

## DESIGNING BLENDED-LEARNING WEBSITES FOR LEARNING AND ENJOYMENT: FROM STUDENTS' PERSPECTIVE

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### ABSTRACT

Today's students demand greater control of their own learning and the inclusion of technologies in ways that meet their needs and preferences in their use of the Internet and the World Wide Web. These students are no longer passive consumers but active producers of knowledge. It is critical to understand the concepts of enjoyment and learning for enjoyment to allow the introduction of new era where the humans are having informal leaning while surfing the Internet. Also, it seems that the guidelines for the website design have to change as well to keep pace with the new learning concepts.

In this paper, a previous study is considered as a milestone, in which some characteristics where recommended to the systems/websites that provide enjoyable online learning along with some guidelines for these systems/websites. This study aims to generalize the findings that were put in a museum context to be applicable to any informal learning context like blended learning. To do so, a questionnaire was developed and distributed to students from new media department where they have the interest about this particular issue. The results were positive; therefore, another step took place, which consists of interviews to the same questionnaire's population to investigate the top and bottom features. The study concludes that the recommended characteristics & design guidelines that encourage enjoyable informal learning can be generalized to more than museum case study with some concentration over specific ones.

**Keywords:** Learning and Enjoyment; Website Design; E-learning; blended learning

### Introduction

The "Internet" offers multiple advantages if we compared with other "mass media": it offers the access to: (1) a large amount of information, (2) it is flexible, (3) allowing the use of images and video, (4) and it allows linking to Web sites on a specific subject, makes everyone is connected with everyone. Thus it is part of the current and further expanding knowledge and new learning paradigms.

The most visible impact of blended and E learning is on distance education, which has been around for some time and had some limitations. The first and foremost change that E learning has brought in is that it has pulled down all the barriers of time and geography. Classic or traditional approaches to teaching and learning are normally depending on prepackaged learning materials with specific deadlines, and assessment tasks that defined by teachers (McLoughlin & Lee, 2008). The breed of these tools and technologies encourage us to consider how new modes like "community-based" sharing and content creation might be applied to the traditional or formal learning spaces of colleges and universities (Ralf & Marc, 2007).

According to the "Global Monitoring Report" in 2015, the e learning has started to make its way into developing countries and is believed to have huge chance for governments who struggling to meet a growing demand for education while facing an increasing shortage of teachers (UNESCO, 2015). Like no other training form, E-learning promises to provide a single experience that accommodates the three distinct learning styles of auditory learners, visual learners, and kinesthetic learners.

One of the advantages of e learning it offers a new type of self based instruction, which "print media" cannot provide. Modern learners are allowed to speed through instruction that is detailed. The new perspective of education not only impacted the way education was delivered but also it influenced the type of education that offers today. That it why e learning is including of ultimate number of participants with ultimate range of learning preferences, styles, and needs. On the other hand Blended Learning courses is a combination of "online and classroom" learning methodology and uses different resources in a new way to improve student learning outcomes (LOs) and to address important institutional issues (Garrison, 2004). Blended Learning refers to "an approach that combines E-learning with traditional in-person learning" (Hanna, 2019). There for, a blended learning program can consist of (a) monthly in-person training days, (b) weekly assignments, and (c) peer-to-peer discussions on a digital application or platform.

This research focuses into the concept of informal learning (blended learning) and its interaction with enjoyment and learning for enjoyment. The objective for this study is to generalize the findings of Lin *et al.* (2010) regarding the main characteristics of encourage enjoyable informal learning: novelty, harmonization, no time constraint, and

proper facilitation, and gives some of the recommended for a design guidelines of websites involved in informal learning with enjoyment.

The paper is arranged as follows; a background is presented in the next section to cover some of the basic concepts related to this research. This is followed with describing the main related work, which this work is based on; e.g., Lin *et al.* work in 2006, 2010, and 2012. Our methodology is described next, followed by the results and conclusion.

### Background

Effective design of blended- learning materials and tools depends on “didactic design processes”: that produce the absence of face-to-face instruction. This change in learning context and process is an essential factor that specifies blended learning from traditional instruction, and will require new considerations such as those outlined in this paper.

The transaction from traditional learning to blended-learning methods have been widely researched, some of these researches suggesting that the E-learning programs can, but do not always, deliver improved learning outcomes (LOs) (Shakar, M., & Neumann, Y, 2003). The change in learning context affects the students and teachers relationship, which becomes different in many sides such as the interaction among student, online materials, the broader community of Internet users, and the duties of the teachers as facilitators and mentors. The next section discusses the relevance of understanding the concepts of: “enjoyment, learning for enjoyment, and website design” as a needed background to such field.

### “Online learning”:

Online learning describes education method that provide only through the Internet; it means that online learning doesn't consist of any physical learning activities or materials issued to students or actual face-to-face classroom. Online learning is “ the use of E learning tools in a distance education mode using the Internet as the main medium for all student learning and materials”. (Nichols M., 2003)

### “Blended -based learning”:

Blended or mixed mode describe an approach to education that combines “face to face” and “distance learning” to education mood in that case this will allow the instructor or tutor to meet with his students in both ways: (1) face to face mode. (2) Through a technological means using the Internet. According to the resource-base of content materials and learning activities is made available to students. According to researchers, the Internet and new technology takes an important role in blended learning; compared with the E learning courses which take place online and online only (Ravenscroft 2001). It means using the technology is the core part of E learning programs, but in blended learning the technology and the Internet is one of the mediums that help facilitate the teaching and learning experience.

Friesen (2016) defined blended learning, as “almost any integrations of technologies, pedagogies and even job tasks’. Procter in 2003 defined blended learning as “the effective integrates of different modes for course delivery, models of teaching and styles of learning”. According to the study of Chew, Jones and Turner in 2008, “blended learning involves the integrations of two fields of concern: (1) education (2) educational technology”. According to the study of Graham (2006), any Blended learning course methodology will combine face-to-face education mood with computer-based mood.

According to the study of Staker and Horn (2012), blended learning is “a traditional education program in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, place, path, and/or pace”.

These definitions helps to identify the main characteristics of blended learning according to: (1) The environment, (2) Instructional component and (3) Media component.

Blended learning characteristics	
The environment	<p>A learning environment can either be (synchronous) or (asynchronous)</p> <p>Synchronous mood will take place in real time. It means in this methodology the communication between the students and the lecturer requires them to both be present at a given time.</p> <p>Activities examples: chat conversations and audio/video conferencing.</p> <p>Asynchronous mood are time-independent. The best example of this learning mood is the E learning course because it takes place at any time.</p> <p>Activities examples: E-mail or discussion boards.</p>

Instructional component	This Instructional component is monitoring the use of the most appropriate instructional strategies that support the learning objectives. (Graham, C. R., 2006). Activities examples: Online and offline learning, Instructor involvement, Independent learning, and Peer interaction
Media component	<p><u>Live classroom (face-to-face)</u> Blended learning allow in class activities, which will support and create more engagement for the learners.</p> <p><u>Virtual classroom</u> Learning process can take place over the internet, the learners will interact with the teachers throw the discussion board or emails. (Woodall, 2010).</p> <p><u>Self-paced learning</u> Self-paced Learning sessions (Asynchronous): Materials for self- Paced sessions supported by well- designed study materials such as: pre- recorded classes, animated curriculum, web- based resources, videos, online discussion, online collaboration using wikis, forums or discussion boards, online quizzes, and online learning communities.</p>

Table (1): Fundamental and characteristics of blended learning (Nichols M., 2003)

#### **“Learning and Management System”:**

LMS is a combination of E Learning tools available through a shared managerial interface. A “learning management system” can be a type of a platform in which online or offline courses and courses components or materials including the assessments tools are assembled and used from. (Nichols M., 2003)

#### **“Interactive learning”:**

According to Nichols M., 2003, there are two types of interactivity in education, indicative and simulative. (1) Indicative is designate by the use of interaction tools such as button and site navigation. (2) Simulative is interactivity that enables learners to choose their own materials in a way that provides some form of feedback. Interactivity, is important in blended or online learning systems, it creates opportunities for the learners input so that the learner gets more involved with the lesson content instead of only being a passive observer.

#### **E-Learning and blended learning theory**

A theory can be described as: “a set of hypotheses that apply to all cases of a particular event, assisting in decision-making, philosophy of practice and effective implementation through practice” (Nichols, M., 2003). According to the previous definition of E learning it depending on using electronic applications in processes to learn.

E-learning processes and applications include the following: “Web-based learning”, “computer-based learning”, “virtual classrooms” and “digital collaboration”. Content in e learning mood and blended mood is delivered via the Internet, “intranet/extranet”, “audio or video tape”, “satellite TV”, and “CD-ROM”. Elliott Masie, one of the renowned experts in e learning, proposed his theory based on that “E- learning is the use of network technology to design, select, deliver, administer, and extend learning” (Chadha G. & Kumail N., 2002).

Blended learning is a recent education concept depending on the use of the Internet technology, the content in Blended learning is delivered in digital mood using learning management system, provides a learner-orient approach for the teachers and students. The blended course methodology promotes the construction of “life-long learning opinions and learning society”. This concept means: first, the delivery of digital content is the main character of learning approach. Second, blended learning extends the environment on the Internet; this environment is focused on learner-oriented, so we can change the thoughts of traditional teacher-center's instruction in classroom. Third, as a modern concept of education, it gives us a condition to realize the life-long learning process and help us to build more real learning and assessments society.

More practical view of knowledge has emerged where fact memorizing has become history, so we can't ignore the capabilities of the web in terms of providing anytime anywhere learning and the learners will choose their own course and their own timing to learn. According to the “70/20/10 model of learning and development” (Lombardo, et al, 1996). 10% of learning happens in a traditional classroom environment. The remaining 20% and 70% comes from interaction with peers and creative assignments.

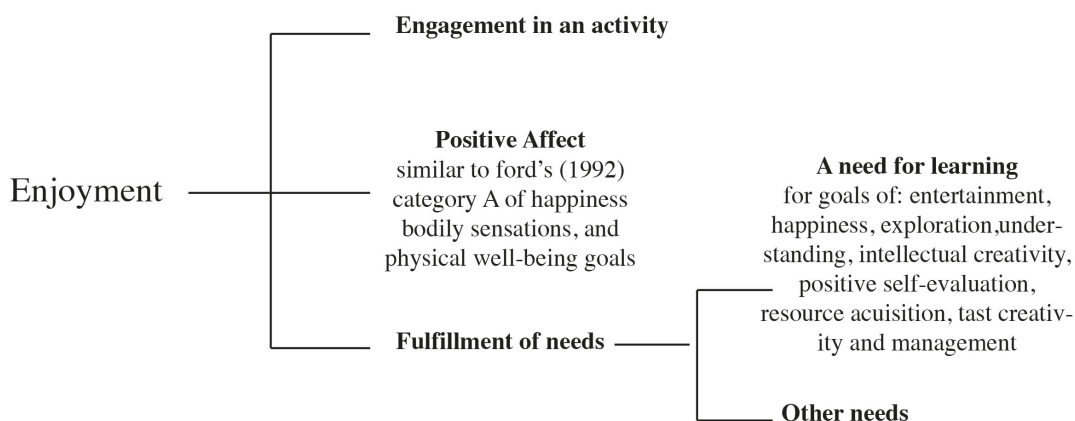
By examining blended learning methodology, the researcher show that 70% of long-term professional development occurs, because the learners is participants to a lot of different activities that encourages them to apply the things they've learned into their work on a daily basis. The delivery mood combined with peer-to-peer collaboration and discussions on a digital facilitation application and platform. Theoretically part only account for 20% learning, it's the 20% that can make or break a learning experience.

### “Enjoyment”:

Psychologists and Philosophers have created researches and concepts relating to enjoyment, but definitions of “enjoyment” vary: first, in philosophy side as Perry (1967) suggested that “enjoyment” is a non-evaluative, non-cognitive and pro-attitude toward some actual object. These objects are a present doing, undergoing, or experiencing on the part of the subject. He also explained “to be enjoying a thing or to be deriving enjoyment from it is to have such a pro-attitude toward it”. (p. 214).

The concept of fun and “enjoyment” has been identified as important in the learning for older students. According to the study of Lightfoot and Brady In 2005, they explained that older “people talked about the new and exciting ideas they were learning and the joy it provided” when describing their learning experiences (p 230).

Warner (1980), in his study of enjoyment, defines “enjoyment” in terms of three necessary sub-constructs: Engagement, Positive Affect, and Fulfillment. For learners to enjoy an activity, they have to: (1) participate totally in the activity; (2) be positively affected in terms of excitement, satisfaction, contentment, and (3) achieve implementing of needs or desires through the activity (Warner, 1980). In the following Figure (figure 1) illustrates how the concepts of learning and enjoyment can be related in learning methodology.



**Figure 1:** concepts of learning and enjoyment in education (Warner, 1980)

The student's in learning enjoyment acts as a milestone to encourage their learning action. The availability of a scale and researches that measures the enjoyment offered by e learning and blended course management systems encourage the web designer to understanding the strength and flaw of the interactive learning efficiently from the learner's points of view.

### Related Work

First study: In 2005, a study of Andrew R. and Bradley highlighted the essential elements of effective design that assist in the development of teaching materials in effective way. This study introduced six elements of design process, these elements focus on paying attention to the learning activity, which includes: activity within an interesting story line, providing reliable opportunities for student reflection and third party criticism, considering new technologies for delivery, ensuring that the design is convenient for the context of the course, and bearing in mind the personal, social, and environmental impact of the designed activities. This study describes how these design elements can be effectively applied with examples from e-learning action. The six areas as mentioned in this study includes: (1) activity, (2) scenario, (3) feedback, (4) delivery, (5) context, (6) and impact (cover issues across all disciplines involved in e learning design process). They assume that in many business situations, the e-learning goal is to improve actual business outcomes, which achieved indirectly by the effectiveness of the e-learning course or education.

Second study: the study of Lin and Gregor In 2006, examined the design of websites that encourage both “learning” and “enjoyment”. The study examined museum websites that offer educational materials. This study helps to reduce the gap in the literature, specifically “learning for enjoyment,” by introducing a number of semi-structured in-depth interviews with museum and educational experts in Taiwan. The conclusion of this study identifies the nature of E-Learning for enjoyment.

The results show the following terms like “ease-of-use, appearance”, “user-centered design”, and “employment of well-resourced qualified staff”, are important and harmonious with general principles of students-centered design. The findings also stand with Pace’s (2004) study which found that features such as ease of understanding and aesthetic appeal contributed to users’ which called “flow experience”. The study of Lin and Gregor discussed new features include: interactivity, lower complexity and the consideration of self-directed learning (self study). The importance of this study lies in its identification of these specific features that the experts see as central to their mission of providing enjoyable online learning in different contexts.

Third study: According to the Blended Learning Handbook of Bonk and Graham (2006), blended learning should include a shift from “teacher-centered approach” to “student-centered instruction” in which students become active and interactive learners. This increases in interaction between student teacher (face to face class room), student-student (peer to peer), student content (self study), and student-outside resources activities (flipped class room). For the assessments tools is the integrated formative and summative assessment mechanisms for students and teachers.

**“Blended learning” tools:** divided into: (1) Asynchronous tools, such as forums and wikis, both activity example for courses that require reflection and more time to accomplish. (2) Synchronous discussions are especially important for learners who are too shy or lack language fluency to engage effectively in real time conversations.

Forth study: Another paper presented the techniques that have used to reduce the gap between all stakeholders in the development of eLearning material. The conclusion considered that the well-known “ADDIE” model is modified to suit with the current requirements and to overcome the identified challenges. The “ADDIE” model is an excellent way to build any online or blended course. “ADDIE: is an acronym that stands for the five phases: Analyze, Design, Develop, Implement, and Evaluate. The best way to learn how to create an online and blended course is to follow the ADDIE model (Michael C., 2018).

Fifth study: Lin et al conducted another related study in 2010. His study was an empirical study from the “end users’ perspective” describing the design of websites that support enjoyable web experiences and informal online or blended learning. The study was designed to repair the gap in the recent researches by analysis on abundance of end users’ opinions and perspectives. The study presented a set of characteristics for emboldening online and blended learning experiences, and proposed a number of conceptual guidelines for developing an online or blended learning website for enjoyment based on the end user’s view.

Lin et al study (2010) tested three relevant web sections related to a “modern museum context” offering diverse design features to stimulate the participants into different modes of thinking. These sections participate as a part of the award-winning site “Age of the Great Khan”. In this case, each section was different according to the following: First was the “Balance” section which contained interactive multimedia presented how to develop a balanced painting in six steps. Second the “Portraiture” section presented interactive multimedia illustrating of new painting techniques, displayed in 27 steps with animated graphs. The third section was a “reading-based section”. The results of the final Data were collected by an online questionnaire from voluntary participants.

According to the final results of the survey: (1) The participants agreed on formal website design features, including “attractive appearance”, “ease of use and navigation”, “opportunities to interact”, “accessibility to people anywhere at any time”, “short and simple learning tasks”, “free access”, and “provision of feedback” are all important. (2) The “open-ended responses” that were analyzed focus directly on the characteristics of any systems that supply for enjoyable online and blended learning, followed by the design guidelines for these websites.

Sixth study: by, Lin et al. in 2012, has conducted second study to understand web enjoyment experience and informal learning. In this study also reported on an empirical research that analyzed the learning and enjoyment experiences of a large number of volunteer learners in a also museum context. This study explored in depth how designing for an enjoyment experience has special characteristics that differentiate it from traditional websites design, and suggests a number of “conceptual guidelines” for developing an online learning website for enjoyment.



### Methodology

This study is developed based on Lin *et al* (2010) final results in their study, which concluded some characteristics, and design guidelines that encourage enjoyable informal learning in museum context. This research aims to assess the findings of the previous mentioned study by conducting descriptive research from two steps. The first step is developing a questionnaire to reveal the attitudes towards the suggested dimensions in the previous mentioned study in a general context.

In the research process a questionnaire was developed examining a number of 30 several questions: with “single and multiple choice”, in an open form (essay). The “questionnaire” consists of two main parts; the first part presents the demographic variables of the sample (age and gender); the second part contains the 15 items align with five dimensions Likert scale examining the following dimensions: “(1) Novelty, (2) Harmonization, (3) No time constraint, (4) Proper facilitations and associations, (5) Designing multisensory learning experiences, (6) Create a storyline, Mood building, (7) Fun in learning, (8) Establishing social interaction, (9) Appearance, (10) Interactivity, (11) Ease of Use, (12) Accessibility, (13) Simplicity, (14) Partnerships”.

The population of this research is all the new media students in both the Arabic and English departments, in MTI university in Egypt. The second step of the descriptive research in this research is conducting interviews with the same population of the previous questionnaire. The interview is related to ranking and commenting on the characteristics and design guidelines that encourage enjoyable informal learning for the population. The purpose of this step is to assess the current characteristics and design guidelines for different contexts. The survey was on open access application and was transferred to our respondents through the college learning management system “Moodle” and via e-mail. The survey was offered to students and teachers who had learning experience in “LMS” over the past two years. In total there were received 60 completed answers.

### Results

Figure 2 illustrates the findings from the questionnaire analysis. The result is distributed into two columns according to the attitude of the sample; agree (in red and green) which indicates positive attitude towards the characteristics & design guidelines; and disagree (in orange and blue) which reflect the negative attitude. It is clear that ten out of 15 characteristics & design guidelines show full agreement. The remaining five items show that the majority of the population agrees with the suggested guidelines, but there is a small portion that shows disagreement especially in the “No time constraint” and “Novelty” items.

Table (2): The results of the questionnaire

Criteria	Strongly agree	Agree	Nature	Strongly disagree	Disagree
Novelty	40	25	15	15	5
Harmonization	32	25	30	5	13
No time constraint	43	22	20	3	12
Proper facilitations and associations	25	15	40	12	13
Designing multisensory learning experiences	55	10	10	15	10
Create a storyline	45	25	10	5	15
Mood building	65	10	3	9	13
Fun in learning	70	12	13	2	3
Establishing social interaction	45	25	18	12	0
Appearance	66	24	3	2	5
Interactivity	73	12	2	5	3
Ease of Use	64	16	12	3	5
Accessibility	70	12	13	0	5
Simplicity	75	5	5	10	5
Partnerships	54	12	13	16	5

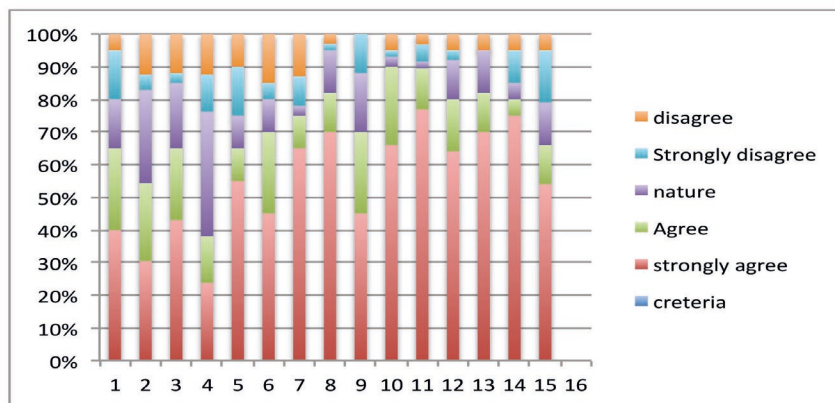


Figure 2: The results of the questionnaire; are the suggested characteristics and guidelines important or not?

The next result is the results of the interviews done with the same population as in the questionnaire. The opinions of the participants vary for some characteristics and design guidelines such as “designing multisensory learning experiences” which was considered by some of the students as a top three features, while other students consider it as an unimportant feature to be in a website for informal learning. However, the students agree on other characteristics to be crucial during informal learning process: having proper facilitations and associations and harmonization in a website were considered the top two features that encourage and ease the process of informal learning. Surprisingly, the third important feature is the ability of a website to create a storyline. It seems that this feature has huge impact on students and their accomplishment.

From the other side, the students agree on the feature that affect them the least; they seem not convinced that there is a real implication for mood building feature. Another unexpected response is that students did not give high attention to the feature of novelty; they are not looking for novel characteristic as much as they need other important issue affecting their learning process.

Regarding the guidelines suggested previously in the study, students agree that the ease of use is the most important guideline for the websites designers and organizations. Another surprising result was that students did not consider establishing social interaction to be a crucial guideline, neither the partnership! Both guidelines were considered as unimportant guidelines from the students’ perspective.

### Conclusion

According to the previous results, this study concludes that the recommended characteristics & design guidelines that encourage enjoyable informal learning can be generalized to more than museum case study. Some features showed to have higher impactation from students’ point of view; such as having proper facilitations and associations, harmonization, and creating a storyline. Also, websites should consider the ease of use as a crucial design guideline. The 15 dimensions that were studied in this research can institute a framework to assess different kinds of websites for enjoyable informal learning. This conclusion was built on the opinion of skillful, knowledgeable, and practical students who have experience in designing websites from one side, and who are using websites as a tool of informal leaning during their study and their future work from another side.

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