

Technology-Enhanced Foreign Language Learning at University: Students' Progress and Attitude Regarding Various Tools

Anastasia Atabekova, Rimma Gorbatenko, Natalia Belenkova and Kamo Chilingaryan

Peoples' Friendship University of Russia, Moscow

Abstract: The article explores students' academic progress and perceptions regarding the didactic potential of cloud-based Google Apps and traditional university educational web-portal for language for specific purposes learning. The paper starts with literature review, provides the data of pilot training, surveys and correlational study related to students' achievements when learning in the cloud with Google Apps, on the one hand and when using a university educational web-portal, on the other. The paper examines those factors that shape learners' satisfaction and frustration regarding the above learning, addresses the issue of the possible relation between students' socio-cultural background and their opinions and academic progress concerning the chosen tools for training. Finally, the tentative conclusion is drawn on how the cloud-based Google Apps could bring benefits to university students' language for specific purposes learning, in comparison with the university "traditional" educational web-portal.

Key words: Technology-Enhanced Learning • Language for Specific Purpose (LSP) • Cloud-Based Learning • Google Apps for Learning • Student' Reflection on Learning

INTRODUCTION

Current Trends in Using Technology for Education:

The 21st century faces information communication technologies being intensively embedded into various fields and practices of social life, including education. By now there is plethora of publications on best practices that lay special emphasis on web technology-enhanced education, in general and foreign language learning, in particular. The word combination "technology-enhanced education" is widely used as the generalized term regarding e-learning, computer-assisted and web-supported learning with the use of varied computer programs and web-tools. At present, the above educational modes are seen as traditional web-supported ones as no educational institution runs programs without using educational web-based e-portals and standard Web 2.0 tools [1].

As far as innovative tools are concerned both educational institutions and researchers across continents view the cloud as the future of education [2]. Principles and paradigms of cloud computing have been specified against other web-supported phenomena in a number of sources by scholars from different fields of knowledge [3].

Currently researchers have been analysing the effective use of cloud-based technologies and applications (further Apps) in secondary schools [4], high schools [5], universities [6] and corporate institutions [7]. Moreover there is an increasing higher education tendency to develop and foster cloud-based learning environment across the world [8] by integrating the technology into the university learning management system.

In turn from technology to university graduates' competencies, mention should be made that skyrocketing international integration and globalization fosters the objective requirement for university graduates to master foreign languages for specific purposes (further on LSP) for sustainable professional development and fast job promotion [9].

The above state of affairs has made it relevant to conduct the research with the view to understand the cloud-computing technology potential for increasing university students' academic progress in LSP.

The current importance of the research is rooted in the fact that despite a world-wide support of the statement on cloud-based potential for the successful training of competent graduates there is little evidence on the cloud-based Apps efficiency for university students'

foreign language learning [10]. Meanwhile the above phenomenon might be well-timed due to increasing openness and globalization of multilingual higher education.

Research Subject and Study Aims: The research subject is the comparative analysis of innovative cloud-based LSP learning and traditional classroom-focused LSP learning that combines classroom activities and self-studies with web-supported materials, blogging and chatting for learning purposes through university educational e-portal).

The research aims to further the understanding of the cloud technology didactic potential for students' academic progress in LSP competence (comparing with traditional web-supported learning mode), to explore how cloud technology didactic features might contribute to students' advanced academic progress, in comparison with standard web-supported LSP training.

Research Questions: The above aims can be achieved by examining the following questions:

- Can cloud-based LSP learning contribute to students' making more academic progress, comparing with traditional web-supported learning mode?
- What factors might shape students' satisfaction and frustration as regards traditional web-supported and cloud-based LSP learning with Google Apps?
- Might students' opinions on benefits and drawbacks of the chosen learning mode change through the respective training course?
- Do students' opinions and academic progress as regards the chosen training mode differ depending on their social and personal characteristics, including gender, origin (metropolitan/regional), ethnic and cultural affiliation, socio-economic background (family income level)?

Literature Review: An extensive body of literature exists on the second language acquisition that scholars view as multi-faceted phenomenon that needs to be considered from multiple perspectives, including students' needs and abilities, technology support, course syllabus specific requirements due to particular course goals and planned learning outcomes, etc. [11].

As for technology-enhanced foreign language learning both researchers and practitioners agree that technology should be used to foster learner-centered and inquiry-based approaches to training, enhance students'

abilities regarding problem-solving and critical thinking skills, learners' cognitive activities and self-reflections, improve the course guidance [12, 13]. Scholars underline that "although countries have invested heavily in ICT... the ICT efficiency for training outcomes appears not to have solid evidence as there are contradictory results" in research papers [14,15]. Thus, the issue of cloud-based technology didactic potential appears to be well-timed.

Scholars point out that technology can contribute to learners' social inclusion [16]. Thus, cloud-based LSP training has to be designed in the way that could develop and foster this line.

It should be underlined that scholars argue for specific interaction dimensions regarding e-learning [17]. So, cloud-based training highlights the issues of possible specifics concerning collaboration dimensions in the learning cloud [18, 19, 20] and focuses the researcher's attention on those possible ways and tools to use the collaboration potential of the technology under study for increasing LSP learning progress and efficiency.

The above aspect does matter, as the modern university environment is highly diverse in terms of its members' social, cultural, educational background [21, 22, 23].

Scholars have a lot of observed data which suggest that there might be various repertoires concerning students' learning progress and perceptions due to learners' different socio-economic background, ethnic, cultural affiliation, geographical origin [24, 25].

Additionally there is evidence that students' affiliation to Western or Asian culture influences their learning process and perceptions [26].

Researchers point out that student's academic progress depends on his/her ability to interact with diverse environment; the above varies depending upon students' being brought up in different social and cultural contexts [27, 28]. On the other hand, it seems to be productive to take into account S. Pages' opinion that diversity creates better societies [29].

Taking into account the above, the preliminary assumption might be made that the technology under study can foster the learning community, students can benefit from cloud-based LSP learning in terms of socialisation. Thus, the data on students' progress and reflections with regard to cloud-based and standard web-supported foreign language learning in connection with the learners' personal socio-cultural variables should be analysed with the view of furthering cloud-based education development.

In researchers' view, the modern highly competitive global labour market makes students go beyond the LSP objectives that were identified in the past century [30, 31]. Today students are required to focus on content and language integrated learning (further on CLIL) to feel confident when it comes to international research and grant programs or/ and professional performance and activities within international corporate landscape [32, 33]. Currently, scholars and policymakers underline that it is CLIL and not just LSP that is seen as a tool for foreign language immersion in university education [34]. Scholars stress that CLIL ensures "the dual focus on content as well as on language" [35] regarding higher education international integration.

The scholars point out that technology-enhanced foreign language learning requires a specific attention to course syllabus design, tasks and assignments planning [36]. Special emphasis is laid on balanced approaches to training all the speech skills, including not only writing, reading, but also listening, speaking and language mediation that sometimes are not drawn enough attention to concerning cloud-based learning environment [37].

The above analysis puts on the agenda the question whether and how cloud-based modern technologies and applications can contribute to providing students with a strong professional context -focused curriculum, learning resources, etc. with a view to making graduates meet the employer's requirements and conduct professional activities in a foreign language/ in multilingual settings.

MATERIALS AND METHODS

Current educational research often faces challenges when outlining and justifying the preferred ways to study the obtained data, interpret it and comment on the research findings. There is plethora of publications on various research paradigms. The present research supports the idea of integrated approach to the research subject matter and combines the following paradigms:

- transformative paradigm that assumes the social world consideration through the use of multiple perspectives and lenses,
- pragmatic paradigm that focuses on the research problem and combines all approaches to understand the issue,
- realism that argues for independent human values and beliefs that really exist and should be taken into account.

The cloud-based Foreign Language learning with Google Apps also follows the principles of constructivist

pedagogy and collaborative learning principles that are worldwide accepted regarding the modern education theory and practice.

Research Procedures: The research involved the literature review, experimental training, interviews and focus groups, correlational study.

The experiment included the traditional web-supported LSP training (classroom activities and self-studies) and pilot cloud-based training of law students' LSP skills during a four-month period (Legal English setting was chosen due to administrative educational opportunities available for research).

Both groups used the same course package materials with the same assignments.

The students of the "traditional web-supported training" group had to meet twice a week for two hours of classroom activities. They used e-mail and Skype for communication and the university educational portals on which their teachers uploaded the course syllabus, learning and testing materials and additional resources on the Web. The education portal also provided opportunities to chat and blog regarding the current assignments. The teacher recommended students to exchange materials by e-mail three times per week. The teacher had the opportunity to control the activities as students were recommended to put the teacher's e-mail in the copy for instant feedback and consultations.

The pilot group members used the offered teaching materials that were uploaded in the cloud and students performed the assignments using Google docs, presentations, etc. apps. The pilot training group met once a week for two hours of classroom activities and had a two-hour-long webinar each week.

To have an equal frequency of materials exchange and feedback regarding the traditional group contacts, the pilot training members were supposed to upload their works three times a week and the next day peers' comments or error- based analysis from each group member were expected.

Thus, the students of both groups had the same starting set of learning materials, the same quantity of hours for official classroom seminar (or webinar activities) and same frequency of feedback through meetings.

What is more, the training of both groups included the same assignments, same focus on peer-to-peer evaluation, regular teacher and peers' feedback; the mentioned characteristics regarding assessment and evaluation were critical and the same in terms of methodology despite the technology the group used (e-mail and skype exchange or cloud-based communication).

The placement test in Legal English that each group passed at the commencement of the experimental pilot training did not reveal obvious differences between the groups regarding students' competence in Legal English speaking, listening, writing, reading and translation skills (that were trained during students' first year studies from A 2 to B 1 English level).

At the end of the experiment (four months later) all the eight groups did the Legal English Integrated test in writing, speaking, reading, listening and translation (viewed as written mediation process and outcome) skills level (in the direction from B1-to B2 level of Legal English).

Thus, it should be underlined that the students of both traditional and pilot training modes had the same evaluation procedure that covered five speech skills evaluated from the excellent to poor level.

Students from all the above eight groups from four Moscow Universities were participants to the interviews and Focus group discussions that were conducted throughout the experimental training at the training midterm and final stage. The students from both classroom-based and cloud-based groups were involved in the above activities.

The questionnaires combined closed-ended and open-ended questions. This "mixed" form of questionnaire was designed to get most detailed answers from respondents who might have had rather varied opinions.

Focus groups helped to observe the change in students' reflection through training, to specify information from chosen individuals, thus helping to identify pluses and minuses of the technology under study didactic potential or current practices, building recommendations and mapping further research.

The items to be discussed included students' general opinions about the preferred mode of studies, most valued and influential factors and types of assignments, reasons for students' frustration and disappointments with regard to the chosen training mode.

Both interview and focus group surveys took place at the training midterm and final stage.

Research Materials and Technology: In view of the research goals two types of the teaching materials were used in the experimental training. First, the printed textbook on Legal English with links to additional web resources on the educational web-portal; second, a cloud-based Legal English module that kept pace with the traditional web-supported classroom-focused LSP course in terms of the course unit contents, topics, language knowledge and language skills.

The Google Apps technology as a sort of community cloud was used in the integrated form.

Google disc was used to accumulate all teaching materials and students' tasks. Google documents service was applied to compile files of various formats. Google tables were used to introduce statistics regarding language skills progress practice and to reveal and trace each group member's progress regarding all the above mentioned skills. Presentations with videos were prepared including individual projects and mini group member teams. Hangouts were used for chat and video consultations between the group members and the teacher. Google Calendar helped the teacher to organise and manage the student group activities. A set of cloud-based learning modules to train all five speech skills (reading, listening, writing, speaking, mediation as translation and interpretation) were designed for this purpose.

As far as the educational web-portal was concerned it contained the same learning materials, provided the opportunities to blog and chat.

Research Participants: Totally 140 students from Russian Metropolitan universities were engaged in the experiment.

The experiment covered 4 Russian metropolitan universities, where the authors of the present article were invited to teach Legal English to Law students.

Two student groups were formed in each university for the experiment purposes. The first group in each institution was involved in the pilot training. The second group in each institution was subject to parallel traditional classroom-based LSP skills training.

It is worth mentioning that at each institution students were invited to participate in the experiment on the voluntary basis and it was each student's individual choice to be a member of pilot cloud-based or traditional "class-room based" training.

Participants selection criteria included students' socio-economic background (well-off/ average income/ law income families), students geographical origin (students who were brought up in the capital/ students who were brought up in other Russian regions), students' gender, ethnical and cultural affiliation.

Students were 19-21 years old. Each group comprised balanced number of students from well-off, average income and low income families. In each group there was a balanced distribution of Muscovites and students, who came from other regions to study in Moscow.

In each group there were from 13 to 15 students who were proportional representatives of at least 5 ethnic communities and affiliated themselves either to Western or to Asian culture.

Each group included relatively 50 to 50 percent of the students in terms of male and female gender distribution. The above list of selection criteria formed the set of respective variables for data collecting and statistic processing. Students' possibilities to access the web-based resources were also taken into consideration through the experiment.

Data Collecting and Statistic Processing Methods:

As regards data collecting and processing methods, the research combined quantitative and qualitative approaches that made it possible to study both figures (statistical data) and texts (interviews, focus groups). This approach keeps pace with many scholars who view quantitative and qualitative methods as complimentary ones [38].

A set of statistic methods was used to conduct data processing, including cluster, discriminant and factor analyses. A cluster analysis helped to identify homogeneous groups relating to students' perceptions on both cloud-based and traditional LSP learning process and outcomes. A discriminant analysis contributed to the above clusters' detailed profile in terms of those factors that specify the student's individual perception, learning barriers and achievements and the group's characteristics in the whole. A factor analysis resulted in specifying those variables that turned out to be critical regarding cloud technology efficiency for students' LSP learning.

The t-test was applied to evaluate the significance of the different variables and to determine statistically significant differences. Statics data processing was run in the SPSS.

Research Results

Students' Progress in Legal English Through Training:

The students' level of Legal English mastery was tested at both the commencement and completion of the course, respectively.

The placement tests in Legal English revealed the same Legal English communicative competence level in both pilot groups and those who followed the traditional learning format.

12 % of the students in each group got excellent marks for B1 level test of Legal English at the commencement of the course.

Only 36% of the students in each group got good marks for the above test.

38% of the students in each group got satisfactory marks.

14% of overall students in each group got poor marks due to their failure to cope with speaking and translation assignments within the integrated Legal English Test [39].

At the end of the term students from both pilot groups and those who followed the traditional learning format passed the final test in Legal English.

The cloud-based Legal English training turned out to be more successful in relation to students' marks, integrated results are shown in Fig. 1.

26% of the pilot groups' students got excellent marks, while only 15% of the students who continued the traditional classroom based Legal English learning got excellent marks.

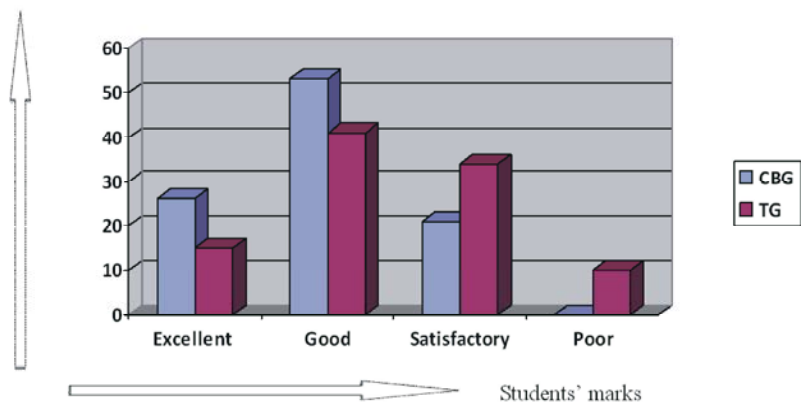


Fig. 1: Students' progress in Legal English
 CBG – cloud-based pilot group; TG- traditional learning style group;
 Percentage of students who got the respective marks

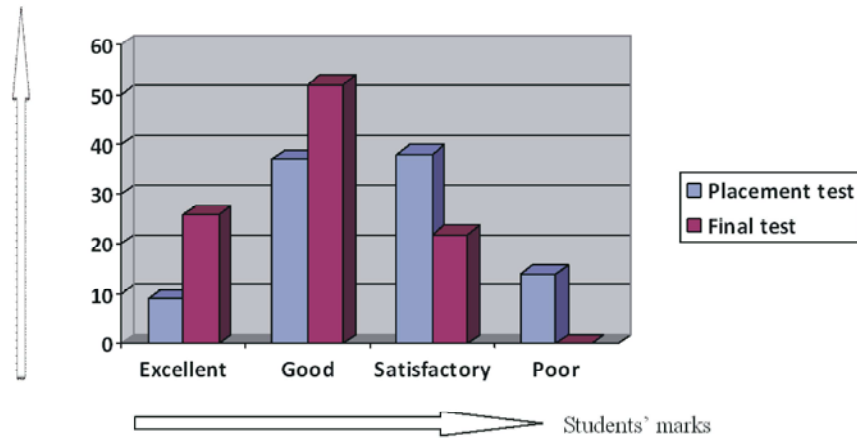


Fig. 2: Pilot group students' marks for the integrated (5 speech skills) placement and final tests in Legal English; Percentage of students who got the respective marks

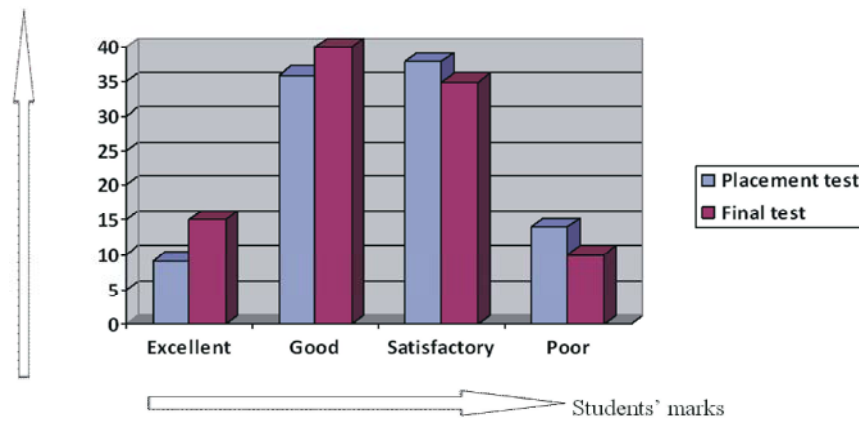


Fig. 3: Traditional group students' marks for the integrated (5 speech skills) placement and final tests in Legal English; Percentage of students who got the respective marks

52% of the students from the pilot training groups got good marks, while 40% of the students from the traditional class-room based Legal English learning got good marks.

In the groups that based their learning on cloud technology no students got poor marks, 22% of the students got satisfactory marks.

As regards the groups that followed traditional learning style the picture differs in the following aspect: 35% of the students got satisfactory marks, on average, 10% of the students in three groups got poor marks due to their failure to cope with speaking, writing and translation assignments within the integrated Legal English Test.

The comparative analysis of students' scores for the integrated placement and final tests in Legal English proved that the cloud-based training contributed to more sustainable and stronger progress in Legal English in the pilot group than

in the groups that followed the traditional learning style.

The above becomes obvious if to compare the percentage of excellent, good, satisfactory and poor marks for the placement and final tests in the pilot and traditional training groups, the relevant data are introduced in Fig. 2 and Diagram 3 [40].
Students' marks

Students' Marks: The above diagrams form a picture of a strongly different degree of students' progress and learning outcomes in pilot and traditional groups.

Mention should be made that through cloud-based training the percentage of students' satisfactory and poor marks went down dramatically (from 38% to 22% and from 14% to 0, respectively), while the percentage of students' excellent marks increased trebled and the percentage of students' excellent marks increased by 30% [41].

Table 1: Clusters, characterizing students' opinions of the chosen mode of the Legal English course

Clusters, characterizing students' opinions	Percentage in surveys	
	The mid-term survey	The end course survey
Cloud-based training		
Students who appreciated the cloud-based course and would like to be trained in the chosen mode further on.	37%	83%
Students who considered the cloud-based course interesting but disliked the fact it took more time to do the assignments.	43%	13%
Students from cloud-based training group who wanted to proceed with the classroom-based learning	20%	6%
Traditional mode of studies	The mid-term survey	The end course survey
Students who were satisfied with the learning mode	72%	23 % (partly satisfied)
Students who were not satisfied with the learning mode	28%	77%

As regards students' progress and learning outcomes in traditional groups, the percentage of poor and satisfactory marks went down slowly (from 38% to 35% and from 14% to 10%, respectively), while the percentage of students' excellent marks increased threefold and the percentage of students' good marks increased by 30% [42].

As regards students' progress and learning outcomes in traditional groups, the percentage of poor and satisfactory marks went down slowly (from 38% to 35% and from 14% to 10%, respectively), the percentage of students' excellent marks showed less than a twofold increase (from 9% to 15%) and the percentage of students' good marks increased by 10% (from 36% to 40%).

The above data were not sensitive to the variables of T-test result proved there was no significance difference of students' progress in LSP related to their gender ($p > 0, 05$), geographical origin ($p > 0, 03$), family income ($p > 0, 04$), affiliation to ethnic community ($p > 0, 04$), affiliation to Western or Asian culture ($p > 0, 03$) [43].

Change in Students' Opinions Through Training:

First, it is worth of note that students' views and the degree of satisfaction regarding the chosen training mode changed dramatically through the course study.

The cluster analysis resulted in specifying the following clusters relating to students' satisfaction of the chosen mode of studies and revealed the change in the clusters density along the course [44].

Mention should be made that among those 37% members of the cloud-based learning communities from the first (mid-term) focus group who appreciated the course positively $\frac{3}{4}$ were Muscovites. What is more $\frac{1}{4}$ of the group was represented by students who arrived at Moscow universities from other regions. This 37% group members came from average income and well-off families, representing various ethnic groups and nationalities.

Among those 43% who said that that the offered mode of studies was interesting but took more time to do the assignments the average 21% comprised Muscovites and 22% came from other regions. Representatives of all the ethnic groups entered these 43%. Students from well-off families formed 31 %, while those from families with average and low income represented 6% each.

As regards those 20% of the students who said they would like to proceed with the classroom-based learning there was 9% of Muscovites from low income families, representing various ethnic groups and nationalities. Students-representatives of low income families from other regions formed 9% and students-representatives of average income families from other regions formed 2%.

The above listed percentage was not sensitive to students' gender ($p > 0, 02$), ethnic affiliation ($p > 0, 03$), or cultural attribution to West or East ($p > 0, 02$) though it revealed the difference between students' satisfaction of the chosen learning mode in view of their origin and socio-economic background. The discriminant analysis identified as statistically significant students' family income ($\lambda = 0,58, \chi^2 = 5,65, p < 0,02$), and students' metropolitan/other Russian region origin ($\lambda = 0,51, \chi^2 = 3,40, p < 0,01$).

As for the traditional web-supported training the first mid-term focus group among those 72% of this community were satisfied with the learning mode and environment, including $\frac{1}{4}$ of Muscovite students who represented low income families with limited access to the web resources. Other $\frac{3}{4}$ of the above 72% were students who came from other regions to study at Moscow universities, but they lived in students' residences with limited access to web-based learning environment. 28% of the students who participated in the traditional mode of studies said they were not completely satisfied as they would like more collaboration in English, more project-based Legal English learning on the real professional world examples.

The above listed percentage was not related to students' gender, ethnic or cultural affiliation ($p > 0,01$) though it showed the difference between students' satisfaction of the chosen learning mode in view of their socio-economic background and technology access. The discriminant analysis revealed that the following variables were statistically significant: students' family income ($\lambda = 0,245$, $\chi^2 = 4,65$, $p < 0,01$), students' metropolitan/other Russian region origin ($\lambda = 0,134$, $\chi^2 = 3,1$, $p < 0,01$), technology access and quality ($\lambda = 0,213$, $\chi^2 = 4,05$, $p < 0,01$).

When analyzing participants' attitude to their chosen mode of studies at the end of the course the following should be highlighted pertaining to students' origin, social background, ethnical and religious affiliation.

Among those 83% of the members of the cloud-based learning communities who appreciated the course there was a proportioned balance of Muscovites and students who arrived to study at Moscow universities from other regions. These group-members came from families with different incomes, representing various ethnic and cultural communities.

13% of the learners said the offered mode of studies was interesting but still pointed out they disliked the fact that the chosen mode of learning required more time to do the assignments. These 13% of the students represented well-to-do families that lived in Moscow and in other regions, representing various ethnic and cultural groups.

In each of the four cloud-based learning groups there was 1 student who said he/ she did not like the course as it required too high level of interaction, dependence upon the collaboration with other peers in terms of assignments fulfillment and dependence upon the technology and web-access. Among these ones there were 2 male and 2 female students, 2 Muscovites from well-off families with mixed cultural background (parents belong to different ethnic groups and religious communities) and 2 students who came from other regions and represented well-off families with Russian and regional ethnic background, respectively.

The overall percentage was not sensitive to students' origin, ethnical and cultural affiliation, gender ($p > 0,01$). The discriminant analysis revealed the statistical significance of students' family income ($\lambda = 0,111$, $\chi^2 = 4,00$, $p < 0,0001$), technology access and quality ($\lambda = 0,113$, $\chi^2 = 3,05$, $p < 0,001$).

As regards the traditional training, the second focus group at the end of the course showed the following results. 23% of the students were partly satisfied with the

learning mode and environment. Among them there were $\frac{1}{4}$ of Muscovite students, who represented low income families with limited access to the web resources. Other $\frac{3}{4}$ of the above community were students who came to study at Moscow universities, lived in students' residences with limited access to web-based learning environment. Other 77% of the students from the group with traditional learning mode expressed their dissatisfaction for lack of communication in the legal setting, lack of collaborative activities in the quasi-professional legal settings, low final test score results, etc. and said they would like to be involved in the cloud.

The overall percentage was not sensitive to students' origin, ethnical and cultural affiliation and gender regarding the above variable ($p > 0,01$). The discriminant analysis revealed the statistical significance of students' family income ($\lambda = 0,111$, $\chi^2 = 4,00$, $p < 0,0001$) and technology access and quality ($\lambda = 0,113$, $\chi^2 = 3,05$, $p < 0,01$).

Students' Satisfaction with Regard to the Chosen Mode of Training:

The factor analysis was aimed to identify positive experiences and most important things that students had got through the chosen mode of training. According to the above listed data, the overall factor analysis revealed 13 factors that accounted for 86 % of the variance.

The students' opinions survey and data processing resulted in the following list of cloud-based Legal English learning positive factors.

1st factor: Students' permanent involvement in learning (in contrast to classroom based activities for which ones it would be enough to do home task a day or two before the lesson) (0.972), the item was mentioned by 96% of the respondents.

2nd factor: Balanced integration of individual and team-based assignments, focus on team-based tasks, that laid grounds for learning from each other as learners observed, commented, corrected, added each other activities and materials in the cloud (0.964), the item was mentioned by 94% of the respondents.

3rd factor: High level of materials sharing between the group members as another instrument for additional learning resources and openness of content and knowledge (0.935), the item was mentioned by 91% of the respondents.

4th factor: More opportunities for each student to get the teacher's individual feedback regarding the learner's activities (0.912) the item was mentioned by 89% of the respondents.

5th factor: Free access to learning materials anytime (0.903), the item was mentioned by 87% of the respondents).

6th factor: "Live" Legal English from authentic up-to-date sources and real world settings (0.897), the item was mentioned by 86% of the respondents).

7th factor: Diverse and well-structured learning materials (0.879), the item was mentioned by 85% of the respondents).

8th factor: Opportunities for learners to keep track of each other's progress, to compare one's own achievements and drawbacks with the other group members, to learn from other group members (0.865), the item was mentioned by 83% of the respondents.

9th factor: The technology contributed to organizing the group as the learning community (0.841), the item was mentioned by 83% of the respondents.

10th factor: Multi-directional collaboration between the learning group members (one-to-one, one -to-many, subgroup-to-subgroup, across subgroups, outside the learning group with representatives of outside professional communities, namely lawyers and legal translators) (0.834), the item was mentioned by 81% of respondents.

11th factor: Integration of individual's prior and obtained-through-course knowledge and the learning group-produced knowledge (0.787), the item was mentioned by 78% of the respondents.

12th factor: Emerging contacts with professionals from web-based legal and translators' networks additional knowledge regarding both language and legal content in English (0.765), the item was mentioned by 75% of the respondents.

13th factor: Diversified learning materials, prepared not only by the teacher but also by the peers; the above provided additional drills regarding various speech skills and language units use, (0.741), the item was mentioned by 75% of the respondents.

The factors percentage showed no respondents' particular opinions depending on social or cultural background as no statistical significance was identified regarding the variables that included students' gender ($p > 0, 03$), cultural affiliation ($p > 0, 02$), ethnic attributions ($p > 0, 04$), geographical origin ($p > 0, 02$), family income ($p > 0, 03$).

As for students' opinions regarding the traditional web-supported learning style the factor analysis resulted in the following list pertaining to learners' positive experiences and most important things that students had got through the above learning format.

1st factor: Face-to-face discussions with peers and teachers, eye contact (0.88), the item was mentioned by 87% of the respondents.

2nd factor: Opportunities to practice oral communication skills in Legal English environment (0.83), the item was mentioned by 84% of the respondents.

3rd factor: Clear timetable, scheduled meetings with peers and the teacher in the classroom (0.81), the item was mentioned by 82% of the respondents.

4th factor: Clear course structure reflected in the textbook content, each lesson well-planned, clear cut list of additional resources (0.51), the item was mentioned by 51 % of respondents.

The respondents' opinions did not correlate with students' gender ($p > 0, 02$), origin ($p > 0, 02$), cultural affiliation ($p > 0, 01$), ethnic attributions ($p > 0, 01$), family income ($p > 0, 03$).

According to the above listed data, the overall factor analysis revealed four factors that accounted for 61 % of the variance and characterized students' positive opinions on traditional web-supported LSP learning.

Students' Frustration with Regard to the Chosen Mode of Training:

One of the most interesting aspects of the research seems to be the analysis of those disappointments students had experienced through the chosen mode of training.

The factor analysis helped to precise the list of negative points that students involved in the cloud-based training mentioned.

According to the data, the overall factor analysis revealed 5 factors identifying student's disappointment with cloud-based LSP learning that accounted for 61 % of the variance. The list included the following factors,

for some of the variables characterizing learners' socio-cultural profile turned out to be statistically significant.

1st factor: Group members' different level of discipline regarding the assignments fulfillment and submission (0, 787); the item was mentioned by 42% of the learners, the above percentage showed no respondents' particular opinions depending on students' gender ($p > 0, 01$), cultural ($p > 0, 01$), ethnic affiliation. These figures make us suppose that student's origin and to some extent social background appeared to be statistically significant ($p < 0, 01$), as the above claim was articulated by 21% of the students of various nationalities who came to Moscow from other regions from low and average income families and 20 % of Muscovites from low and average income families.

2nd factor: Failure to access the learning materials due to technology malfunctioning (0.52), the item was mentioned by 21% of the learners of different gender, ethnic affiliation, all of them had come to Moscow from other regions and lived in residences with poor internet access, that made this characteristics statistically significant ($p < 0,01$).

3rd factor: Some tasks required a higher level of LSP mastery than students had (0.43), the item was mentioned by 19% of the learners of various nationalities, both Muscovites and representatives from other Russian regions, the figure did not reveal any relation to students' gender, ethnic, cultural affiliation, family social background, etc. ($p > 0, 01$).

4th factor: Lack of face-to-face communication, there should have been more cloud-based video conferencing to increase face-to-face-communication percentage (0.57). The item was mentioned by 27% of the learners, including 21% of the students of various nationalities who came to Moscow from other regions from low and average income families and 8 % of Muscovites from low and average income families, so, only family income parameter was statistically significant ($p < 0, 01$).

5th factor: Some lack of structured control from the teacher over each student's workload; there should be a substantially strict teacher's control of tasks distribution between the group members (0.52). The item was mentioned by 21% of the learners, including 14% of the students of various ethnic affiliation who came to Moscow from other regions from low and average income

families and 9 % of Muscovites from low and average income families; so, again only family income parameter was statistically significant ($p < 0, 01$).

In relation to the students who followed the traditional web-supported learning style, the factor analysis revealed the list of critical points that students considered as negative.

Under the collected data, the overall factor analysis revealed 9 factors characterizing students' disappointment with traditional web-supported LSP learning that accounted for 73 % of the variance.

The List Included the Following Factors:

1st factor: Father academic style of learning with limited inclusion of real world tasks, little was learnt about possible challenges that legal professionals might come across while working in multilingual or English-based professional settings (0.94). The item was mentioned by 91% of the learners of various nationalities, both Muscovites and representatives from other Russian regions, the figure did not reveal any relation to students' gender, origin, cultural or ethnic affiliation, social background ($p > 0, 01$).

2nd factor: Low level of interaction between the group members, sometimes lack of communication that was a must to get ready for class-based presentations, etc. (0.92), the item was mentioned by 89% of the learners, the figure did not reveal any relation to students' gender, origin, cultural/ethnic affiliation, family social background ($p > 0, 02$).

3rd factor: Apparent lack of assignments and time for legal English writing and listening skills (0.89), the item was mentioned by 84% of the learners, the percentage was not sensitive to any students' characteristics.

4th factor: Lack of time to analyze translation strategies and techniques applied by peers in their home tasks (0.81), the item was mentioned by 84% of the learners, the figure did not reveal any relation to students' gender, cultural/ethnic affiliation, etc. ($p > 0, 01$).

5th factor: The classroom-based format was not enough to properly structure the group members diversity of views and opinions regarding legal case studies in English (0.79), the item was mentioned by 68% of the learners, the figure did not reveal any relation to students' social, cultural family background);

6th factor Little visibility in terms of opportunity to compare individual and other group members' progress and its quality (0.75). The item was mentioned by 65% of the learners, among them 51% of the students of various nationalities who came to Moscow from other regions from low and average income families and 49 % of Muscovites from low and average income families, the percentage was sensitive to the family income variable ($p < 0, 01$).

7th factor: The learning mode required too much time to be spent on using e-mail to prepare for project-based and case studies activities (to specify the tasks distribution, to share individual assignments for comparison, to exchange information, etc.) (0.73), the item was mentioned by 63% of the learners, the figure did not reveal any relation to students' origin, gender, cultural/ethnic affiliation, family income, etc. ($p > 0, 01$).

8th factor: Few tasks and assignments (may be due to lack of time)for self-studies that laid grounds for legal content research in English (0.62), the item was mentioned by 59% of the respondents, the percentage was not sensitive to any variables that could characterize students.

9th factor: Assessment system was too formal, with no regard to student' s individual input, approach, creative attitude to the course (0.52), the item was mentioned by 48% of the respondents, with no statistically significant variables.

The overall research results shed new light on the cloud-based technology as learning environment and didactic phenomenon.

DISCUSSION

The research has revealed that the technology under study has its didactic advantages that contribute to students' academic progress; the above covers all five speech skills, namely reading, writing, listening, speaking and mediation in relation to students' legal content and language competence that is crucial for learners' future career.

The data presented in the Research results section on the academic progress of the students involved in the cloud-based training makes it possible to state that cloud-based mode contributes to the learning group collective advancement and supports the statements about the role of the learning process openness for learning group collective advancement [39].

The research made it possible to identify a list of factors that shaped students' satisfaction related to cloud-based LSP learning. It appears of current importance to underline that students' positive evaluation comprised all the training course components, including its structure, activities, the role of participants (teachers, students and outside professional language and law specialists), collaboration dimensions, learning resources design, tasks and challenges from the real world, the assessment procedure, etc. Meanwhile, students involved in traditional web-supported training mentioned only the oral classroom-based activities as laying grounds for face-to-face communication and clear cut time table of meetings and precise list of learning materials, as well. The above pluses should be transferred to the cloud-based learning environment when planning cloud-based learning content that should comprise a most possible list of resources for assignments and their detailed explanations; besides the teacher should envisage students' interest in face-to-face communication and offer more opportunities to "live" communication in the cloud.

The overall factor analysis revealed the overwhelming dominance of students positive opinions through the cloud- based training (13 positive factors against 4 negative ones) and prevailing frustration of students involved in traditional web-supported LSP training (9 negative factors against 5 positive ones).

Moreover, both the interviews and the factor analysis proved the positive dynamics of students' hopeful and confident reflections on the cloud-based training and learners' negative feedback increase towards traditional web-supported mode. Thus, the research enhances theoretical assumptions and best empirical evidence from the researchers who point out the technology potential in creating a dynamic classroom development [40]. The present research revealed how students' perceptions of the chosen training mode could change through the learning process and identified possible ways for the cloud-based technology to provide a dynamic LSP learning in university divers environment.

The overall list of students' positive and negative opinions on the chosen mode of training contributes to the general assumption of the technology efficiency for teaching in higher education [41], specifying the above to the cloud technology application for LSP training in diverse university environment.

Focus should be laid on the issue of possible correlation between students' opinions and academic progress towards the chosen training mode and their social and personal characteristics.

As the research findings revealed no such variables as gender, ethnicity, affiliation to either Western or Asian culture appeared to be statistically significant for the issues related to students' academic progress, satisfaction or frustration through the cloud-based/traditional web-supported training mode. Meanwhile, geographical origin, family income and technology access turned out to be statistically significant in terms of students' changing attitude and frustration about the chosen mode of studies.

According to the research findings, students from low income Muscovite and other regions families showed less aptitude to cloud-based learning. This fact fosters the argument on existing Digital Divide due to students' different family social backgrounds as both family income and the region economic development influence the level of technology awareness, what in turn, affects technology use and outcomes [42].

As some students might not be completely aware of the cloud-based learning concept they might not be willing to admit their lack of knowledge about cloud-based learning and prefer to hide the fact under the mask of dislikes or other reasons. In other words, some students fail to be "digital natives in the cloud". The above assumptions and considerations support the arguments of those researchers who underline the importance of technology being accepted by the learners, on the one hand and the must for teachers to understand the level of technology acceptance amid the training community members [43]. Thus, additional time and teacher's special activities regarding the course instructions are necessary to motivate students with the view of increasing their academic progress.

Significant weight should be attained to the fact that the cloud-group members from all the four universities mentioned they had experienced some problems at the commencement of the course regarding the organizational communication as the peers' aptitude and readiness for cloud-based interaction and communication for learning purposes varied in terms of frequency, systemic approach and consistency.

Furthermore, the individualistic nature of students for well-off families should not be underestimated as scholars point out that some students' possible "elitism" self-perception might be a stumbling block in the group collective academic advancement and social inclusion [44].

CONCLUSION AND RECOMMENDATIONS

The analysis of students' academic progress and consideration of learners' reasons for satisfaction and frustration related to different technology-enhanced training modes lay grounds for mapping possible ways for the cloud technology use to bring benefits to university students' LSP learning, in comparison with traditional web-supported LSP training mode.

First, the cloud-based Google Apps might contribute to students' academic achievements, social and professional maturity in case the above technology would be used to organize the learning/training process as a permanent and structured participants' collaboration. The participant interaction should go beyond the widely accepted web-based distributed home tasks performance and their classroom-based presentation and discussion. The cloud technology should be used to enhance the learning- training collaboration dimensions (including individual and collective interaction between peer students, the teacher, specialists from the outside world in the course of assignments performance).

Second, students pointed out that the cloud-based training organized them as a group in terms of discipline, tasks distribution, individual knowledge, opinions sharing. Thus, the cloud technology could foster the learning community and help students benefit from cloud-based LSP learning in terms of their socialization and adaptation to a diverse socio-cultural environment.

Next, the cloud-based Google Apps could be a powerful tool to develop socio-cultural mediation skills for educational purposes, by means of legal language, in legal settings; the carefully designed cloud LSP course could make students collaborate with each other and mediate across the learning community that is diverse in terms of socio-cultural landscape.

Thus, the cloud could change the learning goals and outcomes in such a way that the respective technology-based course would provide students with strong professional context -focused curriculum, learning resources, etc. The cloud-based course contributes to enhancing legal knowledge in English, increases awareness of legal cultures, practices, high profile cases, documents structure in a foreign language, mediating, speaking, listening, reading, writing skills, enhances students' abilities regarding problem-solving and critical thinking skills, learners' cognitive activities and self-reflections. The above goals and outcomes go beyond the average traditional web- supported course that focuses

on terminology, Legal English speaking and reading skills, lack of time and assignments to balance all LSP speech abilities, namely writing, speaking, listening, reading and mediating.

Domain-specific knowledge creation is considered to be an intrinsic part of LSP learning. With this view, the cloud might contribute to better academic progress provided that the technology is used to change the essence of educational process. The cloud-base Google Apps make learners collectively produce new individually meaningful knowledge regarding the future profession-related fields in a foreign language and go far beyond the standard web-based training of vocabulary, terminology and grammar, oral and partly written foreign language skills development through classroom activities and web-supported self-studies.

With reference to the assessment procedure, the cloud might transform it into an ongoing multidirectional process, that combines guidance, supervision and on-going evaluation and that is conducted both by the peers and the teacher. The above social agents operating in the cloud create the evaluation process as expanded and detailed analysis of achievements, drawbacks and recommendations for further improvement. Mention should be made in this regard that traditional web-supported language learning includes no peers' mutual assessment as an indispensable part of the learning process. Furthermore, the cloud-based learning allows the teacher to keep visual track of each student's learning activities, their frequency, scope, quality and provide each learner with up-to-date individual recommendations.

As learning materials and objects are integral to successful training the cloud could be used to build up training on the up-to-date resources from real-world professional settings to increase students' motivation to learn language for professional career. The cloud could accumulate more learning objects, the above objects are more diversified as they are designed both by teachers and students. Thus they meet students' varied needs with regard to grammar and vocabulary drills, all speech skills training; each student has most excellent possibilities for 24 hour access to all possible sorts of learning resources.

Furthermore, the cloud-based Google Apps could increase students' motivation as the technology creates a visible learning environment in which each learner's involvement can be traced, each student's academic progress can be compared with the other peers' input and

outcomes. This situation prevents learners from lagging behind and makes the overall learning process more competitive, thus motivating everyone for everyday activities (not just once a week right before the lesson).

Finally, cloud-shared learning environment requires each student's involvement and cooperation with other peers, that in turn, encourages peers' mutual support, increased shared knowledge, reciprocal training.

The above listed unveils the pivotal role that the cloud could play in enhancing students' academic progress, social experience and professional competences development.

CONCLUSION

The cloud-base Google Apps make learners collectively produce new individually meaningful knowledge regarding the future profession-related fields in a foreign language and go far beyond the standard web-based training of vocabulary, terminology and grammar, oral and partly written foreign language skills development through classroom activities and web-supported self-studies. With reference to the assessment procedure, the cloud might transform it into an ongoing multidirectional process, that combines guidance, supervision and on-going evaluation and that is conducted both by the peers and the teacher. The above social agents operating in the cloud create the evaluation process as expanded and detailed analysis of achievements, drawbacks and recommendations for further improvement.

REFERENCES

1. Roberts, G., 2003. Teaching using the Web: Conceptions and approaches from a phenomenographic perspective. *Instructional Science*, (31): 127-150.
2. Sultan, N., 2010. Cloud computing for education: A new dawn? *International Journal of Information Management*, 30(2): 109-116.
3. Buyya, R., J. Broberg and A. Goscinski, 2011. *Cloud Computing: Principles and Paradigms*. New York, USA: Wiley Press, pp: 644.
4. Khamis, N. and A. Sharizah, 2010. Harnessing the Power of Cloud Computing for interdisciplinary project work in Ngee secondary school (Singapore). In the ICERI2010 Proceedings, pp: 3924-3932.

5. Aloraini, S., 2013. Using Cloud Computing in Public High School: From the Point of View of Computer Teachers. In the INTED2013 Proceedings, pp: 428-4435.
6. Tumbas, P., P. Matkovic, M. Sakal and S. Tumbas, 2014. Exploring the Potentials of Cloud Computing in Higher Education. In the INTED2014 Proceedings, pp: 2624-2631.
7. Papakonstantinou, D., M. Poulymenopoulou, F. Malamateniou and G.A. Vassilacopoulos, 2011. Cloud-based semantic wiki for user training in healthcare process management, Stud Health. In: TechnolInform, 169: 93-97.
8. Koutsopoulos, K.C. and Y.C. Kotsanis, 2014. School on Cloud: Towards a paradigm shift. Themes in Science and Technology Education, 7(1): 47-62.
9. Jensen, U.I., 2014. The Language Requirements under EU Law on Free Movement of Workers. Analytical Note for 2013. EU publishing, 2014.
10. Ishihara, T. and J. Ham, 2012. Foreign Language Learning Enhanced with Cloud Computing and Mobile Devices. In the Proceedings of the 7th International Conference, the Chinese University of Hong Kong, Academic Publishing International Limited reading, UK, pp: 158-162.
11. García Mayo, M., P. Junkal Gutierrez, M. Mangado and M. Martínez Adrián, 2013. Contemporary Approaches to Second Language Acquisition. Amsterdam: Benjamins, pp: 260.
12. Kauffman, D., 2004. Self-regulated learning in Web-based environments: Instructional tools designed to facilitate self-regulated learning. Journal of Educating Computing Research, 30: 139-162.
13. Lajoie, S. and P.R. Azevedo, 2006. Teaching and learning in technology-rich environments. In Handbook of educational psychology, Eds., Alexander P.A., and P.H. Winne. Mahwah, NJ: Lawrence Erlbaum Associates, pp: 803-821.
14. Aristovnik, A., 2012. The impact of ICT on educational performance and its efficiency in selected EU and OECD countries: a non-parametric analysis. http://mpr.ub.uni-muenchen.de/39805/1/MPRA_paper_39805.pdf
15. Youssef, B. and M. Dahmani, 2008. Student's performances and ICTs. University and Knowledge Society Journal (RUSC), pp: 45-56.
16. Warschauer, M., 2003. Technology and social inclusion: Rethinking the digital divide. Cambridge, MA: MIT Press, pp: 272.
17. Anderson, T., 2004. Towards a Theory of On-line Learning. In: Theory and Practice of on-line learning, Eds. Anderson, T., Elloumi, F. Athabasca University: AU Press, pp: 45-74.
18. Karadimce, A. and D. Davcev, 2013. Experiments in Collaborative Cloud-based Distance Learning. COLLA 2013: In the Proceedings of the Third International Conference on Advanced Collaborative Networks, Systems and Applications, pp: 46-50.
19. Mousannif, H. and I.G. Khalil Kotsis, 2013. Collaborative learning in the clouds. Information Systems Frontiers, 15(2): 159-165.
20. Wang, M., J. Ng and W.P., 2012. Intelligent Mobile Cloud Education. Smart anytime-anywhere learning for the next generation campus environment. In the Proceedings of Eighth International Conference on Intelligent Environments, pp: 149-156.
21. Astin, A.W., 1993. Diversity and multiculturalism on campus: How are students affected? Change, 25(2): 44-49.
22. Gurin, P., E.L. Hurtado Dey and S.G. Gurin, 2002. Diversity and Higher Education: Theory and Impact on Educational Outcomes. Harvard Educational Review, 72(3): 330-366.
23. Milem, J. and K. Hakuta, 2000. The benefits of racial and ethnic diversity in higher education. In Minorities in higher education, 1999–2000, seventeenth annual status report, Ed., Wilds, D. J., pp: 39-67.
24. Ercan, T., 2010. Effective use of cloud computing in educational institutions. Procedia Social and Behavioral Sciences, 2(2): 938-942.
25. Sim, J., R. Vidgen and P. Powell, 2005. E-Learning and the Digital Divide; Perpetuating Cultural and Social Economic Elitism in Higher Education. Community of the Association for Information System. <http://www.is2.lse.ac.uk/asp/aspectis/20050141.pdf> (retrieved on July, 5th, 2015).
26. Li, J., 2012. Cultural Foundations of Learning: East and West. Cambridge University Press, pp: 400.
27. Gunnestad, A., 2006. Resilience in a cross-cultural perspective: How resilience is generated in different cultures. Journal of Intercultural Communication, 11. <http://www.immi.se/intercultural/nr11/gunnestad.htm> (retrieved on July, 5th, 2015).

28. Ungar, M., 2008. Resilience across cultures. *British Journal of Social Work*, 38: 218-235.
29. Page, S.E., 2007. *The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools and Societies*. Princeton, NJ: Princeton University press, pp: 456.
30. Robinson, P., 1980. *ESP (English for Specific Purposes)*. Oxford: Pergamon Institute of English, pp: 227.
31. Hutchinson, T. and A. Waters, 1987. *English for Specific Purposes: A learning-centered approach*. Cambridge: CUP, pp: 183.
32. Dafouz, E., B. NúCez, C. Sancho and D. Foran, 2007. Integrating CLIL at the tertiary level: teachers' and students' reactions. In: *Diverse Contexts Converging Goals. CLIL in Europe*, Eds., Marsh, D. and Wolff, D. Peter Lang, Frankfurt am Main, pp: 91-101.
33. Dalton-Puffer, C.H., 2007. *Discourse in Content and Language Integrated Learning (CLIL) Classrooms*. John Benjamins, Amsterdam, pp: 330.
34. Coyle, D., P. Hood and D. Marsh, 2010. *CLIL: Content and language integrated learning*. Cambridge: Cambridge University Press, pp: 184.
35. Nashaat Sobhy, N., C. Berzosa and F.M. Crean, 2013. From ESP to CLIL using the Schema Theory. *Revista de Lenguas para Fines Específicos*, 19: 251-267.
36. Dudeney, C. and N. Hockly, 2007. *How to teach English with technology*. Series editor: Jeremy Harmer, Harlow, Pearson Education Limited, pp: 192.
37. Warschauer, M., 2011. *Learning in the Cloud: How (and Why) to Transform Schools with Digital Media*. Teachers College Press, pp: 144.
38. Creswell, J.W., 2011. *Educational Research: Planning, conducting and evaluating quantitative and qualitative research (4th ed.)*. Upper Saddle River, NJ: Pearson Prentice Hall, pp: 672.
39. Liyoshi, T. and M.S. Kumar, 2008. *Opening up education: the collective advancement of education through open technology, open content and open knowledge*. The MIT Press, pp: 504.
40. Courts, B. and J. Tucker, 2012. Using Technology To Create A Dynamic Classroom Experience. *Journal of College Teaching and Learning (TLC)*, 9(2): 121-128.
41. Bates, T. and A. Sangra, 2011. *Managing Technology in Higher Education: Strategies for Transforming Teaching and Learning*. San Francisco: Jossey-Bass/John Wiley, pp: 288.
42. Warschauer, M. and T. Matuchniak, 2010. New technology and digital worlds: analyzing evidence of equity in access, use and outcomes. *Review of Research in Education*, 34: 179-225.
43. Gu, X., Y. Zhu and X. Guo, 2013. Meeting the Digital Natives: Understanding the Acceptance of Technology in Classrooms. *Educational Technology and Society*, 16(1): 392-402.
44. Sim, J., R. Vidgen and P. Powell, 2005. *E-Learning and the Digital Divide; Perpetuating Cultural and Social Economic Elitism in Higher Education*, Community of the Association for Information System. <http://www.is2.lse.ac.uk/asp/aspecis/20050141.pdf> (retrieved on July, 5th, 2015).