

## Moodle in the Algerian EFL Classroom: Practical Considerations

**Received:** 18/09/2019 ; **Accepted:** 26/02/2020

#### **Abstract**

Following Hutchinson and Waters' (1987) model of needs analysis, the study tried to identify students' wants, necessities and lacks that were existing at the level of assessment in the writing module at the English Department at Tlemcen University. It tried to demonstrate the importance of using Moodle for the sake of meeting those needs. To achieve these aims, a questionnaire was administered to 35 first-year students. The results revealed that students needed more writing sessions, practice, feedback, teacher-learner interaction, self-assessment, formative assessment, remedial work and diagnosis. They also needed to have a relaxing, motivating, attractive, and up-to-date 21st century evaluation that would help them, accurately, be aware of their mistakes and writing problems in an organized manner. Moodle, as an alternative assessment method, can meet those needs due to the large features it offers with regard to the evaluation.

<u>Keywords</u>: Hutchinson and Waters' Model ; Moodle ; Needs Analysis ; Writing.

## Kamila GHOUALI \*

## **Smail BENMOUSSAT**

Department of English, English for Specific Purposes Teaching Laboratory, Faculty of Letters and Foreign Languages, Abou Bekr Belkaid University, Tlemcen, Algeria

#### Résumé

Suivant le modèle d'analyse de Hutchinson et Waters (1987), l'étude a pour but d'identifier les besoins, les nécessités et les manques des étudiants au niveau de l'évaluation dans le module de rédaction écrite au sein du département d'anglais à l'Université de Tlemcen. Ce travail a essayé de démontrer l'importance de l'utilisation de Moodle pour répondre à ces besoins. A cet effet, un questionnaire a été administré à 35 étudiants de première année. Les résultats ont révélé que les étudiants avaient besoin davantage de sessions d'écriture, de pratique, de feedback, d'interaction avec leur enseignant, d'auto-évaluation, d'évaluation formative, et de diagnostic. Ils ont également besoin d'une évaluation relaxante, motivante, attrayante et représentent du 20éme siècle qui pourra les aider à prendre conscience de leurs erreurs et de leurs problèmes d'écriture de manière organisée. Moodle peut répondre à ces besoins en raison des grandes fonctionnalités offertes par la plateforme par rapport à l'évaluation.

Mots clés: Analyse des besoins; Hutchinson et Waters; Moodle; production écrite.

# ملخص

حاولت الدراسة تحديد رغبات الطلاب، ضرورياتهم ونقصهم الموجودة على مستوى التقييم في وحدة الكتابة في قسم اللغة الإنجليزية بجامعة تلمسان باتباع النموذج التحليلي لهتشينسون ووترز (1987) .حاول هذا العمل إظهار أهمية استخدام Moodle من أجل تلبية تلك الاحتياجات. لتحقيق هذه الأهداف ، تم تقديم استبيان إلى 35 من طلاب السنة الأولى. كشفت النتائج أن الطلاب يحتاجون إلى مزيد من جلسات الكتابة ، والممارسة ، والتفاعل بين المعلم والمتعلم ، والتقييم الذاتي و التكويني ، والعمل العلاجي والتشخيص. كما أنهم بحاجة أيضًا إلى إجراء تقييم مريح، محفّز، جذاب ومحدّث للقرن الحادي والعشرين يمكن أن يساعدهم على إدراك أخطائهم ومشكلات الكتابة بطريقة منظمة. يمكن لإسبب الميزات الكبيرة التي يوفرها التي يقدمها فيما يتعلق بالتقييم

الكلمات المفتاحية: الكتابة؛ تحليل الاحتياجات؛ مودل ؛ نموذج هتشينسون ووترز.

<sup>\*</sup>Corresponding author, e-mail: ghoualikamila@gmail.com

#### **I- Introduction:**

Being in an era of technology, the integration of Information and Communication Technologies (henceforth, ICT's), is becoming a common use in higher education so as to conform with the requirements of this contemporary society. Algerian universities, as a case in point, have started recently to adopt more modern teaching practices. This innovative instruction implies having recourse to some online educational platforms namely Moodle. Since students' way of being evaluated is changing just like their way of learning, the study tried to link between the platform and the assessment in the writing module at the English Department at Tlemcen University. This relationship between the two is represented in the present context by the identification of their needs at the level of assessment in the module, and the extent to which the Moodle platform can meet them. Hence, Moodle would act as a possible solution to evaluate students' writing performance. Indeed, those needs should be taken into account before shifting from a traditional evaluation to one that involves ICT's in order to provide an appropriate evaluation.

## **II.** Literature Review:

Romanowski (2017: 149) (1) defines needs analysis as: "the process of establishing 'what' and 'how' of a course", and considers that "the power of needs analysis does not lie in simply collecting data but rather in its interpretation". He emphasises on its importance as being part of the elaboration of any type of language course. He maintains that the decisions made upon the data gathered from needs analysis are going to direct the course content and objectives. He believes that it takes into account the opinion of the people concerned by this course, including teachers and students, as they are the ones the most aware of their needs. Ramani and Thiruvengadam (2015) (2) state that it is used for a number of reasons which are:

- Recognizing the specific language skills that have to be acquired by the students so that to communicate adequately in a particular context
- Evaluating the efficiency and appropriateness of the course in relation to students' needs and level, and gathering data on the issues they face in this regard
- Highlighting the existence of any inadequacies between their actual capacities and what they are required to perform

When identifying learners' needs, a variety of models exist; among which is Hutchinson and Waters' (1987) (3) model. The latter categorizes the needs into two types: target needs and learning needs. On the one hand, target needs refer to what students have to do or to know once they are in the target situation. They are composed of three types of needs: necessities, lacks and wants. Necessities represent the required knowledge in order to achieve an effective communication when being in the target situation. Lacks imply what students are deficient in in terms of linguistic proficiency or capacities when comparing their actual knowledge with the demands of the target situation. Wants indicate what students desire to accomplish when learning the target language (Mohammed et al., 2018; Lamri, 2015) (4,5).

On the other hand, learning needs indicate the path that should be followed by the student for the sake of learning the target language (Gusti, 1999) (6). As mentioned by Tahir (2011) (7), learning needs can be dived into three types: psychological and cognitive needs, sociological needs and methodological needs. They are shown on Figure 1:

Learning needs Methodological Psychological & Sociological Needs Cognitive Needs Needs e.g. classroom e.g. motivational, e.g. teacher's teaching, recreational and role, subject techniques, skills emotional needs valence, social and strategies responses

Figure-1- Learning Needs of ESP Learners

**Source:** Tahir (2011: 6)

One can understand from the figure that psychological and cognitive needs indicate the affective needs of the learners towards learning. They are mostly related with their motivation, reaction and emotion. Sociological needs display the relationship and the interaction that students need with their teacher. They emphasise mainly on the role that he plays regarding the social responses provided to his students' answers. Methodological needs correspond to the pedagogical needs of the students at the level instruction. They imply the skills, strategies and techniques that they need in the classroom.

Since the study relied on the Moodle platform, one should first know its definition and different features.

#### **II.1 Moodle Defined**

Moodle stands for Modular Object-Oriented Dynamic Learning Environment. It is what is called a Virtual Learning Environment (VLE) which is a type of online teacher-students' communication in an e-learning environment. It is also a Learning Content Management System (LCMS) that helps teachers create and manage their own personalized online course, exchange documents, intervene instantly within the course, grade, give assignment, assess and see their students' progress throughout time. Unlike the commercial VLE systems, Moodle is an Open Source Software (OSS) which means a free downloadable system accessible to everyone. It has been elaborated based on a constructivist approach to learning as it provides the possibility to learners to work together on collaborative tasks. It is a flexible and user-friendly system that students can access to whenever and wherever they want (Al-Ajlan & Zedan, 2008) (8).

## **III.** Methods and Materials:

The study depended on an exploratory case study through which needs identification was carried out. The participants consisted of thirty-five first-year EFL students at the English Department at Tlemcen University. They were undergraduate

students who had just embarked upon higher education after four and three years of English study at middle and secondary schools respectively. For their selection, a probability/random sampling design with a simple random sampling was opted. This gave an equal chance to all first-year students to be included in the sample, and would generalize the obtained findings on the target population.

The case study allowed to undertake the needs analysis via relying on Hutchinson and Water's (1987) model. The objective behind having recourse to needs analysis was to determine the existing lacks at the level of assessment in the writing module with regards to the requirements of the current teaching/learning situation. It was also employed to recognize students' not only linguistic and pedagogical needs, but also psychological, methodological, and sociological ones, as well as their wants. The end point of this identification was to propose the Moodle platform as an alternative solution that was supposed to meet those needs. Furthermore, since the study was done in an academic setting where English was taught for academic purposes i.e., it is used for "helping learners to study, conduct research or teach that language" (Flowerdew & Peacock, 200: 6) (9), and since it is a branch of English for Specific Purposes (ibid), needs identification was viewed as being necessary.

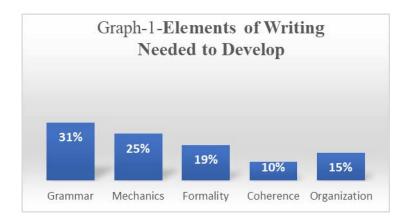
This research work would join what Songhori (2008) (10) maintains on the necessity of needs analysis for the elaboration of English for Academic Purposes tests. For all these reasons, Hutchinson and Waters' (1987) model, which was explained above, was considered as being an appropriate choice of model for needs' identification. To achieve these aims, a questionnaire was opted. It was administered to thirty-five first year EFL students. It contained nine questions involving both close-ended and open-ended questions (See Appendix I).

#### IV. Results and Discussion:

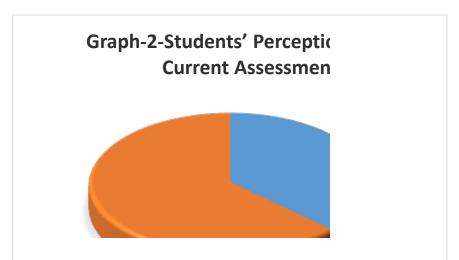
The results of the questionnaire were analyzed quantitatively and were the means by which students' needs were identified.

#### **IV.1 Results of the Questionnaire:**

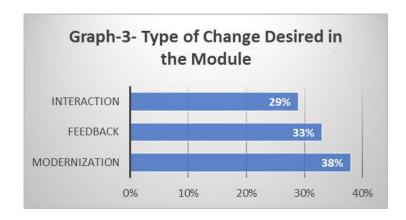
As for the questionnaire, the findings revealed that students needed to learn the different types of sentences starting from simple structures to more complex ones. They should identify first the components, characteristics, and the organization of a basic paragraph including: topic, supporting and concluding sentence, unity and coherence, and then apply this knowledge on the different types of paragraphs with regards to their respective features. In other words, they had to master the organization, individual characteristics, scopes, content, type of vocabulary and the grammatical features involved in the descriptive, narrative and argumentative paragraphs. Concerning the aspects of writing students wanted to improve, 31% pointed out that they wanted to enhance their grammatical knowledge, 25% mechanics, 19% formality, 15% organization and 10% coherence as exemplified in Graph 1:



Concerning their perception of the current assessment in the writing module, 37% advocated that they liked the way they were currently being evaluated in the writing module. They believed that it helped them improve their writing abilities which was becoming, throughout time, more academic. They even praised the teacher's correction for being fair, appropriate, encouraging and meticulous since everything was taken into consideration. 63%, however, expressed their dissatisfaction regarding the assessment in the writing module. They suggested that more sessions and practice concerning paragraph writing were needed in the module. They also mentioned that they wanted their errors to be diagnosed by themselves, and that their teacher would help them remedy them more frequently. They considered this type of evaluation to be insufficient in the module. These are illustrated on Graph2:



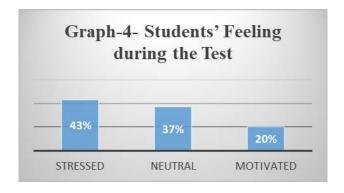
69% of the students agreed that change should be made at the level of correction in the writing module; whereas, 31% asserted that no changes should be made. When the ones who wanted change were asked about the types of change they wanted to have, 38% wanted modernization in the module through ICT's and claimed that their teacher had never used it, 33% more feedback and 29% more teacher-learner interaction as displayed in Graph 3:



43% of the students asserted that their handwriting had no influence on the way the teacher corrected the paper; whereas, 57% claimed the reverse. When requested to justify their answers, they advocated that a bad handwriting, which was not understood by the teacher, could lead to an inaccurate correction and, consequently, a low scoring even though the answers might be correct. They considered that their teacher would not waste his time reading and understanding an incomprehensible writing, and would rather consider their answers incorrect. On the reverse, a good handwriting would be more helpful and might even lead to a flexible correction as the teacher would face no difficulty in understanding what was written.

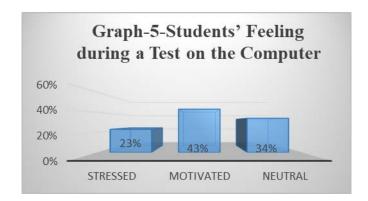
When asked if the teacher's correction would be different if the paper was provided on a platform, 60% said yes and considered that the presentation of the paper on the computer would be clearer, more comprehensible and organized for the teacher. They asserted that it would facilitate his job as it would be a real gain of time for him especially when correcting students with bad handwriting. Others stated that this type of correction would advocate an objective and faire grading and the teacher's correction would be, to some extent, even more strict than the traditional one. Some even believed that it would help them get good marks. However, 40% were against this idea and claimed that it will make no difference. They considered that the content, vocabulary, spelling or the grammatical mistakes and teacher's remarks and grades would be the same in both contexts. They asserted that they preferred the traditional way of assessing in the writing module which implied no computers.

Concerning students' feeling during the test, 43% felt stressed, 37% felt neutral and 20% felt motivated. These findings are highlighted in the subsequent Graph:



If the same test was given to them on the platform on the computer, 43% claimed that they would feel motivated. They stated that the fact that they were accustomed to such devices in their daily life would create an ease, fun and comfort which are not found in the traditional paper. They believed that the presentation of the paper on the computer would suit the needs and interest of the new generation, introduce change in the module that would boost their motivation to learn, encourage them to work harder, and help them overcome the stress created by the sheet. Hence, they were fervent for to this idea and considered that this change would be beneficial.

34% asserted that they would be neutral, and claimed that no difference existed between the two. Some expressed their scepticism due to the non-safety of computers and the numerous viruses and hacking problems found there. 23% confessed that the degree of stress felt would be the same in both contexts as it would still be considered as a test. Others confessed that another cause of stress would be generated due to their non-mastery of computers which would create an embracement for them. Findings are supported in Figure 5



60% of the students were in favour for the introduction of platforms as a means to evaluate their written assignments in the writing module, and provided several reasons to support their opinions. They considered that it would be quicker, cleaner, funnier; more useful, organized, comfortable, understandable, beneficial, specific, interesting, motivating and efficient than the traditional paper-based correction. They also believed that writing on the computer would be much easier for the them than writing on the paper as they would have only to click, without facing any difficulty, on the letters that are presented on the keyboard, and which they were already used to in their daily life.

Others claimed that it would help them learn how to write in a correct way, and contribute to their writing development. Some stated that since they were living in the era of technology where ICT's have become part of their every day's life, making use of them in education was necessary to meet today's needs. Others expressed a curiosity and a desire to know more about it.

On the contrary, 40% were against it in the writing module, and strongly doubted about its efficiency. They believed that the high importance of the wiring module requires a teacher highlighting the mistakes with a pen on the paper, and hence, using the computer would be useless. They asserted that they were unable to picture themselves being evaluated in another way than on the paper as their entire life they have been tested using the paper-based assessment. They highlighted their comfort when writing on the paper with their hands, and argued that the direct contact between them and the paper helped them improve their writing abilities. They stipulated that the paper had a special charm that cannot be found on the computer, and confessed their

love to the red pen which they considered to be a source of motivation as it allowed them to see their mistakes and learn from them.

Others did not deny the benefit that it could have on their writing abilities, yet they did not see its use in the writing module as a necessity since the actual teacher's correction was considered to be appropriate and did not require any changes.

## **IV.2 Needs' Identification:**

The results of the questionnaire allowed to identify students' target and learning needs. The necessities represented what students believed that they needed to achieve in the writing module as far as the paragraph organization, grammar, vocabulary, mechanics, structure and content were concerned. They were the learning objectives of the writing module. Lacks were what they considered to be lacking concerning the assessment in the module. Wants corresponded to what they desired to be changed, removed, added in the assessment, and the elements they wished to develop in their writing.

Regarding the learning needs, the psychological and cognitive needs indicated the psychology of the learners towards the assessment in the writing module. They were related with their motivation, reaction and feeling about the existing needs in the environment in which the assessment was carried out. Sociological needs were concerned with the relationship and the interaction that they needed with their writing teacher concerning the social responses that the writing teacher gives to his students' answers i.e., feedback and correction. Methodological needs were the pedagogical needs of the students at the level of the assessment in relation with the type of assessment administered for them as well as the skills, strategies and techniques employed when they were evaluated. These results are illustrated on Table 1:

Table-1- Needs' Identification

	Table-1- Needs' Identification				
	Necessities	Lacks	Wants		
	Students need to:	Students need to have :	-Students want change and		
	-master the different types	-more practice and activities	to be introduced to new		
	of sentences starting from	in the writing module about	technologies in the writing		
	simple structures to more	paragraph writing, sentence	module		
	complex ones as well as structure, punctuation and		They want:		
	the mechanics of the grammatical items related		- an assessment that would		
	English language	a given type of paragraph	be representative of today's		
		-write an organized, -more teaching sessions			
	unified and coherent		interest		
TD: 4	paragraph		<ul> <li>a funnier and a more</li> </ul>		
Target Needs	-differentiate between the		comfortable and attractive		
Needs	organization and the		assessment		
	content of the different		<ul> <li>a clear and organized</li> </ul>		
	types of paragraphs		paper easy to be corrected		
	-identify the grammatical		<ul> <li>a clear picture of their</li> </ul>		
	features and the		writing difficulties and the		
	vocabulary		type of mistakes they make		
	used in the descriptive,		so as to remedy them		
	narrative and		<ul> <li>to develop sentence</li> </ul>		
	argumentative paragraphs		structure, grammatical		
	-write formally and		knowledge, formal writing		
	accurately in the target		style and coherence in their		
	language		writing		
	<ul> <li>write effectively in an</li> </ul>		- to be able to master the		
	academic context.		English language norms,		
			structures, and mechanics		
			-to write correctly without		
			spelling and grammatical		
			mistakes		
	Psychological and	Sociological Needs	Methodological Needs		
Learning	Cognitive Needs				
	-Students need motivation	-Students need more	Students need:		
Needs	to learn through	individual teacher-learner	-formative assessment		
	introducing innovation and	interaction and detailed	-remedial work in the		
	ICT's in the writing	feedback from the part of the	module		
	module	teacher so that to improve	-self-assessment in order to		
	-They need a less stressful	their writing abilities and be	reflect on their mistakes		
	assessment than the one	aware of their mistakes			
	created by the traditional				
	paper-based assessment				

The needs analysis revealed that students lacked writing sessions, practice, feedback, teacher-learner interaction, self-assessment, remedial work, formative assessment and diagnosis; elements that they considered to be insufficient in the writing module. They also needed to have a relaxing, motivating, attractive, and up-to-date 21st century evaluation that would help them, accurately, be aware of their mistakes and writing problems in an organized manner. Indeed, these results seem to support the introduction of the Moodle platform because the large features and recourses of the platform were considered to be a useful tool for assessing students that would directly meet the learning and target needs that were identified.

It would offer more writing sessions, practice, feedback, teacher-learner interaction, self-assessment, remedial work, formative assessment and diagnosis. It would be time saving and less stressful than the traditional assessment as the papers will be clearer and more organized, and the teacher can design the test and the scoring rubric, manage all the features of the test, correct and grade his student only by one click. In addition to that, the teacher can see his students' progress on the platform by means of the statistical evidence it provides. Furthermore, students will be more motivated to learn and to use innovation in the module.

This goes along with what Costa et al.'s (2012 : 336) (11) inventory of the activities provided by the Moodle platform as it is demonstrated on Table 2 :

**Table-2- Activities of the Moodle Platform** 

Activity	Module	Description	
Creation	Database	allows to build, display and search a bank of record entries about any topic allows to share a collection of data	
Organization	Lessons	represent a set of ordered topics summarizing the instructional materials and allow the access to them through the respective link	
Delivery	Assignments	allow teachers to collect work from students allow teachers to evaluate the student's work and provide feedback including grades, in a private mode allow students to upload assignment files	
	Workshops	represent a peer assessment activity with many options	
Communicatio	n Chate	allow students to submit their work via an online text tool and attachments allow synchronous conversation	
Communicatio		•	
	Forums	represent a communication tool where students and teachers can exchange ideas by posting comments	
	News	represent a special forum for general announcements allow teachers to add posts and to send emails	
Collaboration	Glossary	allows creating and maintaining a list of definitions represents a mechanism for collaborative activities that can be restricted to entries made by the teacher	
	Wikis	allow users to edit collaborative Web pages provide space for collaborative work	
Assessment	Choice	allows teachers to ask questions and specify multiple choice answers represents a useful mechanism to stimulate thinking about a topic	
	Quiz	allows teachers to design and build quizzes with a variety of questions, with different types of answers, such as multiple choice,	
	Survey	true/false, short answer allows teachers to gather feedback from students using prepackaged questionnaires	
	Feedback	allows teachers to create surveys to collect feedback	
Reusability	SCORM	represent specifications that enable interoperability, accessibility and reusability of the learning content represent tools that enable SCORM packages to be included in the course	
	External tools	enable interaction with compliant learning resources (eg. Learning Tools Interoperability) and activities on other Web sites provide access to new activities' types or materials	

**Source :** Costa et al. (2012 : 336)

Table 2 highlights the array of features of the Moodle platform that can help the teacher and students both inside and outside the classroom setting. In fact, Moodle enables the teacher to have a full control over his course, and gives him the leeway to manage and manipulate it the way he likes. The teacher can create, organize and post the lecture it in the form of Pdf, Word documents, PowerPoint, books, video, audio files, and web page links. He can collect, assign, grade, and assess his students via the numerous activities this platform offers such as quizzes, multiple choice questions, true/false questions, essays or short answers.

The teacher can also make announcements and organize workshops. Students have only to upload the lectures, or submit their assignment from the platform. It opens the door to the students to express their opinion on the content of the course through surveys, and to work collaboratively on the elaboration of wikis. It also encourages communication between the students and with their teacher by way of chats, which is a type of a synchronous communication, or by means of discussion in forums which is an asynchronous communication.

## V- Conclusion:

Combining students' needs with technology is necessary in order to render the assessment adequate and meaningful to the learners. According the findings, Moodle would be an organized, clear, relaxing, motivating, attractive, and up-to-date 21st century evaluation that students confessed to need, and to be lacking in the traditional paper-based assessment. If applied appropriately, needs' analysis would probably be beneficial and lead to the enhancement of students' learning outcomes. The appropriateness of Moodle in meeting students' needs was only the first step of the implementation of the platform. The next step would consist of experiencing concretely its benefits on students' writing. The study implied only thirty five informants; a number insufficient to generalize the findings on the target population. Therefore, further investigations should be held in the future on a much larger sample so as to be able to make generalizations on all first-year EFL students in the Algerian universities.

# - Appendices :

## **Appendix I: Students' Questionnaire**

01-What do you need to learn in the writing module?
02-Which aspects of your writing do you want to improve thanks to the writing module
in order to be able to write effectively? (you can choose more than one answer)
Sentence structure $\square$
Grammar □
Mechanics (spelling, punctuation, capitalization) $\square$
Formality
Coherence (logical sequence of ideas) $\square$
Organization □
Other (please specify)
03-Do you like the way you are currently being evaluated in the writing module?
Yes □ No □
Why ?
04- Do you think that changes should be made at the level of correction in the writing
module ?
Yes □ No □
If yes, what should be added: (you can choose more than one answer)
Modernization of the correction through using technology $\square$
More feedback (remarks about your writing) should be given by the teacher $\Box$
More teacher/learner interaction $\square$
Other (please specify)
05- Do you think that your handwriting influences the way the teacher corrects your
paper?
Yes □ No □
If yes, could you explain more ?
06-Do you think that your teacher's correction would be different if the paper was
given to you on a platform?

Yes □ No □
Justify your answer
07-How do you generally feel when the test sheet is given to you the day of the test '
(choose only one answer)
Stressed $\square$ Neutral $\square$ Motivated $\square$
Other (please specify)
08- How would you feel if the test sheet was given to you on a platform on the
computer ? (choose only one answer)
Stressed $\square$ Neutral $\square$ Motivated $\square$
Other (please specify)
Explain why?
09- Are you in favour of introducing platforms as a means to evaluate your written
assignments in the writing module ?

## **Referrals and References:**

- [1]. Romanowski, P. (2017). Proposing a comprehensive framework for needs analysis in ESP on the integrality of needs analysis in Business English course design.
- [2]. Ramani, N. and P. Thiruvengadam (2015). Importance of needs analysis in ELT Curriculum.
- [3]. Hutchinson, T. and A. Waters (1987). English for Specific Purposes, Cambridge University Press.
- [4]. Mohammed, E., et al. (2018). "Needs Analysis in English for Academic Purposes: The Case of Teaching Assistants at the University of Khartoum." How 25(2): 49-68.
- [5]. LAMRI, C. E. (2015). Promoting the Reading Skill through Blended Learning for ELP Students: The case of Master's Students in the Faculty of Law and Political sciences at Abou-Bekr BELKAID University, Tlemcen (Doctoral dissertation).
- [6]. Gusti, A. (1999). The Role of Needs Analysis in English for Specific Purposes.
- [7]. Tahir, A. (2011). Learning Needs A Neglected Terrain : Implications of Need Hierarchy Theory for ESP Needs Analysis.
- [8]. Al-Ajlan, A. & H. Zedan (2008). Why moodle. 2008 12th IEEE International Workshop on Future Trends of Distributed Computing Systems, IEEE.
- [9]. Flowerdew & Peacock (2001). Research perspectives on English for academic purposes. Cambridge, Cambridge Univ. Press.
- [10]. Songhori, M. H. (2008). "Introduction to needs analysis." English for specific purposes world 4(20): 1-25.
- [11]. Costa, C., et al. (2012). "The Use of Moodle e-learning Platform: A Study in a Portuguese University." Procedia Technology 5:334-343.