Learners' Attitudes Towards Extended-Blended Learning Experience Based on the S2P Learning Model

Salah Eddine BAHJI
Mohammed V University
Mohammadia School of Engineers-Rabat
High School of Technology-Salé
Rabat, Morocco

Jamila EL ALAMI
Mohammed V University
High School of Technology-Salé
Rabat, Morocco

Youssef LEFDAOUI
Mohammed V University
High School of Technology- Salé
Rabat, Morocco

***Abstract*—Within the Moroccan context, the Higher Education Institutions have realized the importance of the integration of information technologies into the formal learning curriculum. However, the risks of demotivation remain large in tertiary education, even with the support of these new technologies. It is therefore essential to ensure consistently the maintenance of the learners' motivation, which must start from the design phase by adopting real motivational strategies. Blended Learning addresses the issue of the quality of teaching and learning offering then some answers to learners' motivation issue. So, we try to extend of the dimensions of Blended Learning to an "Extended Blended Learning (Ex-BL)", according to the S2P Model Learning designed as an integration model, arguing that knowledge and learning tools are nowadays available everywhere. This integration of educational resources takes into consideration various components: Face-to-face/online learning, Text-based Learning/Game-based Learning/Media-based Learning, Gamification, and Open Educational Resources. This paper investigates the learner perceptions of this instructional design. This includes their perceptions of learning effectiveness and its impact on their motivation during the learning experience. This investigation focused on two main points: the "Observation of learners' behavior", especially during online activities, as a way to gauge the degree of motivation and engagement; and the "Evaluation of the learning experience" through a survey covering the appreciation of the instructional design; the degree of satisfaction; the students' motivation; the online platform; the extension of Ex-BL elements and their impact on learners' motivation.**

***Keywords*—learning model; S2P learning model; blended learning; extended-blended learning; learning experience; learners' motivation; gamification**

I. Introduction

It is noted a significant movement within the sphere of Higher Education in general, working to meet the needs of the 21st century. In this movement, the Higher Education Institutions have realized the importance of the integration of information technologies into the formal learning curriculum.

Today, existing learning systems are largely focused on the administration of courses and content. Thus, for years, it was recommended to support individual and collective learning processes by using online learning systems [1].

However, the risks of demotivation remain large in tertiary education, even with the support of new technologies. It is therefore essential to ensure consistently the maintenance of the learners' motivation, which must start from the design phase by adopting real motivational strategies [2].

According to Garrison D.R. and Vaughan N.D., Blended Learning addresses the issue of the quality of teaching and learning. This quality is especially visible at the level of motivation and commitment shown by learners during formal learning process [3]. Therefore, this study was conducted to explore the prospects for fostering the learners' motivation and engagement through extended modes of Blended Learning (***Extended Blended Learning***).

Thus, we will focus on designing a prototype of a learning experience base of Extended Blended Learning (Face-to-face/Online; Text-based Learning/Game-based Learning/Media-based Learning, Serious Games/Gamification; Own Content/Open Content) proposed as part of the "*S2P Learning Model*" [4];[5];[6];[7].

To answer our research questions we chose to conduct a survey, with the various target learners in the learning experiment order to evaluate their level of satisfaction (or dissatisfaction) and to observe their degree of motivation and commitment.

II. Theoritical Backgound

To approach the underlying theoretical background for our research we will try to outline some key concepts, ranging from definitions to current and perspectives that affect each of the key concepts used in the context of this work. Namely: Motivation; E-Learning & Open Educational Resources; Blended Learning; and Game-based Learning and Gamification.

A. The motivation

Motivation is defined by the Cambridge Academic Content Dictionary as "*the reason to do something*" and the "*willingness to do something, or something that causes such willingness*". Furthermore, Larousse Dictionary defined it as the "*physiological and psychological processes responsible for the initiation, the continuation and the termination of*

behavior"[8]; while for Maehr M.L. and Meyer H.A., motivation is a "*theoretical construct to explain the initiation, direction, intensity, persistence and quality of behavior, particularly directed behavior toward a goal*" [9].

The theorists distinguish between two dimensions of motivation: "*Intrinsic motivation*" and "*Extrinsic motivation*".

The Intrinsic motivation, which is difficult to master and measure, is intimately linked to the Cognitivism school; while the Extrinsic motivation is supported by behaviourism school, where, according to some stimuli we seek to develop some answers, which can be observed and measured [10].

The Motivation is then seen as the key to effective learning. But due to several factors, keeping learners motivated and engaged during a learning experience is a difficult and deli-cate issue today [11].

B. Technology Enhanced Learning: E-Learning, Open Educational Resources & Blended Learning

In the 21st Century, people need to learn more than ever before. The rapid development of information technologies, especially the Internet has radically improved the manners of teaching and learning [12].

Today, the relationship Technology/Education is becoming more dynamic and interdependent. In this context, education and ICT are the top priorities for the post-2015 development agenda for African countries [13].

Bilinovac D. noted that the concept of e-Learning was not only efficient but more rapid by the emergence of the Internet, arguing that the learning tools are available online, and participants (students and tutors) communicate by e-mail, chat, discussion forums or social networks. Therefore, the concept could be used as a main learning mode or as a combined approach with the class-face [14].

E-Learning results therefore from the association of interactive and multimedia content, distribution media (PC, Internet, Intranet, Extranet), a set of software tools that manage online training and tools for creation of interactive trainings[15]. It is a way that is particularly valuable because it offers more flexibility with lower costs [13].

Furthermore, the use of Open Educational Resources (OER) integrated in the daily life is emerging, even in schools or educational learning landscapes [16]. The OER movement originated from the evolution of Open and Distance Education (ODL) and in a broader context, a culture of open knowledge, Open source, free sharing and peer collaboration, which emerged in the late twentieth century [17].

Also, the evolution of the learning process in teaching was based on the integration of new teaching strategies to improve teaching and increase flexibility. Then, several studies have been conducted to explore learning strategies that exploit the potential of e-Learning, while retaining the advantages of face-to-face teaching, from which the concept of blended learning has emerged. Rooney J.E. said that blended learning has been recognized by the American Society for Training & Development as one of the top ten trends to emerge in the area of knowledge transmission [18].

Indeed, Blended Learning is increasingly offered at Colleges and Universities mainly American [3], with increasing evidence that they can improve student learning [19]. Experience has also shown that well-designed hybrid courses enhance learning of learners and increase knowledge retention [20].

However, the Blended Learning depends largely on technical resources with which the learning experience is designed. These tools must be up to date, reliable and easy in order to have a significant impact. These tools help learners to learn or review key concepts, stay organized, show what they have learned, submit jobs, track achievements and communicate [21].

C. Game-based Learning and Gamification

The popularity of computer games has led to the reflection on their application in education. The games are becoming an integral part of modern society. They are an ideal platform to present new content and new technologies because many people play computer games and accept it as a normal form of entertainment. Contrary to the existing media, games promote interaction, allowing users to participate actively, not passively in receiving information. Therefore, educational games were gradually perceived as very effective tools to improve the teaching/learning activities at higher education [22].

However, after an exploration of gaming activities in education, a new concept was born: Gamification, seen as the use of "*thought*" of the game (*game thinking*) and mechanisms of the game (*game mechanics*) in non-gaming contexts, used to engage users in their activities (problem solving, learning, etc.).

In fact, Gamification is a very recent trend that began to gain ground from 2010 [23]. It mainly involves the use of elements and mechanisms of the game (*game mechanics*) in non-ludic systems (*non-game systems*), in order to improve the experience and engagement of the user.

However, little is known about the efficient design of "*gamified*" systems. The recent introduction of gamified applications to a wide audience of users promises new thinking and rich data sources for the many efforts in Human-Computer Interaction (HMI) that explored mental patterns associated with game, design patterns and motivation dynamics, "funology", social psychology of online communities, or the experiences of users in the game, etc.[24].

Then, the definition presented by Erenli K. remains the most complete, presenting Gamification as follows: *"Gamification is the process of using game mechanics and game thinking in non-gaming contexts to engage users and to solve problems. Gamification leveraged game design, loyalty program design and behavioral economics to create the optimal context for behavior change and successful outcomes"[25]*.

III. Methodology

A. Research objectives

The main goal of this research is to elucidate the factors of design of a motivating learning experience, within the context of tertiary education.

Therefore, this research will focus on developing a learning experience based on Extended-Blended Learning Approach (face-to-face/online; text-based learning/game-based learning/media-based learning; serious games/gamification; own content/open content) proposed according to the framework of the S2P Learning Model [4];[5];[6];[7].

B. Participants

The target population for this study is a community of learners of a Bachelor Degree, within a public institution of higher education (Information Science School, Rabat, Morocco). This population is composed by of 94 students of the 4th year of the cycle "*Informatistes*" (or Specialists in Information Management), engaged in the course "*Knowledge management*". This is a population composed in its majority by female gender, because 78% of students are of the female gender, and 22% are of the male gender. Moreover, the access to the Internet is also a key success factor within our context. Thus, it is observed that 98% of students have a permanent access to the Internet, while only 2% of students do not. Therefore, they can access from the School or Internet cafes.

C. Instruments

To answer our research questions, we have chosen the survey approach in order to evaluate the level of satisfaction of our learners, and to observe their levels of motivation and engagement. We have favored the Investigative technique using data collection instruments like "*Observation Grid*" and "*Questionnaire*".

1) The observation grid

Since the behavior of learners in the classroom was more or less mastered, we focused in our approach, on observing online behavior through the Edmodo Platform (www.edmodo.com).

This observation was conducted according to the following three main areas:

- consultation of resources shared by the teacher.
- participation of students through shared resources and comments.
- gamification elements.

2) The questionnaire

The evaluation of the learning experience was designed and conducted regarding the following aspects: the motivation; the online platform; the game elements & Gamification; and the general appreciation of learners.

The questionnaire was delivered online using Google Forms, due to several factors such as: a facility and the rapidity of forms design; a facility of deployment and implementation of operational forms; a facility of data exploitation (exporting data to other operating or processing tools such as MS Excel and SPSS).

D. Survey context

The learning experience has been evaluated with a class at the "Information Science School", which is the only institution in Morocco that forms the Information Professionals named "*Informatiste*" (1) and "*Informatiste Spécialisé*" (2).

(1) *Informatiste*: Information Professional with a Bachelor Degree.

(2) *Informatiste Spécialisé*: Information Professional with a Master Degree.

This School provides initial training and continuing training in Information Science, including the fields of library and documentation; archives and records management; competitive intelligence and business intelligence; information management; information and knowledge systems and related fields.

IV. Design of a Learning Experience Acording to the S2P Learning Model: Application for An Extended-Blended Learning

The approach for the fight against demotivation of learners is a "top-down" approach based on three levels: a ***Macro level***, focusing on the definition of a Conceptual framework, namely the S2P Learning Model; a ***Meso level***, putting emphasis on the design of the Learning Experience; and a ***Micro level***, putting emphasis on content conception and learning activities [6].

To ensure a proper understanding of any formal learning approach, it was appropriate to draw a logical framework for the definition and implementation of any educational initiative. This framework was designed through the definition of three complementary dimensions: a strategic dimension of reference (***Formal Learning Strategy***), a technical dimension of support (***Formal Learning Platform***), and procedural dimension of knowledge acquisition (***Formal Learning Process***). These three dimensions interact into a relationship framework and dynamic interdependence: "***Definition***" – "***Support***" – "***Adjustment***"[4];[26].

A. The Formal Learning Strategy

The domain – Field: Our experiment was conducted as part of the course entitled "Knowledge Management" given to the final year (4th year) of the Bachelor degree.

The Level: The desired level is a level midway between Initiation and Development, because students will be exposed to new concepts and new theories related to Knowledge Management. In addition, they will have to improve the use of information management tools in the sphere of the discipline.

The Content: The course content is mostly theoretical, for the internalization and appropriation of concepts. But it is administered in various forms.

The Pedagogical objectives: This course aims to introduce and deepen the students' knowledge about Knowledge Management, which is an extension of the central discipline of their profile, namely: Information Management.

To do this, intermediate objectives are defined, such as: a) understanding the concept of "*Knowledge*" ; b) understanding the *Knowledge Management* in the organization and its methods of approaches ; c) understanding the impacts of the integration of this mode of management on new ways of business organization.

The Pedagogical scenario: The Pedagogical scenario designed for the animation of the course is conducted on six

units. Each unit consists on various sections according to the traced educational goals "Fig. 2".

B. The Formal Learning Platform

The fundamental principle adopted in the design of the learning platform is the principle of Integration. Where several components have been integrated such as: course lectures; presentations made by learners; case study analysis; online assignments. Supported by an online platform "*Edmodo*" (used for sharing course materials; sharing web resources: videos, documents, figures and images; sharing comments; integration of online serious games; assigning work); making online works; assessment and evaluation; archiving of all course resources; insertion of Gamification elements (badges assignment; awarding points; rewards).

The simple use of Blended Learning to overcome the problem of classroom learners' demotivation may be insufficient. Therefore, it would be appropriate to expand the instructional design. An initiative particularly motivated by the development of ICT, promoting an easy access to sources of knowledge. Thus, we propose the "*Extended-Blended Learning*" that will take its full meaning by incorporating the following layers in the "Fig. 1".

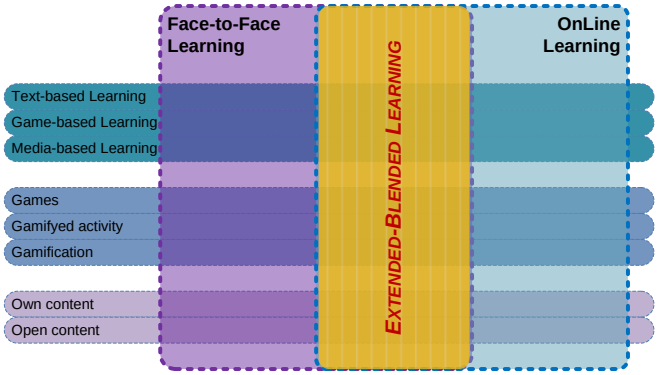

Fig. 1. Components of the "Extended-Blended Learning"

The Extended-Blended Learning exceeds Blended Learning and is characterized by the combination of several components on several levels (in addition to face-to-face and online), including: the pedagogy; the media; the content; the type of contact; the activity; the assessment; etc.

Why focusing on Game mechanics more than games? In the game, the player can win as he can lose; it can be a psychological barrier. While in an educational environment, we do not seek the learner "loses", but mostly we try to take advantage of the positive aspects of Game Mechanics to raise motivation and commitment. As result, make the maximum that the learner finds the environment for success ("Win").

The gamification principles can be used in online and face-to-face activities, rewarding any relevant participation and any deserving effort from students.

Therefore, the choice of Game Mechanics in the S2P Learning Model must be in correlation with the learning process we want to initiate within the learner.

C. The Formal Learning Process

The overall style of the course focuses on the development of four learning processes (at varying degrees), including: the process of Internalization; the process of Reflection; the process of Decision-making; and the process Socialization.

During the course, the ultimate goal lay in the internalization of concepts, approaches, methods and tools dedicated to KM. Therefore, the knowledge internalization process was the focal point of our approach.

The reflection process was encouraged in the context of analytical work, case studies, preparation of oral presentations.

The process of decision-making was present during serious games, integrated in the course, as well as at intermediate evaluation quizzes deployed at each course unit.

The socialization process was present at the collaborative work assigned to students during the analytical work, case studies and oral presentations.

V. Results and Discussion

The evaluation the learning experience was driven by the combination of two complementary components, namely: the observation of learner behavior and the evaluation via a survey.

A. Observation of learners' behavior

The elements of observation of the behavior cover learners' online activities as a way to estimate the degree of motivation and engagement during the learning experience. It covers:

- the consultation rates of resources shared by the teacher.
- the learners' participation through the sharing of resources and comments.
- the components of Gamification.

1) Consultation rates of resources shared by the teacher

During this learning experience, the teacher shared with students 18 different resources in terms of nature and in terms of goals. The Edmodo platform offers statistics views to monitor the status of consultation of posted documents. The teacher's shared resources have recorded 1752 consultations, with an overall average of 97.33 consultations per document, as seen in "Table 1".

The consultation rate of these resources varies from one resource to another, depending on the course units and according to the assignment type.

The highest consultation rates concerned resources of type "Assignment" (work, duty, case studies), when resources that do not have an obligatory form recorded lower rates.

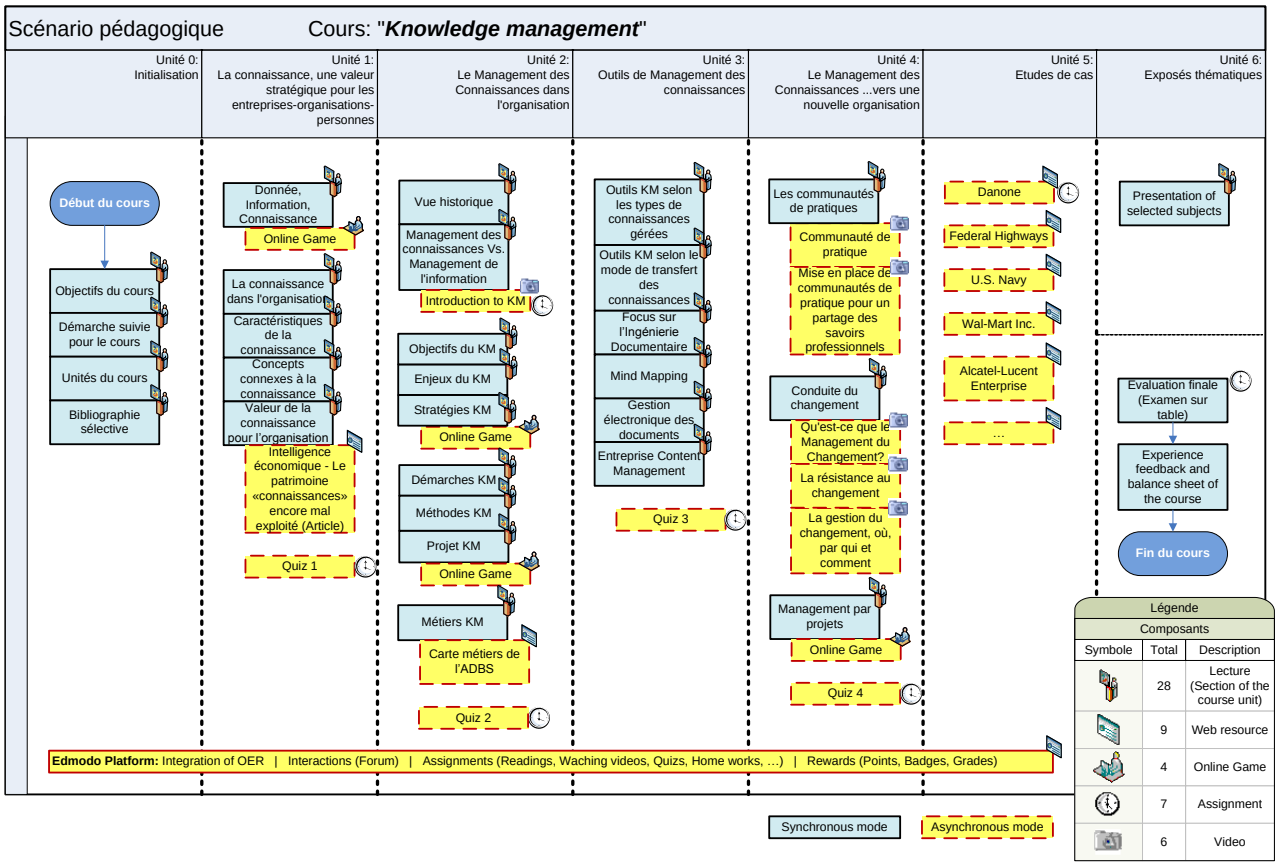

Fig. 2. Components of the pedagogical scenario

TABLE I. CONSULTATION OF RESOURCES SHARED BY THE TEACHER

Types of posted resources	Number of posted resources	Number of consultations	Average of consultations
Slides	5	544	108.8
Online games	2	146	73
Documents	5	446	89.2
Quizzes	3	282	94
Videos	3	334	111.33
	18	***1752***	***97.33***

The most-viewed items are course materials with a total of 544 consultations, followed by documents with 446 consultations, videos with 334 consultations, and finally online games with a total of 146 consultations.

In terms of averages, the videos recorded the highest average by 111.33 consultations per video, followed by course material with an average of 108.80 consultations, finally the online games, with an average of 73 consultations per game.

2) Learners' participation through the sharing of resources and comments

Learners' participation through the sharing of resources and comments will be estimated using the participation rate and the type of participation. The learners' participation rate at the online platform is significant, in the order of 75.5% of students (active participation by sharing comments and documents). While nearly a quarter of the students showed a passive presence at the online platform (observers).

Among the 75.5% of students who have shared items at the online platform, it is observed that 52.1% of them have recorded between one to five shares each. 22.5% had between six to ten shares for each student of them, while 25.4% of students have shared more than ten resources each at the online platform.

The learners' contribution at the online platform totaled 827 participations. 67.2% in the form of electronic resources (documents and others), and 32.8% as comments. With a global average of 8.8 participations per student (a ventilated average of 5.9 documents shared by student, and an average of 2.9 comments by students).

3) Components of Gamification

To reward the student's participation during learning activities, whether in class or online, the principle of Gamification activities was adopted by allocating badges. These badges are transformed into points as Rewards.

During this experiment, we registered the distribution of a total of 446 badges for all categories. In fact, it has been observed a positive involvement for the adopted approach, since 65% of students obtained at least one badge.

Thus, we can see that 42 students scored between 1 and 5 badges each (a rate of 45%). 9 students achieved between 6 and 10 badges each (a rate of 9%). In addition, 11 students received more than 10 badges each (at the rate of 11%), while 35% did not get any badge.

The most collected badge is "*Participant*", with a total of 381 distributed badges (a rate of 85%). With a maximum of 37 badges for a student, (an average of 4.05 badges per student and a standard deviation about 7.8). Followed by the type "*Perfect Attendance*" with total of 29 badges distributed (a rate of 7%). "*Homework Helper*" comes in third place with a rate of 3.4% of distributed badges. In the fourth place, "*Hard Worker*" with a rate of about 2% of the distributed badges. In the fifth position, we find "*Good Citizen*" with a rate of 1.3%. In the last positions "*Student of the Month*" and "*Star Performer*" with rates around 1% each, as presented in "Table 2".

In fact, among 63 students (those who have collected badges), more than a half (57.1%) has received at least two different types of badges. While about 43% of the students have collected only one type of badges.

TABLE II. TYPES OF DISTRIBUTED BADGES

Badges	Total distributed	Percentage	Average	Standard deviation
Good Citizen	6	1,3%	0,06	0,29
Hard Worker	8	1,8%	0,09	0,28
Homework Helper	15	3,4%	0,16	0,37
Participant	381	85,4%	4,05	7,84
Perfect Attendance	29	6,5%	0,31	0,53
Star Performer	3	0,7%	0,03	0,18
Student of the Month	4	0,9%	0,04	0,20
	446	***100%***	***4,74***	***8,22***

Among those who got two types of badges and more, 35% received two different types of badges. 17% received three different types of badges and 5% received between four to five different types of badges. Thus, an overall average of 1.9 different types of badges collected per learner was recorded.

B. *Evaluation of the learning experience*

The evaluation of the learning experience has considered the following: the appreciation of instructional design by students; the appreciation of the degree of students' satisfaction; the appreciation of students' motivation; the appreciation of the online platform; the perception of the extension of Ex-BL elements and their impact on learners' motivation.

1) Appreciation of the instructional design applied to the courses

On the question related to the impact of the instructional design applied to the Course on the encouragement of the learning experience, it should be noted that the vast majority of students is convinced.

The components of this instructional design are appreciated positively since the majority is perceived as "*Very interesting*" and "*Interesting*", as presented in "Fig. 3".

This evaluation has considered the following components: Units of the course; Course content; Blended learning mode; online platform (Edmodo.com); Game elements embedded; Learning through play.

We record a positive overall appreciation of the Units of the course, because 83% of students find these units "*Very interesting*" and "*Interesting*", while 15% of students are the "*Interesting enough*".

The Course content recorded the same appreciation as 85% of students find it "*Interesting*" to "*Very interesting*", while only 15% find the "*Interesting enough*".

Students' perception of the Blended learning approach was positive, the fact that 94% of students consider it "*Very interesting*" and "*Interesting*", while only 6% of students who consider it "*Less interesting*".

For the Online platform used in the course, a large majority of students (92%) perceives it "*Very interesting*" and "*Interesting*", while 4% of students judge it "*Interesting enough*". Only 4% of students have a negative perception of the platform, since 2% sees it "*Less interesting*", and 2% sees it "*Not at all interesting*".

The integration of Game mechanics at the learning experience has also attracted the interest of students. Indeed, 76% of students felt "*Very interesting*" to "*Interesting*". 9% of the students find then "*Interesting enough*", while 7% of students find the "*Less interesting*" and 2% found them "*Not at all interesting*".

In the same line, Learning through play attracted the same interest, since 76% of students consider it "*Very interesting*" to "*Interesting*". 9% of students find it "*Interesting enough*", while 8% of students find it "*Less interesting*".

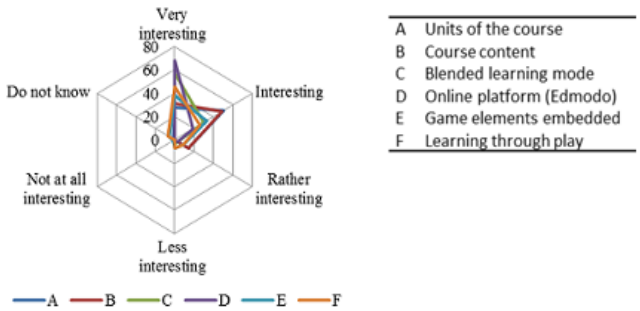

Fig. 3. Perception of the components of instructional design adopted in the course

2) Students' motivation

During the learning experience, it was noted a significant level of motivation as seen in "Fig. 4", because 96% of students consider being motivated: 61% "*Very motivated*" and 35% "*Motivated enough*". Only 2% of students consider being "*Less motivated*".

Several factors (intrinsic and extrinsic) contributed to maintain learners' motivation. Therefore, the majority of students' appreciations regarding the importance of intrinsic motivation factors were concentrated around "*Extremely important*", "*Very important*" and "*Important*":

- *The course will facilitate employability*: 83% of students consider it "*Important*" to "*Extremely important*", and 15% "*Important enough*".
- *The course gives a new dimension to the specialty (Information Management)*: 96% of students consider it "*Important*" to "*Extremely important*", while only 4% of the students consider it "*Important enough*".

In parallel of intrinsic motivation factors, students were approached in relation to extrinsic motivators developed in this learning experience.

The overall view of these factors shows a positive perception since the majority assessments were concentrated around "*Extremely important*", "*Very important*" and "*Important*":

- *The Blended mode*: was appreciated as "*Important*" to "*Extremely important*" by 95% of students.
- *The Teacher's style*: was considered as "*Important*" to "*Extremely important*" by 94% of students.
- *The Teacher's personality*: was appreciated as "*Important*" to "*Extremely important*" by 95% of students.
- *Learning through play*: has attracted the interest of 84% of students; "*Important enough*" to "*Extremely important*".
- *Game mechanics*: has been "*Important*" to "*Extremely important*" to 82% of students, and "*Important enough*" to 6%.

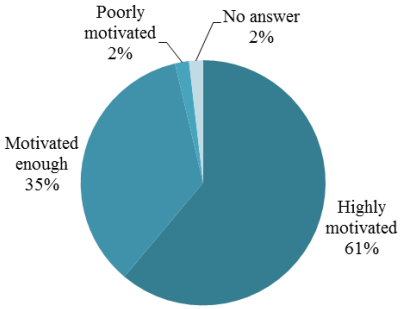

Fig. 4. Learners' motivation level during the learning experience

- *The Exchanges between students*: in class 97%, online 86%, "*Important*" to "*Extremely important*".
- *The Exchange with the teacher*: in the classroom 99%, Online 92%, "*Important*" to "*Extremely important*".
- *The Integration of Open Educational Resources*: 93% of students found it "*Important*" to "*Extremely important*".

C. Discussion

The objective of this study is to provide more empirical researches on the effects of the extended blended learning; and to measure the effectiveness of the extended mode on the engagement and motivation of learners.

Previous research work on the impact of Blended Learning on performance, motivation and engagement revealed that learners who participate in both synchronous, as asynchronous modes are more engaged and also demonstrate a significant improvement in skills [27].

Two main effects are highlighted in this research: the effect related to the extended design (*Extended Blended Learning*), and the principle of integration of educational resources. Both in terms of the observations and the evaluation of the learning experience, the results obtained in this research are encouraging.

1) Instructional design based on Ex-BL

The components of the adopted instructional design are appreciated positively. This appreciation has considered components as varied as the units of the course; the course content; the blended learning mode; the online platform used (Edmodo), Gamification and Game mechanics; and serious games.

2) Learners' motivation

Without prior knowledge of the subject matter and without prior knowledge of the online platform Edmodo, learners have demonstrated sustained motivation throughout this learning experience.

This motivation was further encouraged by the adoption of the Ex-BL as instructional design approach, the fact that learners have a positive perception for the extension of Ex-BL in formal learning and its impact on learners' motivation.

Moreover, the motivation of learners was apprehended at both the observation of behavior and through the evaluation of the learning experience.

Indeed, the observations made from this experiment indicate a strong involvement of learners in the learning process. A positive implication has been recorded through various indicators, including:

- a significant rate of student participation.
- a rich and varied electronic resource sharing.
- high consultation rates of shared resources.
- rich participation by issuing comments on shared resources.

This involvement was particularly encouraged by the Game mechanics & Gamification embedded in the learning process, ensuring a reward to any significant and beneficial learner's participation. Then, learners appreciated positively the principle of "rewarding the effort" of sharing and participation.

Moreover, serious games are a force for technology-enhanced learning [28], the fact that the vast majority of learners appreciated and encouraged at the same time extending their use in formal learning curriculum.

However, the design of educational games is not a simple task and there are no solutions for all uses [29]. In this sense, the Gamification can be a valuable complement.

3) S2P Learning Model: a model for the Extended Blended Learning

In general, the results obtained in this research confirm at a significant extent the assumptions made regarding the use of Extended Blended Learning through the S2P Learning Model as canalization vector of learners' motivation and engagement.

Indeed, this model allowed the design of an extended blended learning experience, combining resources as varied as proprietary content, open content, as well as various mediums such as face-to-face, Online, text, video game and Gamification.

VI. Conclusions

In the context of this study, we showed that the S2P Learning Model as a design framework of formal learning experiences based on extensive mixed approach (Extended Blended Learning) presents indicators fostering motivation and engagement of learners. The potential of Extended-Blended Learning remains enormous and still largely untapped. Therefore, we still need a rich conceptual framework integrating both the Gamification, Serious Game, media resources and OER in general, as part of a formal learning initiative, including the S2P Learning Model.

Indeed, the potential of the Text-based Learning combined with the Game-based Learning, and Media-based Learning is enormous. It remains to deepen the elements of an effective combination, because we need to vary teaching tools for effective learning that brings the learner resistance against demotivation and boredom.

In addition, the context plays an important role in the learning process and, therefore, we need to assess the applicability of the model S2P learning in different contexts (personal, organizational context, academic context, etc.).

In any case, the main issue is the ability to find a balance between the formal and informal dimensions of learning. In a sense that the learner can get the most out of each dimension, encouraging individual initiative by developing autonomy and "self-care" instead of develop total dependence.

Therefore, the personal dimension can feed the formal dimension by analysing the learner's behavior outside the formal system and try to integrate individual significant elements in the formal program.

In this sense, the role of the teacher is to watch over the individual practice of learning to try to capture the significant signals from the individual level, to capitalize on the formal dimension shared between learners without weighing the formal program and educational curriculum. In this case, we must go further deeper, taking into account the behavioral and cognitive studies to enrich and expand the model.

References

[1] M.M. Gasland, "Game Mechanics based E-Learning: A case study". Master thesis Master of Science in Computer Science, Norwegian University of Science and Technology, June 2011.

[2] J. Mignon and J.L. Closset, "Maintien et stratégies de renforcement de la motivation des étudiants dans l'enseignement à distance". Actes du 21ème congrès de l'Association Internationale de Pédagogie Universitaire (AIPU), du 3 au 7 mai 2004, à Marrakech-Maroc.

[3] D.R. Garrison and N.D. Vaughan, "Blended Learning in Higher Education: Framework, Principles, and Guidelines". San Francisco: Jossey-Bass, 2008.

[4] S.E. Bahji, Y. Lefdaoui and J. El Alami, "The Learning Model S2P as a Conceptual Framework for Understanding the Serious Game". Proceedings of the 14th IASTED International Conference "Computers and Advanced Technology in Education (CATE 2011)".11-13 July 2011, Cambridge - United Kingdom.

[5] S.E. Bahji, Y. Lefdaoui and J. El Alami, "S2P Learning Model for combining Game-Based Learning and Text-Based Learning". Proceeding of the 5th Guide International Conference 2011 "E-learning innovative models for the integration of education, technology and research".18-19 November 2011, Rome - Italy.

[6] S.E. Bahji, Y. Lefdaoui and J. El Alami, "Enhancing Motivation and Engagement: A Top-Down Ap-proach for the Design of a Learning Experience According to the S2P-LM". In: International Journal Of Emerging Technologies In Learning (IJET), Volume 8, Issue 6, December 3, 2013. pp. 35-41.

[7] S.E. Bahji, Y. Lefdaoui and J. El Alami, "The S2P learning model: For the combination of the formal and the personal dimensions of learning". In: Journal of Mobile Multimedia (JMM), Volume 9, Issue 3-4, March 2014. pp. 242-252.

[8] H. Mouaheb, A. Fahli, M. Moussetad and S. Eljamalic, "The serious game: what educational benefits?". In: Procedia - Social and Behavioral Sciences. Issue 46, 2012. pp 5502 – 5508.

[9] M.L. Maehr and H.A. Meyer, "Understanding motivation and schooling: Where we've been, where we are, and where we need to go". In: Educational Psychology Review. Volume 9, Issue 4, 1997. pp: 371–409.

[10] F.H. Muller and J. Louw, "Learning environment, motivation and interest: perspectives on self-determination theory". In: South African journal of psychology, 34 (2), 2004. pp. 169-190.

[11] J.E. Brophy, "Motivating Students to Learn". New York: Routledge, 3rd Edition, 2010.

[12] I. Ismail, R.M. Idris, H. Baharum, M. Rosli and A. Abu Ziden, "The Learners' Attitudes towards Using Different Learning Methods in E-Learning Portal Environment". In: International Journal of Emerging Technologies in Learning - iJET, Volume 6, Issue 3, September 2011. pp. 49-52.

[13] S. Isaacs, D. Hollow, B. Akoh and T. Harper-Merrett, "eLearning Africa Report 2013". Isaacs S (ed.), ICWE: Germany, 2013.

[14] D. Bilinovac, "ELearning as a Tool for Knowledge Management". Proceedings of the 14th International Research/Expert Conference: Trends in the Development of Machinery and Associated Technology TMT 2010, Mediterranean Cruise, 11 – 18 September 2010. pp. 381-384.

[15] M. Favier, M. Kalika and J. Trahand, "E-Learning/E-Formation: implications pour les organisations". In: Systèmes d'Information et Management, Vol. 9, N°4, Décembre 2004.

[16] E.S.I. Ossiannilsson and A.M. Creelman, "OER, Resources for learning – Experiences from an OER Project in Sweden". In: European Journal of Open and Distance Learning. Issue 1, 2012.

[17] Commonwealth of learning, "COL's policy on open educational resources". URL:www.col.org/progServ/policy/Pages/oer.aspx

[18] J.E. Rooney, "Blending Learning Opportunities to Enhance Educational Programming and Meetings". In: Association Management, 55(5), 2003. pp. 26–32.

[19] B. Means, Y. Toyama, R. Murphy, M. Bakia and K. Jones, "Evaluation of Evidence-based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies". Washington, D.C.: U.S. Department of Education, 2009.

[20] K.E. Amaral and J.D. Shank, "Enhancing Student Learning and Retention with Blended Learning Class Guides", 2010. URL:www.educause.edu/ero/article/enhancing-student-learning-and-retention-blended-learning-class-guides

[21] Ontario Ministry of Education, Defining blended learning, 2014. URL:www.edu.gov.on.ca/elearning/blend.html

[22] G. Zichermann and C. Cunningham, "Gamification by Design: Implementing Game Mechanics in Web and Mobile Apps". O'Reilly Media, Inc., First Edition, 2011.

[23] J.J. Lee and J. Hammer, "Gamification in Education: What, How, Why Bother?". In: Academic Exchange Quarterly. Volume 15, Issue 2, 2011.

[24] S. Deterding, M. Sicart, L. Nacke, K. O'Hara and D. Dixon, "Gamification. Using Game-Design Elements in Non-Gaming Contexts". Proceedings of the 2011 annual conference on Human factors in computing systems (CHIEA'11).ACM, New York, NY, USA, 2425-2428.

[25] K. Erenli, "The Impact of Gamification: Recommending Education Scenarios". In: International Journal of Emerging Technologies in Learning (iJET), Volume 8, Issue 1, Special Issue 1: "ICL2012", January 2013.

[26] S.E. Bahji, Y. Lefdaoui and J. El Alami, "The Learning Model S2P: a formal and a personal dimension". Proceeding of the 4th International Conference on Next Generation Networks & Services (NGNS'12). 2-4 December 2012, Algarve-Portugal.

[27] R.Y. Jee and G. O'Connor, "Evaluating the Impact of Blended Learning on Performance and Engagement of Second Language Learners". In: International Journal of Advanced Corporate Learning (iJAC). Volume 7, Issue 3, 2014. pp. 12-16.

[28] P. Moreno-Ger, D. Burgos and J. Torrente, "Digital Games in eLearning Environments: Current uses and emerging trends". In: Simulation & Gaming. Volume 40, Issue 5, 2009. pp. 669-687.

[29] P. Moreno-Ger, D. Burgos, I. Martínez-Ortiz, J.L. Sierra, and B. Fernández-Manjón, "Educational Game Design for Online Education". In: Computers in Human Behavior, 24 (2008). pp. 2530–2540.