on this, they did more focused research on the person's life and started posting their writing through *Notes* on the subgroup's wall. At the same time, students engaged themselves in peer-editing and peer-feedback among their subgroups, allowing thus scaffolding and learning from each other's contributions and distribution of expertise and authority among group members (Mills and Chandra, 2011). Through the use of the discussion board that Edmodo incorporates, students were encouraged not only to collaborate but also to participate in experiential learning (Brozek & Duckworth, 2011), as they could express themselves there, even the shyer ones, which according to Yulastri (2015) can raise motivation.

The completion of the first draft was assigned as homework and one member in each subgroup put the pieces together and posted a *Note* with the complete biography on the subgroup's wall for partners to see and engage themselves in peer-editing. Students were thus encouraged to engage in the writing process outside the classroom environment aiming thus to make the whole learning experience more meaningful, allowing increased interaction. The teacher provided feedback using comments and a code with symbols for students to engage in self- and peer-correction, fostering thus metacognitive skills (Ertmer & Newby, 1996; Sitko, 1998) and helping students to develop self-regulation of writing.

3.4.3. The evaluation stage

In the fourth session which corresponded to both the implementation and the evaluation stage, groups revised their writing through peer-review and produced their final drafts which they submitted through the *Assignment* post. The teacher gave feedback to final drafts, graded students' work and awarded *Badges* accordingly, while subgroups posted their biographies on the home page of the class group for other students to read and comment in order to enhance their sense of achievement.

The same procedure was followed for the second writing task, the advice-giving email as a reply to an authentic advice-seeking email. Students voted in a poll for the task they wanted to do, out of the choices left from the first poll, and then voted again on which authentic problem they wanted to give advice to. Smaller groups were created to work collaboratively and the project followed the same stages as the first one. The only difference was that, due to the different type of task, the pre-writing stage was given more emphasis as students interacted with and analyzed a model text, which gave them guidance and the opportunity to study an authentic example of the genre they were about to write regarding stylistic features, organizational framework, structural patterns and lexical items. Finally, brainstorming and generation of ideas took place collaboratively within Edmodo in order for students' thinking to be stimulated and prior knowledge to be activated. Having ideas posted on the subgroup's wall instead of taking written notes aimed at greater flexibility, interactivity and motivation during the pre-writing stage (Mogahed, 2013).

4. Presentation and discussion of findings

4.1. Attitudes to writing

The first research question sought to investigate changes in students' attitudes towards writing which was measured through answers to part 2 of the pre-/post- questionnaire and part 4 of the post-questionnaire. According to the results, a notable change was depicted. More specifically, although before the Edmodo writing project a lot of students did not enjoy writing (45.5%) and felt that it was an unpleasant experience (63.6%), these percentages decreased to 18.2 % and 27.3% respectively by the end of the intervention. Moreover, the percentage of students who liked classes requiring a lot of writing increased from 27.3% to 45.4%, while there was a short decrease in the percentage of those who felt bored when asked to write (from 63.6% to 45.5%). Regarding writing apprehension, the comparison of the results revealed a significant decrease of 46%. The percentage of students who avoid writing decreased by half as well. Finally, regarding extrinsic motivation related to the presence of a real audience other than the teacher, although before the Edmodo writing project 72.7% reported that they did not like others to read what they had written and felt uncomfortable with it, fewer students (45.4%) felt like this after the implementation of the project.

This positive shift in students' attitude towards writing was further illustrated by their responses in part 4 of the post-questionnaire where the vast majority of students found writing on Edmodo to be fun (81.8%) and more interesting than traditional writing lessons (90.8%). They also liked doing writing assignments on Edmodo (81.7%), felt enthusiastic to write (72.7%) and would like to take part in Edmodo-based writing lessons in the future (81.8%). Similar evidence was found in Perifanou's (2009), Türkmen's (2012) and Manowong's (2016) research, where the attractive features of Edmodo accounted for more enthusiastic and motivated learners.

These results were further supported by the answers elicited from interview questions where 10 out of 11 students claimed to have enjoyed the writing lessons on Edmodo and admitted a positive change in their attitude towards writing. Most of them (81.8%) described writing on Edmodo as easier and more interesting than traditional writing lessons, except for two students who preferred pen-and-paper writing because they admitted not being used to writing on the computer.

Finally, results regarding students' self-efficacy beliefs appeared interesting. On the one hand, the comparison of the pre-/post-questionnaire results did not reveal any important shift in aspects related to students' writing self-efficacy, which can be explained by the fact that levels of confidence in their writing capabilities were reported high in the pre-questionnaire and thus less possible to be marked by a significant change. However, results from some questions of part 4 of the post-questionnaire indicate that self-efficacy beliefs were further developed as students claimed improved writing ability (72.7%), more confidence in writing assignments (90.7%) and better expression of ideas (72.7%) after the Edmodo implementation, verifying Apriani's (2015) findings, who observed that the use of Edmodo encouraged self-expression and self-confidence in writing.

4.2. Participation in writing through Edmodo collaborative tasks

Students' participation and engagement in the writing process was measured mainly through a close look at students' posts throughout the project and the writings they produced, which revealed encouraging results regarding the potential of Edmodo to foster students' participation in writing procedures and tasks, as reported in Al-Ruheili and Al-Saidi's (2015) study as well. Evidence for such results were provided by the large number, frequency and relevance of students' posts (around 300) that included student-student, student-teacher, student-subgroup and student-whole-class group interactions which led to an increased amount of communication inside and outside the classroom. Such findings are in accordance with Hariri and Bahansal's (2015) findings who reported high percentages of interaction and encouragement of incidental learning through Edmodo.

The posts also show how students collaborated in the production of first and final drafts and engaged in peer-feedback and peer-editing, which is another indicator of their increased participation and sides with Gardner's (2013) view about the usefulness of Edmodo as a communication tool for peer-review. Besides, all students submitted both assignments meeting deadlines, showing thus commitment towards the writing tasks. Finally, increased engagement in the various stages of the writing process was also indicated by the fact that students developed their self-regulation in writing as they tried to correct their own mistakes according to teacher's feedback.

Apart from students' posts and writings, findings of increased participation and engagement are verified by students' responses to interview questions where the vast majority responded that the use of Edmodo motivated them to do their writing assignments (90.9%), that writing collaboratively on Edmodo can improve their writing skill (100%) and that the presence of a real wider audience other than the teacher made a difference on their writing (81.8%), meaning that they were more concerned with the quality of their work and thus engaged in more effort. Similar conclusions were drawn by Purnawarman *et al.* (2016) who reported that students were highly concerned with the quality of their work on Edmodo. A couple of students faced some difficulties with the application and technical problems, but were not discouraged to participate and completed their assignments.

The data obtained from part 4 of the post questionnaire further verified the above findings, since the majority of students stated that they were more motivated to do their writing tasks on Edmodo, compared to when they write on paper (72.7%), and liked groupwork (81.8%), since collaboration offered them support (63.6%) and wasn't problematic (81.8%), which is probably why they would prefer to write collaboratively in the future as well (90.9%). Students' willingness to participate was also depicted in their responses regarding peer review and extended audience. For example, all students were more carefully engaged in revising their work before posting it on Edmodo, compared to handing it in to the teacher (100%), while the majority tried harder because of the extended audience (90.9%), and found peer-feedback useful for self-reflection regarding errors and revision of drafts (90.9%).

4.3. Changes in writing habits

Regarding changes in students' writing habits, the results from part 3 of the pre-/post-questionnaire demonstrated various degrees of change. As far as pre-writing habits are concerned, the analysis of findings indicated a significant change only in the number of students who liked to discuss what they were going to write with their classmates (from 36.3% to 72.7%) and those who don't take into consideration purpose and audience (from

90.9% to 45.4%). A slight increase was detected in the percentage of students who don't need teacher guidance (from 36.3% to 18.2%), indicating a small step towards autonomous learning, and a slight decrease in those who have difficulty finding ideas (from 54.5% to 36.3%) suggesting that collaborative brainstorming applied on Edmodo reduces such difficulties. No shift was detected in other habits, though, suggesting that most students continued preparing for writing in the same way they did before the Edmodo intervention.

Students' while-writing habits mostly remained unchanged as well, but the ones in which an important shift was observed are closely linked to the practices students followed on Edmodo. For example, fewer students stated that their first piece of writing is also the final draft they submit (27.3% instead of 63.6% before Edmodo) and more students preferred collaborative writing (90.9% instead of 27.3% before Edmodo). As for their post-writing habits, all students expressed a favorable disposition towards teacher's feedback indicating errors instead of correcting them (100%), which suggests their preference towards self- and peer-correction and explains the decrease (from 45.4% to 18.2%) in the number of students who just look at the mark and put the essay away. Moreover, most students not only felt comfortable with classmates reading their work (63.6%), but were also interested in peers' views of their writing (63.6%).

Finally, the answers elicited from the relevant interview question revealed a change in some of the students' pre-, while- and after-writing habits, since students reported more discussion of ideas with classmates and more willingness to gather useful information for the topic because researching while online was easier and faster, more revising of content and form, self-correction, peer-editing, online dictionary use, collaborative writing and production of more than one draft. However, there were a couple of students who reported no changes whatsoever in their writing habits.

5. Implications

Taking into consideration the findings of relevant studies in the Greek EFL context that suggest low motivation levels and the factors causing Greek learners' writing demotivation, teachers could exploit Edmodo to instill more positive attitudes towards writing into their students, engage their interest in writing, increase their participation in the writing process, help them develop more positive writing habits and thus ultimately foster their intrinsic and extrinsic motivation to write.

Additionally, the fact that the vast majority of students claimed to have enjoyed the Edmodo-based writing lessons and found them more interesting than traditional writing lessons, while at the same time their writing apprehension was dramatically decreased, suggests that teachers should implement changes to, adapt or enrich their teaching methods in relation to writing and integrate Edmodo as a way of developing and sustaining students' interest in writing and as a means of creating a positive emotional teaching environment.

Furthermore, the opportunity that Edmodo offers for collaborative writing, which had a strong motivational effect on students' degree of participation and engagement in writing processes, should urge teachers to promote and encourage groupwork and peer-review in writing through Edmodo, allowing learners to become more responsible and autonomous and experience feelings of support and a sense of community. This way, learners could perceive writing as a meaningful activity and understand the benefits of the social nature of writing.

Finally, since Edmodo was found to improve students' writing self-efficacy beliefs, educators are encouraged to incorporate Edmodo in their writing instruction in order to help them develop more confidence in their writing capabilities and improve their writing performance, while Edmodo can also be exploited by teachers who want to make their learners active participants in the learning of writing, engaged in enhancing the quality of their writings, fostering thus their self-regulation, as depicted in the participants of this study who were highly concerned with the quality of the work and reported improvement of their writing skill through self- and peer-correction.

6. Conclusion

The findings of the study suggest that the use of Edmodo in writing instruction had a beneficial effect on Greek EFL learners' motivation to write, as it can not only stimulate, but also enhance and sustain it. Firstly, the integration of Edmodo resulted in significant changes in students' attitudes towards writing, rendering their perceptions of writing more positive and stimulating their interest and enjoyment in writing as an activity. Secondly, it brought about changes in students' writing habits, which reflected process writing approaches to a larger extent than before the Edmodo project and contributed greatly to the development of their self-regulation and self-efficacy in writing. Finally, Edmodo had a powerful influence on students' participation in the writing process through its collaborative nature which rendered writing a meaningful activity and fueled interaction, communication and engagement.

Taking into account the positive results the specific Edmodo intervention had but also the fact that the current research was a small-scale one with a limited number of participants, it is recommend that further, wider longitudinal studies be conducted in order to obtain more valid and reliable outcomes regarding the degree of effectiveness of Edmodo in relation to writing motivation enhancement. Quoting Maehr and Meyer (1997, p.378), motivation is "the *sine qua non* for learning", and thus educators, who play a determinant role in influencing students' motivation, should try to take full advantage of the potential of Edmodo since its integration in Greek EFL contexts in order to foster learners' motivation to write seems quite promising.

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