Entertaining and Fun: Experience-focused eLearning Material

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ABSTRACT

This paper discusses the high level components of a system; task-focused, user-focused, and experience-focused at length. With the aim to distinguish the experience-focused specifically in terms of entertaining and fun from user-focused and task-focused, a survey on TV programme preferences was carried out and explained. The survey found that viewers prefer to watch reality programmes more than non-reality because the reality programmes contain natural elements such as mistakes, humor, and interferences. This paper next deduces that the reality concept is worth applied in electronic learning material because it is more entertaining and more preferred by the audience.

Key words: *eLM, user experience, fun, entertaining, experience-focused*

1.0 ELECTRONIC-BASED APPLICATIONS

Electronic-based application is a general term referring to applications built for use with electronic gadgets regardless of sizes, shapes, weights, and so on. Sewing machine, TV, computer, simulator, and robots are examples of electronic gadgets. They function in different locations, and domains-of-use. Also, they are designed and developed by different groups of people, to suit specific needs of their users.

The trends in electronic-based application developments have shown significant changes. They evolved with factors in technology-push and market-pull. As an illustration, the telephony technology started with a telephone system by Alexander Graham Bell which was used only to speak with second party. The utility was very limited and operating the telephone was not as easy as today's handset-hang-numbers-pushed procedures. The technology was then made more sophisticated, with the ability to carry the handset away from the telephone up to certain meters with the size reduced. The technology is advanced today with the utilities varied, in which users can see each other when calling, more sophisticatedly users can set-up media conference involving multi-party in real time. This kind of evolvement could also be seen in other domains-of-use such as education, medication, and entertainment.

In the old age of electronic-based application, the development was focused on whether the applications perform functions correctly. Later, when technologies evolved and offer multiple utilities to users, the development adds another focus, to make users feel easy to use the applications (Preece et al., 2007, Dix et al., 2004; Wickens et al., 1998). Currently, users want the applications to be more than just able-to-use, but also to be more experience-stimulating (Kaye, 2007).

This paper aims to discuss the arguments above at length with relation to electronic learning materials (eLM). First the concept of tri-focus electronic-based applications (EBA) is discussed. Each component is described at length. Next, works in this study are explained by addressing the definitions and concepts that split entertaining and fun. Then, entertaining and fun are applied in eLM where empirical results of a survey are found supporting the idea. The discussions in this paper are finally wrapped-up by briefly noting viewpoints of user experience.

2.0 THREE-FOCUS EBA

An EBA is developed comprising three high level components which are referred to as task-focused, user-focused, and experience-focused.

2.1 Task-focused

A system is developed with its functions in mind. It is extremely important to make all functions work well as they are intended to. In the design phase, the functions are determined through outlining certain diagrams such as data flow and entity relationships. More specific functions are outlined in the screen-sketch design. The system designer and developer which may consist of programmers and project managers pay critical attention on the functions to ensure their worthiness. Those functions that support users' tasks are classified as task-focused. When the functions are not well-designed; such as calculator does not calculate accurately, or entered data are stored in incorrect format in the database; users' tasks might be influenced, and difficulties might arise in the sense that functions may not be performed as they are expected. As a consequence, the system which is unable to

come out with expected results will not be used for a sufficient period relative to the investment put upon. In the development cycle, this task-focused part is essential for full-determination. In evaluating the task-focused part, the development team will validate the systems from the standpoint of utility, such as (1) quality assurance, (2) zero defects, (3) utility to design features, and (4) intrinsic in the systems.

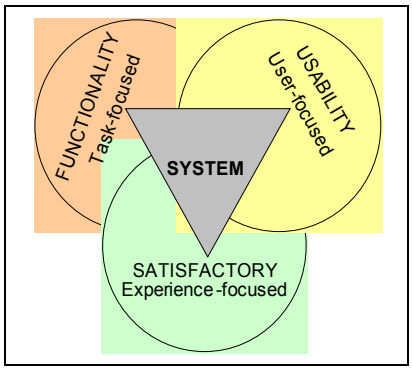


Figure 1: high level components of an EBA

2.2 User-focused

Besides the task-focused, there are also aspects that do not really concern about the utility, but more on the users. These aspects are grouped into concerns relating to users' perceptions on issues like ease of use, ease of learning, products' intuitiveness, and users' appreciation over the products' usefulness (Wickens et al., 1998; Wiberg, 2001; Dix et al., 2004; Preece et al., 2007). Authors name the field of study as usability.

In general, usability concerns about the system interface; how well the system interface serves the users in performing tasks, and is classified as user-focused. There are of course many issues to observe including content, structure, layout, and navigation. Systems' ease of use, usefulness, and interface are found very important. So, researchers have constructed and established some instruments for evaluation. Perceived Ease of Use is widely used for evaluating how easy a system is to use; while Perceived Usefulness is adoptable to evaluate how useful a system is to use. These two famous instruments are found in Technology Acceptance Model (TAM) framework and applied in various fields. In addition, Questionnaire for User Interaction Satisfaction (QUIS) is provided for evaluating systems' interface in terms of their physical look and feel.

These usability issues are generally not important to the programmers, but the system interaction designers. Interaction designers are people who plan for the best ways to support users' tasks. They have in their mind users' general behavior and preferences when designing for the interaction styles. They map the usability issues and users' behavior and preferences in supporting these user-focused aspects in system development. Usability issues are inspected and evaluated in usability testing throughout the development works from start to finish; making sure designs are met with users' expectation. Literatures include a number of techniques to evaluate system's usability such as questionnaire, observation, interaction log, laboratory testing, and interview. Besides, field study and analytical evaluation are also among approaches in evaluating usability issues. Analytical evaluation consists of inspection (heuristics and walkthroughs) and theoretically-based models such as GOMS, Keystroke levels, and Fitt's Law (Preece et al., 2007). All these techniques are applicable at different stages of the development spectrum. In usability testing and field study, users are involved to feed back about the system's interaction design. While, in the analytical evaluation, experts are involved to feed back about the system's interaction design on behalf of the real users, by absorbing their knowledge about the real users into their own selves. This approach is suggested at the end of development works.

Beyond usability, however, is the critical criterion of satisfaction, which no amount of validation testing or quality assurance testing would reveal. The measure could only come from users, using many techniques of data collection (Carrol & Thomas, 1988; Wickens et al., 1998; Kwon & Chidambaram, 2000; Dix et al., 2004; Preece et al., 2007). Researchers defined these two as different aspects of a system. Those works which discussed about satisfaction focused on how users experience the system, and classified as experience-focused aspect of a system.

2.3 Experience-focused

There were few researches carried out on measuring satisfaction despite the aspects of ease of use and effectiveness (Carroll & Thomas, 1988). However, in recent literatures, attempts are found to research in the subject (Mahmood et al., 2000; Chin & Lee, 2000; Lindgaard & Dudek, 2003). Besides, attempt to shift from usability alone to user experience is also included in Wright et al.'s (2000) work. Wiberg (2001; 2005) further explored the satisfaction. Later, the work in investigating user satisfaction was extended by Kaye (2007). In addition, experience is closely related to feelings and emotions. In relation, works investigating users feeling and emotions can be found in Malone (1980; 1984), Amory et al. (1999), Pinhanez et al. (2001), Asgari and Kaufman (2004), and MacFarlane et al. (2005).

In those studies, aspects of task-focused and user-focused as discussed in previous sections were not studied, but only were on experience-focused. To be more specific, they investigated the entertainment and fun aspects of the objects of study. Although those researchers do not split entertainment and fun, this study does.

3.0 ENTERTAINING AND FUN IN EXPERIENCE-FOCUSED

In this study, entertaining and fun are differentiated. It starts with the definitions in dictionaries.

Entertaining is an adjective, comes from the word "entertain". Merriam-Webster[1] defines entertain as *to show hospitality to* and *to provide entertainment for*. Those definitions are exactly similar as definitions by The Free Dictionary by Farlex[2] and answer.com[3]. Besides the same definition, Reader's Digest (2006) adds another definition to it as *to amuse or interest someone*.

Merriam-Webster online dictionary defines fun as *what provides amusement or enjoyment*. Another definition by Merriam-Webster is *violent or excited activity or argument*. Other two online dictionaries, The Free Dictionary and answer.com define fun as *a source of amusement, enjoyment, or pleasure*. Also, Reader's Digest (2006) defines fun as *enjoyment or amusement, and causing laughter*.

From the above definitions, this study ought to investigate the relationship between entertaining and fun. When standard dictionaries and thesaurus were consulted, the definition of both entertaining and fun were found not similar as presented in Figure 2.

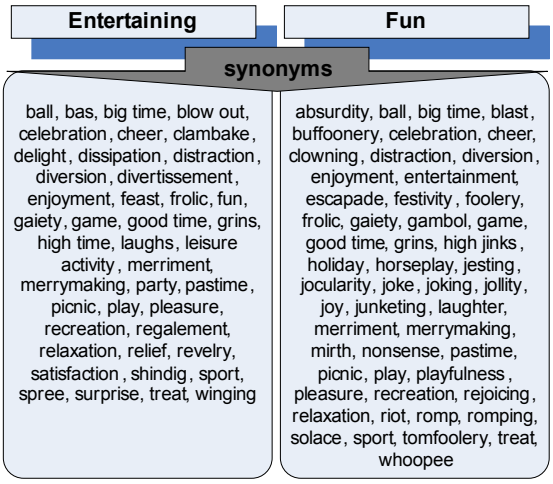


Figure 2: Synonyms for entertaining and fun

It is noticed that both words are somewhat overlap in meaning. There are 22 common terms in both words, which makes up 51% of 43 synonyms for entertaining and 42% of 52 synonyms for fun. This indicates that both words are correlated at 40 to 50 percent. However, the remaining percentages are not known, and in some cases, the notions differ in meaning. It has been addressed long time ago by Langer (1977), who stated that:

> *"…entertainment is not essentially frivolous… Amusement is a temporary stimulus, the 'lift' of vital feeling that normally issues in laughter. It is generally pleasant, and sometimes erroneously sought as a cure for depression. But entertainment is any activity without direct practical aim, anything people attend to simply because it interests them. Interest, not amusement, nor even pleasure, is its watchword."*
>
> (p.404)

Entertainment in Langer's definition above is the noun for the verb entertaining, so they are significantly correlated, and can be used intertwined. Also, to further differentiate the words entertaining and fun, this study considers entertaining in relation to comedy and tragedy. Both are understood as entertainment, but not necessarily situations where entertainment and fun are seen as equal. Here, comedy and tragedy are entertainment, but tragedy is not fun. In regards to this, Langer (1977) adds that

> *"…Shakespear's tragedies were written for an entertainment theater in which people sought not amusement but the exhilaration of artistic experience, overwhelming drama."* (p. 404)

Up to this end, this study sees both words as differ in meaning. Originating from the definitions and concepts discussed above, this study traversed 20 previous works (such as those listed earlier) to search for criteria for entertaining and fun. In addition, this study emphasizes an approach; entertaining as the characteristics of the system, while fun is referred to human feeling when using the system. Figures 3 and 4 present criteria for both aspects.

An example of EBA is eLM. They are targeted to assist learning, containing learning contents. With that in mind, this study emphasizes entertaining and fun aspects of user experience which stand as part of experience-focused into eLM. The criteria in Figures 3 and 4 are worth-incorporated.

4.0 ENTERTAINING AND FUN IN ELM

eLM, with the aim to provide learning contents to learners, should make learners feel happy to use, and wanting to use them repetitively. This intrinsic motivation is encouraged by positive experience when using the eLM. eLM consists of different parts; content and the interface. Contents can be found in different outlets such as books, notes, audio files, and visual files. As an example, contents about sun will be similar no matter in what outlet it is found. But, the interfaces make learners experience differently. This is where the entertaining

[1] http://www.webster.com/cgi-bin/dictionary
[2] http://www.thefreedictionary.com/fun
[3] http://www.answers.com/topic/fun

and fun aspects play role. Entertaining eLM that invoke fun will engage learners.

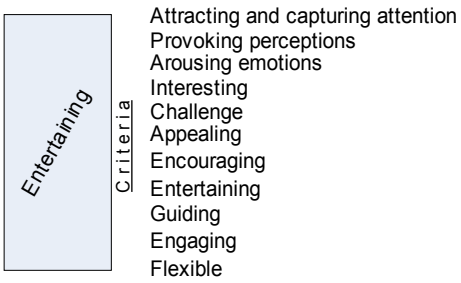
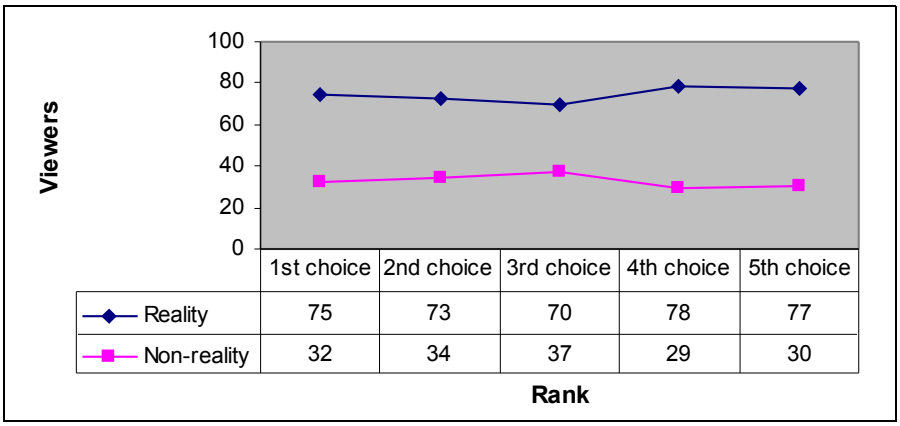


Figure 3: Criteria for entertaining

Figure 4: Criteria for fun

What makes learners feel entertained and engaged could be observed through the sources of entertainment, which in most places TV are referred to. There are evolving trends in TV viewing. Since the early 21st century, one of TV companies in the UK has introduced a reality TV Program. It was a genre which has no comprehensive script to follow either for dramatic or humorous situations. It documented actual events and featured ordinary people where there was no professional actor. This genre, even though has existed in some form or another since the early year of TV, the term "reality TV" has been mostly used to describe programs produced since 2000. Today, reality TV program becomes more popular, and has been introduced and practiced in many countries. Since then, it was said that reality TV was preferred more than non-reality TV programmes.

A survey has been carried out to investigate whether the issue is true. Several mailing lists for children and adults were posed with questions asking the lists' members to list five most favorite TV programmes with the reasons. Valid feedbacks were gathered from 107 respondents, and all favorite programmes. In the analysis, the programmes were classified into reality and non-reality. From the classification, it is sure that reality TV shows top the lists of favorites (see Figure 5) and among the main reasons is that they visualize real events, with mistakes included.



	1st choice	2nd choice	3rd choice	4th choice	5th choice
Reality	75	73	70	78	77
Non-reality	32	34	37	29	30

Figure 5: Difference between preferred reality and non-reality TV programmes

Further, the difference between reality and non-reality TV shows can be noticed in their contents and presentation. Reality TV shows include things that are cut in non-reality shows such as errors, interferences, and humors.

The phenomenon in change of preferences over TV programmes should be taken as a serious indicator that learners want to learn with eLM offering natural look and feel. Comparing with daily activities, in actual - mistakes, feedbacks, and interferences may help fostering learning or knowledge acquisition. As results of those elements, learners laugh, discuss, trigger ideas and concepts, and perform activities either alone or in groups.

Current eLM such as courseware, educational TV programmes, and video are found too content-centric. Ariffin and Norshuhada (2008) report that there are usable eLM but not entertaining which are consequently not used by the users. Those eLM were provided by ministry of education to secondary schools of a developing country. This carries meaning that the contents of the eLM are perfect, and the interface is usable. However in terms of user experience, the eLM are not entertaining, and users feel tensed when using.

5.0 DISCUSSION

This study has elicited numerous previous EBA to investigate the components that make up a system. Task-focused and user-focused are two common components discussed by authors in software engineering and usability engineering. Another component is experience-focused; a component that concerns about how users experience a system (Kaye, 2007). Three viewpoints of user experience (Ariffin & Norshuhada, 2007); by Jesse (2000), McCarthy and Wright (2003), and Morville (2004); show important elements for a system in terms of experience-focused. In their viewpoints, those authors discuss that users want to have good experience at all stages of the system, from the physical branding until how the system serves users' preferences. It is a concern among researchers to incorporate investigation on experience-focused in EBA.

Accordingly, this study proposes a type of eLM, with intention to make learners feel fun when learning. The eLM is called Reality Learning Media (RLM). The concept (Ariffin & Norshhada, 2009) of RLM incorporates reality elements to ensure learning is entertaining and fun.

REFERENCES

Amory, A., Naicker, K., Vincent, J., & Adams, C. (1999). The use of computer games as an educational tool: Identification of appropriate game types and game elements. *British Journal of Educational Technology*. 30(4). 311-321.

Ariffin A.M. & Norshuhada, S. (2007). Conceptual Design Model of Reality Learning Media (RLM) In *Proceedings of 1st International Malaysian Educational Technology Convention*, Malaysian Educational Technology Association (META).

Ariffin A.M. & Norshuhada, S. (2008). Usable but not entertaining eLearning materials. In *Proceedings of World Conference on e-Learning in Corporate, Government, Healthcare, and Higher Education (e-Learn)*, USA. AACE.

Ariffin A.M. & Norshuhada, S. (2009). Conceptual design model of Reality Learning Media (RLM). In *Proceedings of IADIS International Conference e-Society 2009*, Barcelona, Spain. IADIS.

Asgari, M., and Kaufman, D. (2004). Relationships among computer games, fantasy and learning. In *Proceedings, Educating Imaginative Minds: 2nd Annual Conference on Imagination and Education.* Vancouver, BC.

Carroll, J.M. & Thomas, J.C. (1988). Fun. *SIGCHI Bulletin*. 19(3). 21-24.

Chin, W.W. & Lee, M.K.O. (2000). A proposed and measurement instrument for the formation of IS satisfaction: The case of end-user computing satisfaction. In *Proceedings of International Conference on Information Systems.* 553-563.

Dix, A., Finlay, J., Abowd, G. D., & Beale, R. (2004). *Human-computer Interaction 3rd edition.* Pearson Education Limited. England

Jesse, J. G. (2000). *The elements of user experience*. *User-centered design for the web*. USA: New Riders.

Kaye, J.J. (2007). Evaluating experience-focused HCI. In *Proceedings of CHI2007*. San Jose, USA. ACM Press.

Kwon, H.S. & Chidambaram, L. (2000). A test of the technology acceptance model: The case of cellular telephone adoption. In *Proceedings of the 33rd Hawaii International Conference on System Sciences*. Hawaii, USA.

Langer, S.K. (1977). *Feeling and Form. A theory of art developed from Philosophy in a New Key*. New Jersey: Prentice Hall.

Lindgaard, G. & Dudek, C. (2003). What is this evasive beast we call satisfaction? *Interacting With Computers.* 15. 429-452.

MacFarlane, S., Sim, G., & Horton, M. (2005). Assessing usability and fun in educational software. *In Proceedings of The 2005 Conference on Interaction Design and Children*, Boulder, Colorado.

Mahmood, M.A., Burn, J.M., Gemoets, L.A. & Jacquez, C. (2000). Variables affecting information technology end-user satisfaction: A meta-analysis of the empirical literature. *International Journal of Human-Computer Studies.* 52. 751-771.

Malone, T.W. (1980). What makes things fun to learn? Heuristics for designing instructional computer games. *In Proceedings of the Joint Symposium of 3rd SIGSMALL and 1st SIGPC Symposium on small system.* Palo Alto, USA.

Malone, T.W. (1984). Heuristics for designing enjoyable user interfaces: Lessons from computer games. In Thomas, J.C. & Schneider, M.L. (Eds), *Human Factors in Computer Systems*. Norwood, NJ: Ablex Publishing Corp.

McCarthy, J. & Wright, P. (2003). *Technology as Experience.* Cambridge, MA: MIT Press.

Morville, P. (2004). *User Experience Design*. Retrieved from http:semanticstudios.com/publications/semantics/000029.php on 19th Aug. 2007.

Pinhanez, C., Karat, C., Vergo, J., Karat, J., Arora, R., Riecken, D., & Cofino, T. (2001). Can the Web be passive? *In Proceedings of International WWW 2001*, Hong Kong.

Preece, J., Rogers, Y., & Sharp, H. (2007). *Interaction Design: beyond human-computer interaction 2nd edition.* England: John Wiley & Sons, Ltd.

Reader's Digest (2006). *Word Power Dictionary*. The Reader's Digest Association. Hong Kong: Far East Limited.

Wiberg, C. (2001). From ease of use to fun of use: Usability evaluations guidelines for testing entertainment web sites. *In Proceedings of Conference on Affective Human Factors Design,* CAHD, Singapore.

Wiberg, C. (2005). Usability and fun: An overview of the relevant research in the HCI community. *In Proceedings of the CHI Workshop on Innovative Approaches to Evaluating Affective Interfaces,* Portland, OR.

Wickens, C. D., Gordon, S. E., & Liu, Y. (1998). *An introduction to human factors engineering.* USA: Addison-Wesley Educational Publishers Inc.

Wright, P., McCarthy, J. & Marsh, T. (2000). From Usability to User Experience. *A British HCI Group one-day meeting on: Computers and Fun 3"* Retrieved from http://www-users.york.ac.uk/~am1/C&F3abs.PDF on 23rd April 2008.