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Assessment of Blog in Course Delivery

Applying the UTAUT Framework



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DEDICATION

To my parents, my family, and my best friends, Michael Febriyanto and Revina Dwiyanti Ruslie. – Mario Susanto

To AC and CIP. – Bens Pardamean

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OVERVIEW OF THE STUDY

Background

Blog is one of many technologies for education and learning that is currently in common use. Hsu (2008) state that at the beginning, blog started as a means for expressive individuals to post online personal diaries. Eventually, blog evolved into a new media with a popularity that is becoming larger and larger among different groups and users of the World Wide Web. Lu and Hsiao (2007) state that millions of people use blogs for various reasons, such as publishing information, transferring knowledge, and building relationships with other bloggers. Another view is that of Chen, Wu, and Yang (2008), who state that weblog is a part of the user-centered with interactive features of web 2.0 technology, which enables people to collaborate and share information in the virtual space.

Although blogs are widely known as a popular web 2.0 technology today, the adoption of these blogs was not popular on higher education levels, such as undergraduate and graduate levels. Nonetheless, blogs were used sparsely for learning activities at overseas colleges or high schools for specific courses; most of its students felt there were some benefits from using a class blog. Chen, Wu, and Yang (2008) state that blog's interactivity, collaborative, user-friendly, and instant archival features made it an effective tool that enhances case based teaching method in an online asynchronous environment.

The use of blogs also enhances students' ability in learning and understanding course materials. Ellison and Wu (2008) assert that blogs are well-suited for the learning environment, especially for the writing skill that is vital in blogging. The format of blog pages can potentially enhance students' analytical and critical thinking. Additionally, researchers have

found that the social interactions among students were improved through the usage of a blog for learning. Wang and Hsu (2008) point out that the reason behind this is that blogs provide a medium to build a sense of community, strengthen communication skills, and write for a real audience.

Despite many benefits provided by the blog for educational and learning purposes, there are some challenges for both lecturers and students who attempt to apply the blogging technology into learning. First of the many important challenges for students as active participants in the learning process is developing a new, more responsible, and more critical attitude towards learning and towards their own learning outcomes (Vlahovic, Pozgaj, and Vuksic, 2011). Tasir, Al-Dheleai, Harun, and Shukor (2011) state that it was important to conduct studies in order to discover students' attitudes towards the current e-learning environment after the emergence of these new tools, as well as to garner their opinions on the adoption of a new e-learning platform. Second, students are unfamiliar with blog technology. Davis (1989) states that information technology offers useful performance advantages and easiness to do our work. However, these advantages were often obstructed by users' unwillingness to use available systems. Chen, Wu, and Yang (2008) argue that if students were to perceive blogs as being user-friendly and were to value its usefulness, then their attitude towards it would grow more positively. Third is the limited control of students' participation in using the blog technology. The voluntary nature of usage is one of the integral factors in the UTAUT framework and acts its primary feature (Venkatesh, Morris, Davis, and Davis, 2003). Wang and Hsu (2008) state that blogs are technological tool with high social interaction, meaning that the participation and motivation of the students contribute to knowledge exchange since the social exchange behavior cannot be completely controlled.

A private university currently has a discussion forum for its students to discuss a specific course but the forum was not fully utilized by students and lecturers to support their learning sessions. The implementation of a class blog for e-business course could offer more assistance to students and lecturers in learning activities, relative to the utilization of a discussion forum or in-person meetings.

Statements of Problems

There were some problems posed as challenges for conducting this research:

- 1. Students' expectation on blog technology usage can help them better facilitate their learning styles.
- 2. Unfamiliarity and resistance from students to adopt blogs as a secondary learning method.
- 3.Limited control over student's participation to use blog for learning in an e-business course.
- 4. Relationship between the intention to adopt blogs and the level of actual usage of blogs as a learning tool.

Purpose and Benefits of Study

The first of the main purposes of this research was to introduce blog technology as new lecturing method in an e-business course to students and lecturers at a private university. Secondly, through the introduction, students and lecturers could then be more familiar and receptive in adopting blog technology for learning sessions. Thirdly, the research also gave an opportunity for the private university to develop its own blog

application suitable for other courses by giving preliminary results on students' acceptance level of the blog technology as a complimentary or substitute tool for discussions.

The benefits from this research were to provide a new learning experience for students and lecturer, along with in-person meetings and after-class sessions. Students can access, review, and discuss earlier materials with colleagues to improve students' critical thinking and writing skills. Blog can also reduce paper usage since no longer have to submit hardcopy assignments. Their assignment results can be posted, shared, and downloaded from the blog by providing links to their assignment files, allowing for a real-time grade announcement.

Hypothesis

The hypotheses in this study were mainly based on blogging acceptance analysis through quantitative and qualitative data within the UTAUT theory model framework. UTAUT theory model consists of performance expectancy, effort expectancy, social influence, behavioral intention, and actual usage. They were:

- H1: Performance expectancy is directly correlated with the level of intention to adopt blogs as a learning tool.
- H2: Effort expectancy is directly correlated with the level of intention to adopt blogs as a learning tool.
- H3: Social influence is directly correlated with the level of intention to adopt blogs as a learning tool.
- H4: Behavioral intention is directly correlated with the level of actual usage of blogs as a learning tool.

Research Scope

The research was conducted on an undergraduate e-business course, which students majored in either Management and Information Systems or Industrial Engineering and Management at a private university. The time frame of this research initiated during the 6th - 7th week of class sessions and ended at the end of the term. Sample size was approximately 50-60 participants from both majors; each major had only one e-business course. This research focuses on the interpretation of findings as well as quantitative data analysis while the content and quality of participants' responses were not the focus of this research. Wordpress, an open source blogging platform, was chosen because of its many features, including a plug-in architecture and a template system.

Significance

This research determined to generalize findings from previous study based on the UTAUT theory framework. This study examined two factors, gender and experience, in order to verify whether or not these factors were significant at a university setting for technology especially for blog technology acceptance. Age was not examined because majority of participants fell within the same age range. The research itself provided new opportunities to implement blog technology in other courses, in addition to the discussion forum. The establishment of an early foundation of blog usage within a course could potentially lead to an internal blog development by the university.

LITERATURE REVIEW

Learning Styles and Learning Preferences

Learning styles provide information about individual differences in learning preferences. This information can serve as the basis on how to best design an instruction method (Akdemir and Koszalka, 2008). More recently, the Felder learning model focuses on the aspects of learning styles that were particularly significant in engineering and IT education (Zywno and Waalen, 2002). Felder (1996) suggests that students learned in a variety of ways. Some tend to focus on facts, data, and algorithms; others feel more comfortable with theories and mathematical models. Some conceive more from visual information like pictures, diagrams and simulations; others get more from spoken and written information. Some prefer interactive learning; others learn better individually (Felder, 1996).

Felder and Soloman (1993) classify learning styles into four learning dimensions: Active – Reflective, Sensing – Intuitive, Visual – Verbal, and Sequential – Global. Each dimension has its own specific characteristics and different approach for learning. The index of learning styles (ILS) questionnaire was developed by Felder and Soloman (1993) to measure the four learning style dimensions. The summary of four learning dimensions is shown in Table 1.

Table 1
Summary of Felder and Soloman's Learning Dimensions

Dimensions	Learning Preferences	Learning Tips
Active	Improve retention and	- Group activities in
Learners	understanding of	which members explain
	information by	topics to each other.
	discussing or explaining	- Finding ways to apply
	it to others.	or use the information.

Reflective	Prefer to think about the	- Periodically reviewing
Learners	material first.	what has been read and
		thinking of possible
		questions and
		applications.
		- Writing a summary of
		readings or class notes.
Sensing	- Prefer learning facts	Connecting information
Learners	and solving problems	to real world
	using well-established	applications.
	method.	
	- Enjoy courses that have	
	connections to the real	
	world.	
Intuitive	- Prefer discovering any	- Finding interpretations
Learners	possibilities and	or theories that link the
	relationships.	facts.
	- Prefer innovation and	- Using care to read the
	abstract information.	entire question before
	- Disfavor courses that	answering and also
	require memorization and	rechecking work to
	routine calculations.	prevent careless mistakes.
Visual	- Remember what they	- Finding or drawing
Learners	see.	diagrams, videos,
	- Prefer pictures, flow	sketches, schematics,
	charts, diagrams,	photographs, CD-ROM
	demonstrations.	study aids, etc., to
		describe course material.
		- Using concept mapping
		to visually arrange key
		points
		Color-coding notes.
Verbal	Get most out of written	- Writing summaries or
Learners	and spoken explanations.	outlines of course
		material.
		- Working in groups to
		hear classmates'
		explanations.

Sequential	Gain understanding in	- Fill in skipped steps by
Learners	linear, logical steps.	either asking the
		instructor or consulting
		references.
		- Outlining course lecture
		material in a logical order
		- Relating new topics to
		things already known to
		strengthen global
		thinking skills.
Global	Learn in large jumps,	- Skimming through the
Learners	randomly absorbing	entire chapter to get an
	material until they	overview before starting
	suddenly "get it".	to study specific
		information.
		- Relating the subject to
		things already known to
		see bigger picture.

Technology used for teaching and learning influences learning styles that are also related with learning preferences. Akkoyunlu and Soylu (2008) emphasize the importance of knowing students' learning styles to design and manage different web-based environments or other learning materials in various subject areas.

Conversational Technologies and Constructivist Learning Tools

The term "conversational technology" was derived from the work of Locke et al. (2000), which describes one key concept: that "markets were conversations" and that knowledge is created and shared through a question-and-answer dialog. Conversational technologies encompass a wide range of systems and software, many of which are commonly used, including e-mail, instant messaging, Web pages, discussion forums, video and audio content/streaming, wikis, and Weblogs. Hsu (2008) focused his

attention on the issues, impacts, and applications relating to IM, blogs, wikis, and podcasts. These are newer technologies with a growing base of users, and more importantly, are starting to become recognized as viable tools for education.

Hsu (2008) states that earlier paradigms of teaching emphasized print-based materials, which included printed textbooks, paper-based instructional materials, and written tutorials; all the paradigms were grounded in the notion that the teacher, lecture, and instructional materials form not only the basis, but also the authority in the educational process. The transmission of material from the teacher (lecture) and/or textbook to the student (called the "print model") is still the central basis of most teaching, even if supplementation with other methods, including discussion and other forms of student interaction/participation, are present (Ferris and Wilder, 2006). Nowadays, the paradigms are gradually shifting into a new concept that learning and teaching should go beyond print materials with a greater emphasis on group work, fostering student communities, and encouraging student participation. The use of conversational technologies can have a positive impact since they attempt to not only improve upon the print approach, but also the usage of secondary-oral techniques (Hsu, 2008). In other words, the introduction of secondary-oral techniques can be used to improve the overall learning experience. Ferris and Wilder (2006) also state that there was an opportunity to collaboratively work, learn, explore, analyze, engage in discussion; in short, learning through new and innovative ways.

The term "constructivist learning tool" had also become associated with this type of discussion, particularly blogs and wikis, in that they have the key characteristic of allowing users to develop and maintain their own contents. Some of the characteristics of constructivist learning include

engagement, active learning, collaboration, real-world tangibility, and the usage of reflection as a part of the learning process (Seitzinger, 2006). It should be noted that these technologies and tools are best suited to course structures in which class collaboration and communication are encouraged, rather than those with an emphasis on lectures and a presentation of factual information. In addition, courses with substantial group work or projects, leading to the production of a collaborative presentation, the use of the blogs would be especially helpful and useful (Hsu, 2008). Both hybrid and full distance learning courses would be situations where the blogs could also be used effectively.

Blogs

History and General Purpose

Hsu (2008) states that initially, blog was started as a means for expressive individuals to post their own personal diaries online. At first, it was in plain text format but later developments completed the picture that made these blogs essentially an individual's online narrative or diary, with events, stories, and opinions. Blogs evolved into a new medium which popularity increased among different groups and users of the World Wide Web. Millions of people used blogs in varying ways, including publishing information, transferring knowledge, and building relationships with other bloggers (Lu and Hsiao, 2007). To a certain extent, blogs were already used in educational institution to propel more efficient learning and to encourage peer-reviewing among students. Chen, Wu, and Yang (2008) state that weblogs, as a part of user-centered and interactive features of web 2.0 technologies, enable people to collaborate and share information in virtual space.

Chan and Cmor (2009) state that blogs are commonly used by academic libraries as alternative means to keep user informed about the library. Nowadays, blogs are used for educational purposes, such as learning, interacting, sharing knowledge, and peer-reviewing a topic. Chan and Cmor (2009) perform a study for library support by creating a blog in a politics course. The research's focus was the students' perception on the user friendliness in learning to use a blog system. They also evaluate the quality of the students' responses; the outcome was that blog is effective in enhancing students' learning in the library (Chan and Cmor, 2009). The personal ability and experience in creating, sharing, and giving feedback about implicit and explicit knowledge are for a successful studying via blog. Lu and Hsiao (2007) point out that the ability of information creation refers to transformation of implicit knowledge into explicit knowledge. People with higher ability to create knowledge may have more confidence in sharing results. The ability to create and the experience to share knowledge are known as knowledge self-efficacy. After the creation and sharing of knowledge, feedbacks are desirable for other users to read as a sign of appreciation on initiating the blog. Lu and Hsiao (2007) state that feedbacks are possible source of verbal persuasion (convincing others to believe that they will accomplish a specific task successfully). Additionally, feedback can be defined as advice, criticism, or information on the quality or usefulness of the work (i.e. the blog entry). As a result, knowledge self-efficacy is an important factor in predicting intentions of users. On the other hand, feedback does have high influence on social persuasion for blog users but low influence on knowledge self-efficacy. Feedback, however, does not affect the intention of continually using a blog in a statistically significant manner (Lu and Hsiao, 2007).

Tang and Chiang (2010) state that perceived usefulness of the blog is described essential in determining the motivation to continue using a blog. This value influences whether users perceive the blog as beneficial or not, resulting on perpetual usage. The result of the study was that perceived usefulness has a significantly high influence on satisfaction of using blog and affects user's intention to continue blog usage (Tang and Chiang, 2010).

Blog As Learning Tool

Blogs have been a widely popular technology but their adoption was not popular among higher education settings, such as in undergraduate and graduate levels. Normally, blogs were used by academic libraries as an alternative way to keep users informed about the library. One slightly different approach has been to create a subject-based blog dedicated to keeping researchers in a particular field informed about library resources relevant to them (Blair and Level, 2008). This narrows the audience and makes it possible to post more specialized content on the blog. Another blog described by Schrecker (2008) further restricts its intended audience, limited to the students enrolled in one particular course.

Deng and Yuen (2009) point out that the unique feature of blogs was that they enable both individual reflection and peer interaction. Blogs also have the potential to be a useful tool for learning and discussing during learning sessions. Chen, Wu, and Yang (2008) state that blogs' interactivity, collaborative, user-friendliness, and instant archival features made them an effective tool that enhance case-based teaching method in the online asynchronous environment. This study adopts the UTAUT theory framework to determine the power of independent variables: performance expectancy, effort expectancy, and social influence for

behavioral intention and actual usage. The result was that all independent variables are significant (Chen, Wu, and Yang, 2008), as shown in Table 2 below.

Table 2 Regression Analysis Result 1

Independent	Standardized	<i>t</i> -value	VIF
Variable(s)	β Coefficients		
Performance	.484	6.977***	1.359
Expectancy			
Effort	.165	2.620**	1.123
Expectancy			
Social	.220	3.289***	1.259
Influence			

 $R^2 = .472$. Adjusted $R^2 = .462$

According to Chen, Wu, and Yang (2008), three proxies of weekly number of posted messages, weekly usage duration of weblogs, and weekly number of response messages are the actual use variable. As shown in Table 3, behavioral intention (act as independent variable) has significant relationships with all three proxies.

Table 3
Regression Analysis Result 2

	Weekly	Weekly	Weekly
	number of	usage	number of
	posted	duration of	feedback
	messages	Weblogs	messages
Behavioral	.239**	.326***	.249**
Intention			
\mathbb{R}^2	.057	.106	.062

^{**}p<0.01 ***p<0.001

^{**}p<0.01 ***p<0.001

Discussions and feedbacks are required to design a successful teaching method. Wang and Hsu (2008) indicate that a blog's distinctive features include: private and public entries setting, cited and linked entries to by the public, archived after use, and categorized entries. These features enable lecturers and students to locate entries through categorical or time stamps.

Blogs are known as one of web 2.0 technologies that have high appeal to lecturers and students due to its social and technological availability. Many researchers struggle to perform empirical assessment of blogs effects, especially within educational settings. Ellison and Wu (2008) assert that blogs are well-suited for the learning environment, primarily because the critical skill of writing is central to blogging. The format of blog pages can potentially enhance students' analytical and critical thinking. Their research results are that most of students enjoy certain aspects of blogging and are very enthusiastic about blog implementation in their class. Similarly, Hsu and Hwang (2008) point out that the use of blogs enhances social interactions, providing a channel to build a sense of community, to strengthen communication skills, and to write for a real audience. This provide strong reasons to use blog as a tool for delivering lecture materials and conducting discussions among students while peer-reviewing one another's work. Their study shows that while the differences between control group and treatment group were statistically similar post blog usage, the treatment group has a stronger confidence in using computer for written communication (Hsu and Hwang, 2008). In addition, blogs have a higher chance of supporting both social and individual learning (Lin et al., 2006).

Blog Technology and User Acceptance

Blogs are web pages created dynamically from a database, and can be customized on the users' end. The flexibility in user autonomy exponentially increases the potential to share ideas in a virtually cost-free environment (Lu and Hsiao, 2007). In early blogging days, during the late 1990s, bloggers had to manually code their blogs (Du and Wagner, 2006). However, current blog technology supports users to easily publish contents with various blogging tools that render writing HTML code obsolete and optional for amateur bloggers (Herring, Scheidt, Wright, and Bonus, 2005).

In previous studies, richly-featured free blogging platforms, such as Blogger, Wordpress, Lifetype, Xanga, MoveableType, Blurty, Typepad, Vox, and LiveJournal, are used for e-learning and as a classroom tool (Chan and Cmor, 2009; Chen, Wu, and Yang, 2008; Coulter and Draper, 2006; Lin et al., 2006; Nardi, Schiano, Gumbrecht, and Swartz, 2004; Stiler and Philleo, 2003). These blogging platforms have all the necessary blog features and provide statistics reports. Kim (2008) elaborates on how blogs can overcome Computer-Mediated Communication (CMC) limitations through supported RSS delivery, personal blog, decentralized system, and archives. Furthermore, the intention is to make posting comments to the blog as easy as possible. Thus, no restrictions are placed on comments, and no moderation was required before publishing the comments on the blog. Bobish (2007) points out that the students can be trusted in not posting anything inappropriate.

The reason that blog is chosen as a learning technology is because of its key features: interactivity, collaborative, user-friendliness, and instant archival features for posts and comments. The goal is to have the course blog eventually become a user-created reference and instructional tool,

which students could revisit in order to learn and discuss e-business topics for their papers or exams preparation. A well-run blog can become a history of accomplishments (Blair and Cranston, 2006). Hsu (2008) summarizes weblogs and other technologies comparison for e-learning, as listed in Table 4 below:

Table 4
Blog and Other Technologies Comparison

	Instant Messaging (IM)	Weblogs (Blogs)	Wiki	Podcasts
Description	Real-time	A technology that	A technology that	The ability to create
	communications that	allows a sequence of	allows for material to	audio (and other
	allow for informal	entries (online diary,	be easily published	media) based files to
	communications to be	journal) to be posted	online, and also allows	be distributed on a
	conducted easily and	and published online	open editing and inputs	regular/subscription
	quickly		by a group	basis to user; these
				can be easily
				retrieved and played
				back on handheld
				devices, computers,
				and through other
				means
Advantages	Availability and	Self reflection and	Contributions and	Allows for
	acceptance by students	critical thinking are	editing by a group	information to be
		encouraged		retrieved and played
				back on widely
				available, ubiquitous
				devices
	Social presence (know	Students authenticity	Open access to all	More suitable to
	the status of other users	through publication	users	auditory and visual
	online)			learners
	Real-time	Social presence	Collaborative	

	(synchronous) communications			
	Encourages	Development of a		
	collaboration	learning community		
	Reduces any formality	Active learning		
	in communications	encouraged		
		Ability to receive and		
		respond to feedback		
Disadvantages	Distracted student	Controlled primarily by	Lack of organization	In consumption
	attention, especially in	blog author	and structure may	(playback) mode,
	a classroom setting		result in an	does not directly
			unmanageable wiki	support collaboration
	"Time waster" that is	Editing/modifications is	Tracking of	Is not inherently
	not directed toward	not open as in a wiki	contributions and	interactive in nature
	course content, but on		modifications can be	
	personal discussions		difficult	
	Expectation of 24-7		Quality control	
	instructor access			
	Can be time consuming			
	for instructors			
	Benefits are uncertain			
	in classrooms settings			
Educational	Virtual office hours	Online learning journal	Collaborative writing/	Recorded class
Applications	(instructor-student)		authoring	lectures
	Collaboration on group	Problem solving,	Group project	Case-based

	projects	discussion,	management	instruction
		manipulation space		
	Real-time class	Online gallery space	Brainstorming	Guest lectures in the
	discussions	(writings, portfolio,	activities	form of podcasts
		other work)		
	Mentoring	Peer review exercises	Knowledge base	Supplemental course
			creation (knowledge	materials
			management)	Support for distant
				learning courses
Course/Subject	Courses with group	Writing courses	Knowledge	Subject matter lends
Suitability	projects and		management	itself to auditory
	assignments			format
	Distance learning	Foreign language	Writing	
	support	courses		
		Research seminars	Group work in courses	

The acceptance of blogs for educational purposes gained the interest of the University of Maryland, who attempted to implement campus-wide blogging software (Higgins, Reeves, and Byrd, 2004). Ducate and Lomicka (2005) discuss their experiences in using Weblogs to support foreign language classes. Weblogs aid the foreign language students to learn during the process of reading by creating blog entries. Students can learn by reading blogs that are written in the language of interest, including learning new vocabulary, checking out links and further information on words, and learning associated cultural information. Martindale and Wiley (2005) also utilize blogs in their courses and observe two cases on the impact of this technology on teaching and learning. Blogs are used to post ideas and abstracts of student projects, and also to place links for relevant research papers and Web-based resources. The end result was a "knowledge based" course that represented the cumulative output of the students in the course. Lin et al. (2006) have revealed that blogs successfully contributed to the students' online engagement and interactivity.

Despite successful blog acceptance, some researches conclude with failure or rejection of the blog technology. Coulter and Draper (2006) set up ten separate blogs for each of the ten courses in which face-to-face information literacy instruction is provided. However, the survey conducted at the end of semester indicated that 73 percent of respondents had never checked the blog set up for their course. Also, across the ten blogs, not a single student posted a comment. In this case, one of the oft-cited advantages of blogs, the ability of readers to provide feedback and initiate discussion, was not utilized at all. This phenomenon of student reluctance on posting comments to educational blogs has been noted by others. Nardi, Schiano, Gumbrecht, and Swartz (2004) describe a blog set

up for an undergraduate archaeology course. All posts and comments were made by the professor and the teaching assistants, with students making none. The blog failed in generating a sense of community, although it did succeed as a web site. Divitini, Haugalokken, and Morken (2005) have claimed that blog technology has failed to motivate students to become involved in the online activity. Coulter and Draper (2006) believe that the answer to this was to cooperate with faculty in creating incentives for students to participate in discussions on the blog.

Unified Theory of Acceptance and Use of Technology (UTAUT)

The theory was formulated by Venkatesh, Morris, Davis, and Davis (2003) by combining models and theories of acceptance models: *Theory of Reasonable Action* (TRA), *Technology Acceptance Model* (TAM), *Motivational Model* (MM), *Theory of Planned Behavior* (TPB), *Combined TAM and TPB* (C-TAM-TPB), *Model of PC Utilization* (MPCU), *Innovation Diffusion Theory* (IDT), and *Social Cognitive Theory* (SCT). Venkatesh, Morris, Davis, and Davis (2003) state that the formulation concept of four constructs play an important role as direct determinants of user acceptance and use behavior: *performance expectancy, effort expectancy, social influences*, and *facilitation conditions*. These constructs are moderated by key factors (gender, age, voluntariness, and experience) that affect the relationship between these constructs with use behavior.

UTAUT2 was introduced by Venkatesh, Thong, and Xu (2012), which expands UTAUT to study acceptance and use of technology in a consumer context. UTAUT2 adds three new constructs: *Hedonic Motivation*, *Price Value*, and *Experience and Habit*. Brown and Venkatesh (2005) define Hedonic Motivation as the fun or pleasure derived from using a technology, which has been shown to play an important role in

determining technology acceptance and use. Dodds, Monroe, and Grewal (1991) state that Price Value is the consumer's cognition on the perceived benefits of the applications and the monetary cost for using them. Experience reflected as an opportunity to use a target technology and was typically functioned as the passage of time from the initial use of technology by an individual (Kim and Malhotra, 2005; Venkatesh, Morris, Davis, and Davis, 2003). Habit has been defined as the extent to which people tend to perform behaviors automatically because of learning (Limayem, Hirt, and Cheung, 2007), while Kim, Malhotra, and Narasimhan (2005) equate habit with automaticity. This 2011 study utilizes four constructs of UTAUT that are described next.

Performance Expectancy

Venkatesh, Morris, Davis, and Davis (2003) point out that performance expectancy is the degree to which an individual believes that using the system helps in improving job performance. In the context of blog technology acceptance in learning e-business, performance expectancy can be defined as students' expectation that using blog for learning e-business will help them better understand the subject matter and improve performance in the course. Performance expectancy is a multi-dimensional construct with five components: perceived usefulness, extrinsic motivation (Davis, 1989), job fit (Thompson, Higgins, and Howell, 1991), relative advantage (Moore and Benbasat, 1991), and outcome expectations (Compeau and Higgins, 1995b).

Effort Expectancy

Venkatesh, Morris, Davis, and Davis (2003) describe effort expectancy as the degree of ease associated with the use of system. In

general term, it defines how easy it is for a new user to learn the system. A user-friendly interface is an important contribution to the popularization of blogs on the web (Chen, Wu, and Yang, 2008). The construct has three components: perceived ease of use (Davis, 1989), complexity (Thompson, Higgins, and Howell, 1991), and ease of use (Moore and Benbasat, 1991).

Venkatesh and Morris (2000), drawing upon other research (Bem and Allen 1974; Bozionelos 1996), suggest that effort expectancy is more salient for women than for men. Prior research supports the notion that constructs related to effort expectancy is a stronger determinants of individuals' intention for women (Venkatesh and Morris, 2000; Venkatesh, Morris, and Ackerman, 2000) and for older workers (Morris and Venkatesh, 2000). Effort expectancy is also significant for behavioral intention when a system is in mandatory phase and gradually decreases after some period of continuous usage (Venkatesh, Morris, Davis, and Davis, 2003). Lowering the effort required to use blogs also contributes to the intention of using blogs (Chen, Wu, and Yang, 2008).

Social Influences

Through social cognitive theory, user intentions to share information and knowledge can be determined by several factors, such as user expectations, social factors (subjective norms), and belief (Bandura, 1977). Social cognitive theory (SCT) (Bandura, 1977) is a widely accepted and empirically validated model of individual behavior, and has been used as the basis of many different types of research models (Compeau and Higgins, 1995b, 1999; Shih; 2006).

Some theories suggest that social influence is crucial in shaping user behavior. For instance, according to Theory of Reasoned Action (TRA) (Fishbein, 1975) and the Theory of Planned Behavior (TPB) (Ajzen, 1985), both salient beliefs and normative beliefs are important predictors of intent. Furthermore, numerous empirical studies have found that social factors positively impact an individuals' IT usage (Lucas and Spitler, 2000; Taylor and Todd, 1995; Venkatesh and Morris, 2000). Additionally, empirical studies based on TRA have found that social influences positively affected an individuals' behavior (Cheung, Chang, and Lai, 2000; Karahanna and Straub, 1999; Liao, Shao, Wang, and Chen, 1999; Liker and Sindi, 1997).

Venkatesh, Morris, Davis, and Davis, (2003) define social influences as the degree to which an individual perceives the importance that other people place on using the new system. This construct consists of subjective norm, social factors (Thompson, Higgins, and Howell, 1991), and image (Moore and Benbasat, 1991). As defined by Fishbein and Ajzen (1975), subjective norm describes "the degree to which an individual believes the people who are important to him/her expect him/her to perform the behavior in question". Compeau and Higgins (1995b) also argue that the encouragement, which is one source of subjective norms, of others who are important to people can influence outcome expectations. In the class blog usage, lecturers can encourage his or her students to use the blog for discussion and submission of assignments for the course. Faculty also can give more support to the students for using the blog and allow them to use it as a tool for enhancing their study needs (Chen, Wu, and Yang, 2008).

Behavioral Intention and Actual Use

Behavioral Intention is determined by four construct as mentioned in UTAUT formulation, but for this research only three of them are used. A positive Behavioral Intention is essential in the actual usage of technology

(Chen, Wu, and Yang, 2008). This is consistent with literature and previous research that behavioral intention should have a significant positive influence on technology usage (Venkatesh, Morris, Davis, and Davis, 2003).

Validity and Reliability

The instrument was designed through the theoretical framework, *Technology Acceptance Model* (Davis, 1989) and combined by Venkatesh, Morris, Davis, and Davis (2003) into the *Unified Theory of Acceptance and Use of Technology* (UTAUT). The validity is presented by Venkatesh, Morris, Davis, and Davis (2003) in acceptable convergent and validity test result. UTAUT constructs have also been defined by Davis (1989) and are continuously developed by other researchers in other theories before all are combined into UTAUT by Venkatesh, Morris, Davis, and Davis (2003) and have high reliability value from most of previous studies (Chen, Wu, Yang, 2008; Wang and Yang, 2005).

Cronbach's α value for the instrument was obtained from previous research by Chen, Wu, and Yang (2008) entitled "Accelerating the Use of Weblogs as an Alternative Method to Deliver Case-Based Learning". Cronbach's α test was used to assess the internal consistency or stability of the model used to measure the constructs of proposed framework. All Cronbach's α values had to exceed the threshold value of 0.7 (DeVellis, 1991) to indicate that adopted instrument had a high internal reliability. Cronbach's α value are shown in Table 5 below:

Table 5 Cronbach's α Values of Instrument's Constructs

Constructs	Cronbach's α
Performance Expectancy	0.88
Effort Expectancy	0.88
Social Influence	0.78
Behavioral Intention	0.91

Regression

Regression Analysis

In statistics, regression analysis includes any techniques for modeling and analyzing several variables, with the focus on the relationship between a dependent variable and one or more independent variables. Most commonly, regression analysis estimates the conditional expectation of the dependent variable given the independent variables — that is, the average value of the dependent variable when the independent variables are held fixed.

Regression analysis is widely used for prediction and forecasting, in which its use has substantial overlap with the field of machine learning. Regression analysis is also used to understand which among the independent variables are related to the dependent variable, and to explore the forms of these relationships. In restricted circumstances, regression analysis can be used to infer causal relationships between the independent and dependent variables.

A large body of techniques for carrying out regression analysis has been developed. Familiar methods, such as linear regression and ordinary least squares regression, are parametric in that the regression function is defined in terms of a finite number of unknown parameters that are estimated from the data. Nonparametric regression refers to techniques that allow the regression function to lie in a specified set of functions, which may be infinite-dimensional.

The performance of regression analysis methods in practice depends on the form of the data generating process, and how it relates to the regression approach being used. Since the true form of the data-generating process was generally unknown, regression analysis often depends to some extent on making assumptions about this process. These assumptions are sometimes (but not always) testable if a large amount of data were available. Regression models for prediction are often useful even when the assumptions are moderately violated, although they may not perform optimally. However, in many applications, especially with small effects or questions of causality based on observational data, regression methods could give misleading results (Freeman, 2005).

Linear Regression

In statistics, linear regression is an approach to modeling the relationship between a scalar variable y and one or more variables, denoted as X. In linear regression, data are modeled using linear functions, and unknown model parameters, ε , are estimated from the data.

Linear regression is the first type of regression analysis to be studied rigorously and used extensively in practical applications. This is because models that depend linearly on their unknown parameters are easier to fit compared to models that are non-linearly related to their parameters. The statistical properties of the resulting estimators are also easier to determine.

Linear regression models are often fitted using the least squares approach but they may also be fitted in other ways, such as by minimizing the "lack of fit" in some other norm (as with least absolute deviations regression), or by minimizing a penalized version of the least squares loss function as in ridge regression (Freeman, 2005).

General formula for Linear Regression is:

$$y = \beta_{X1} + ... + \beta_{Xi} + \varepsilon_i, \quad i = 1, ..., n$$

Likert Scale

One of the most common scaled-response format questions in survey design today is the Likert scale. It was developed by American educator and organizational psychologist Rensis Likert in 1932 as an attempt to improve the levels of measurement in social research through the use of standardized response categories in survey questionnaires. Over the years, Likert's original 5-point scale has taken on many new forms in many research publications. A commonly used 5-point Likert scale format to measure satisfaction comprises of:

- 1. Very satisfied
- 2. Satisfied
- 3. Neither satisfied nor dissatisfied
- 4. Dissatisfied
- 5. Very dissatisfied

Another version of the scale that can be found in some research papers and surveys is the 6-point Likert scale, which reads:

- 1. Extremely satisfied
- 2. Very satisfied
- 3. Somewhat satisfied
- 4. Somewhat dissatisfied
- 5. Very dissatisfied
- 6. Extremely dissatisfied

Chris Gwinner of *Infosurv* conducted a forum of market researchers to understand their preference between 5-point and 6-point Likert scales. The conclusion is that most modern researchers agree that the neutral rating in a 5-point scale is more suitable needed for conducting survey research.

Of the researchers who participated in this discussion, 71% express a preference for 5-point Likert scales, 12% prefer the 6-point scale, and 17% are neutral on the matter. Researchers who prefer the 5-point scale cite the following reasons:

- 1. Survey respondents might truly feel neutral about a given topic, and presenting to these respondents a scale without a neutral midpoint can introduce bias to the respondent since they are forced to choose a more positive or negative response. Some researchers point out that in many cases respondents lean towards a negative bias.
- 2. Neutral is a legitimate opinion that exists among respondents. Generally speaking, if every opinion of the people were solicited in the surveyed, the neutral rating needs to be included in the scale. If the neutral opinion is not of interest, it need not be included in the scale.
- 3. The 5-point scale offers a convenient midpoint. The number 3 rating is right in the middle and indicates neutrality or mixed satisfaction. When calculating the mean weighted average, there is a standard point of comparison, leading to the revelation that an average rating of 3.4 is above neutral and a 2.8 was below.

Researchers who prefer the 6-point scale cite the following reasons:

1. They prefer to have an even number of ratings in the scale to have respondents commit to either the positive or negative end of the

- scale. These researchers disagree with giving the respondent a neutral or ambivalent answer choice.
- 2. They also argue that neutral answers are rare because in the majority of cases, only those with a positive or negative experience/opinion would voluntarily participate in a research study.

Some researchers involved in this discussion point out that in the questionnaire design process, researchers must factor in respondents' knowledge of the topic at hand. A lack of respondent knowledge may lead to an abuse of the endpoints of longer scales resulting in lower reliability compared to if the shorter scales are utilized. If a respondent were very familiar with the subject, such as a student rating a professor's performance, a neutral rating may not be as necessary compared to a situation in which the query is on the school's financial aid policies. It could be argued that in the latter case the respondent could truly have a neutral attitude towards the subject at hand.

The conclusion from this debate is that there are arguments for and against the various forms of the Likert scale. Though the majority of modern market researchers prefer a 5-point scale, it is ultimately the responsibility of the survey questionnaire designer experts to decide upon the scale that best fits their own specific needs.

METHODOLOGY

This chapter aimed to describe the research design model from the selected variables to answer the four hypotheses mentioned earlier, i.e. the selection of the population and sample for this research, the instrumentation, and the data collection method. The validity and reliability of the instrument were described along with the data analysis method. This chapter ended with research limitations of the study's scope.

Research Framework

The research framework flow is illustrated in Figure 1 below.

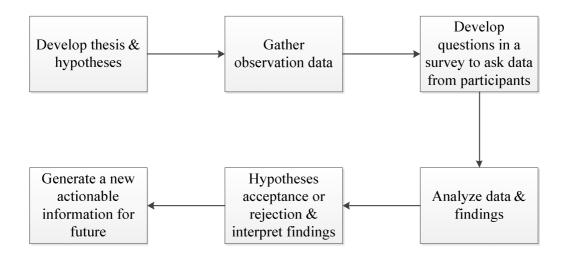


Figure 1. Research Framework

This research started by the formulation of a thesis topic followed by the hypotheses as described in Figure 1. Data observations were done by developing a blog for e-business class course that was approved by the lecturer for student use. The blog was presented to the students, i.e. how to use the blog and to participate in this research. While gathering data, hypotheses were developed into a survey so the data from participants after usage of the blog could be collected for analytical purposes. The survey (Appendix A) was based on the *Unified Theory of Acceptance and Use of Technology* (UTAUT). Data were analyzed both qualitatively and quantitatively in order to determine acceptances and rejections for each hypothesis. IBM SPSS Statistics 19 and IBM SPSS AMOS 20 software were used to analyze qualitative and quantitative data. Data interpretation and analysis could then play a major role in creating new practical information for future research and development.

Research Model

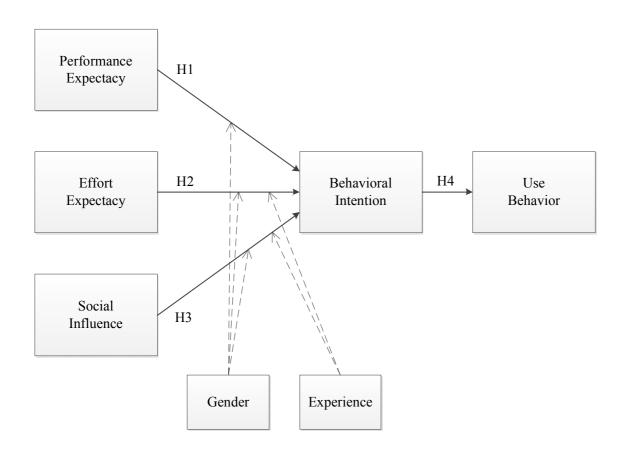


Figure 2. Research Model

The research used the *Unified Theory of Acceptance and Use of Technology* (UTAUT) framework (Venkatesh, Morris, Davis, and Davis, 2003) with three variables to determine behavioral intention and to define the relationship with actual use, as shown in Figure 2. Demographic questions, such as gender, had been the factor for performance expectancy, effort expectancy, and social influence results. Experience also had been a factor but only for effort expectancy and social influence results. These demographic questions were included in the survey instrument at Appendix A. This study took approximately 6-7 weeks, from the implementation of the blog through the end of learning sessions for each class.

Introduction to the blog began in-class to provide training for students and lecturer on how to use the blog for learning sessions, such as discussions and assignments. Numerous open-source blog software were available but Wordpress was selected. It was a publishing platform powered by PHP and MySQL hosted on WordPress.com. There were several reasons for the selection of Wordpress. Firstly, users could rearrange widgets without editing PHP or HTML code as well as installing and switching between themes. The PHP and HTML codes in themes could also be edited for more advanced customizations. Secondly, WordPress featured an integrated link management, a search enginefriendly, clean permalink structure, and the ability to assign nested multiple categories for articles. Thirdly, automatic filters were also included, providing standardized formatting and styling of text in articles. Fourthly, WordPress also supported the tagging of posts and articles. Trackback and Pingback standards enabled the displaying of links to other sites that had themselves been linked to a post or an article. Fifthly, the groundbreaking and very popular feature of WordPress was its rich plug-in architecture that allowed for users and developers to extend its functionality beyond the features that was a part of the basic install. This architecture was supported by a database of thousands of plug-ins with purposes ranging from SEO to widgets addition. As the result, WordPress was chosen as the blogging platform for this study.

Sample and Population

Population

The population for this research was from a segment of a private university's undergraduate population that double-majored in Management and Information Systems as well as Industrial Engineering and Management. Undergraduate students from both majors were defined as population for this research. For sampling purposes, the population had been focused onto undergraduate students from both majors who took the e-business course in their active academic year. Sample size comprised of all students who took the e-business course from both majors and were chosen by Judgment Sampling technique.

Sampling Technique

The sampling method used in determining samples was Judgment Sampling, a non-probability sampling method used to select the sample based on judgment. The Judgment criteria were:

- 1. Undergraduate students who took the e-business course during the academic year of 2010/2011 at the private university.
- 2. Undergraduates majoring in Management and Information Systems as well as Industrial Engineering and Management.
- 3. Undergraduates who never or had had little experience in using blogs for education and learning.

4. Undergraduates who had the lecturer's approval and willingness to use the blog system for the e-business course.

Sampling Size

This study had sixty one participants from the students who took the e-business course. They came from two different majors (approximately about 25% from total students in six classes who took the e-business course). 45 students were from Management and Information Systems major and 16 students were from Industrial Engineering and Management major. Most of them never had any blogging experience but had used other technology, such as a discussion board. Time frame for this research started from 6th - 7th week class sessions and terminated at the end of term.

Instrumentation and Data Collection Method

The instrument used to measure variables was a survey based on the Venkatesh, Morris, Davis, and Davis (2003) and Chen, Wu, and Yang (2008) research. Performance Expectancy was a multi-dimensional construct that consisted of perceived usefulness, relative advantage, job-fit, and outcome expectations. Effort Expectancy consisted of perceived ease of use, complexity, and ease of use. Social Influence consisted of three dimensions: subjective norms, social factors, and image. Lastly, Behavioral Intention was one-dimensional construct. The survey, attached in Appendix A, had a six-point scale ranging from "Extremely Unlikely" to "Extremely Likely."

Demographic question items were also included in the instrument based on the UTAUT theory model. Participants' age, gender, blogging experience, weekly usage duration of blogs, weekly numbers of posted message, and weekly number of feedback numbers were the items for participants' demographic data.

Data were collected from blog system to observe the students' activity over research period (6-7 weeks). The survey was distributed on the last session of each class to gather data on students' experience while using the blog system in their learning and on their views about using the blog system in the future or for another course.

Data Analysis Method

Qualitative Data

Data obtained from observation and survey were analyzed using IBM SPSS Statistics 19 and IBM SPSS AMOS 20 for descriptive qualitative data output and quantitative statistical data Demographic items were analyzed by descriptive analysis method to stratify demographic data in categorical orders. T-test analysis method was also used to determine mean numbers of survey scores between gender (male and female) and experience (inexperience and experienced) to decide whether or not they had significant influences on the proposed framework. Qualitative data are presented in tables and percentages for reporting. Weekly duration, weekly number of posted messages, and weekly number of feedback messages had five-point scales ranging from 1 (less duration, less numbers of messages, and less numbers of feedback messages) to 5 (more duration, more numbers of messages, and more numbers of feedback messages) for data analysis.

Quantitative Data

Quantitative data were analyzed with Linear Regression method to determine the predictive power of independent variables for Behavioral Intention and path analysis to determine whether Behavioral Intention as an independent variable had significant influences on Use Behavior.

Questions from the survey instrument consisted of the items shown in Appendix A. Six-point scales were used for all items, ranging from 1 ("Extremely Unlikely) to 6 ("Extremely Likely"). These scales were used for scoring participant answers on all of the items and used for quantitative data method analysis.

Independent variables for this research were Performance Expectancy (X_1) , Effort Expectancy (X_2) , and Social Influence (X_3) . Dependent variables were Behavioral Intention (Y_1) and Use Behavior/Actual Use. The linear regression model was applied to validate that H_1 , H_2 , and H_3 had significant influence on Behavioral Intention (Y_1) . The path analysis was conducted to validate that Behavioral Intention had a significant influence on Use Behavior/Actual Use, which then led to the validating of H_4 . The model was shown below:

$$Y_1 = \text{Constant} + \beta X_1 + \beta X_2 + \beta X_3$$

Research Limitations

There were some limitations that this study encountered. First was the small sample size of merely 61 participants. Second was the limited control over students' participation. Third was the fact that this research focused on interpreting findings and discussing the quantitative analysis from obtained data. The content and the quality of participants' responses were not considered for this study. Fourth limitation came from the factor of age that was not assessed due to the uniform age range (19-21 years).

RESULTS

This chapter described the blog software used in this study, the manner in which the blog was set up, and the settings for data collection. Data were also collected from the survey instrument that students completed at the end of the research period. The results of qualitative and quantitative data analysis were also presented in this chapter in the forms of tables, percentages, and statistical results based on data analysis methods described in the methodology.

The Blog

Blogging Software

The researcher decided to use WordPress for this study because it was an open source blogging tool and publishing platform powered by PHP and MySQL hosted on WordPress.com. WordPress had many features, including a plug-in architecture and a template system. Users could rearrange widgets without editing PHP or HTML code and could also install and switch between themes. The PHP and HTML codes in themes could also be edited for more advanced customizations. WordPress also featured an integrated link management; a search engine-friendly, clean permalink structure, the ability to assign nested, multiple categories for articles. Third, automatic filters were also included, providing standardized formatting and styling of text in articles. Fourth, WordPress also supports for tagging of posts and articles, the Trackback and Pingback standards for displaying links to other sites that have themselves linked to a post or article. Fifth, the groundbreaking and very popular feature of WordPress was its rich plug-in architecture which allows users and developers to extend its functionality beyond the features that come part of the base install. This architecture was supported by a database of thousands of plug-ins with purposes ranging from SEO to adding widgets. As the result, WordPress was chosen as the blogging platform for this study.

Setup and Setting

The blog was created on April 2011 through the registration of an email and user ID for blog ownership (administrator) on WordPress. It was hosted on the WordPress.com domain (http://ebusinesscourse.wordpress.com/). Students were introduced to the course supported blog in their midterm lecture of the course. The researcher was given ten to fifteen minutes at the end of this lecture to briefly introduce the blog and outline how it would be integrated into the course. Also, a fifteen-minute section of the tutorial was dedicated to thoroughly describe the blog and its features. Students were given the URL of the blog and were shown how to access and comment on posts.

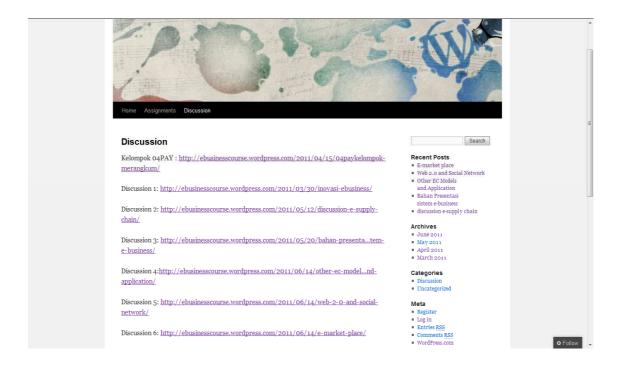


Figure 3. Discussion Main Page

The blog main page was created through a static page for introduction and had two categories for e-business courses: Assignments and Discussions.

These categories contained post links with appropriate tags (Assignment or Discussion) to allow for ease of access for both students and lecturers, as shown in Figure 3, which is the Discussion category example.

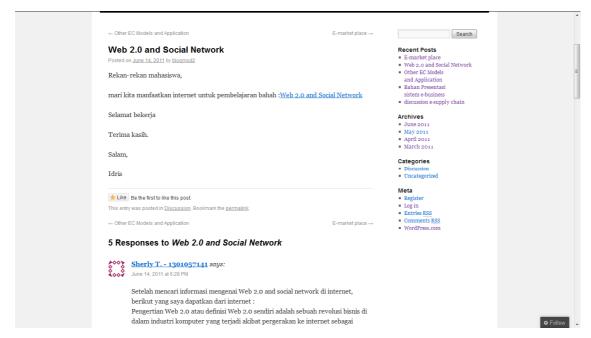


Figure 4. Blog Posting Example

Figure 4 showed that every blog post had its own page for viewing and commenting. Students and class representative needed to input their name, student ID, and email in order to post or reply comment on a specific blog post. All of the posts and comments were automatically archived by WordPress.

Three user IDs were created to maintain and moderate this blog. One of them was a lecturer's ID that administrated the blog and the other two

were class representative IDs selected by the lecturer to assist in posting discussion materials on e-business topics.

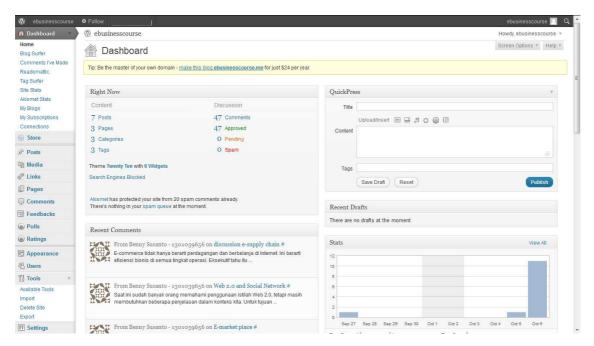


Figure 5. Administrator Dashboard

The researcher adjusted the blog settings to prevent interruption from students or other internet users by using the Administrator Dashboard as shown in Figure 5. The dashboard provided basic and advanced settings for the blog's contents, template, blog users, appearance, and tools for blogging. Settings for the blog in this study were accessed from this dashboard and adjusted as follows:

- 1. Blog was installed on basic installation of WordPress and customized.
- 2. Only the lecturer and the two class representatives can post assignment or discussion materials on the blog.
- 3. Name, Student ID, and Email were required in order for the students to comment or reply on assignments or discussion

- materials on the blog. This was intended for prevention of anonymous user and reduction of spam comments.
- 4. The blog home and main pages for Discussions and Assignments were designed in static page forms for the convenience of the lecturer and students in searching for hyperlinks of previous postings. This was intended for the optimization of WordPress's automatic archival feature.
- 5. Sharing option for social networks was disabled. Students could post hyperlinks on their comments or replies.
- 6. Ratings option was disabled to prevent inappropriate or abusive use of ratings.
- 7. RSS feeds and Anti spam were activated to reduce spam comments on blog and automatic notifications for new posts.

Statistics and Report

WordPress compiled an overall total views of e-business blog per day, week, and monthly as well as the total comments per student's name, as a part of the basic installation, as shown in Figure 6.

Figure 6 shows an example of the blog's statistic page from October 6, 2011. Furthermore, it could be breakdown into views per blog post with same time range as overall total views.

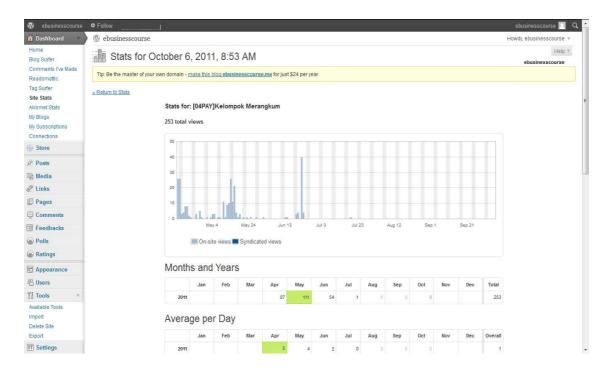


Figure 6. Blog Statistic Page

Figure 7 shows blog post dashboard with the option to view individual post statistics. Comments could also be viewed and counted per blog post. WordPress did not provided students' log time or views per

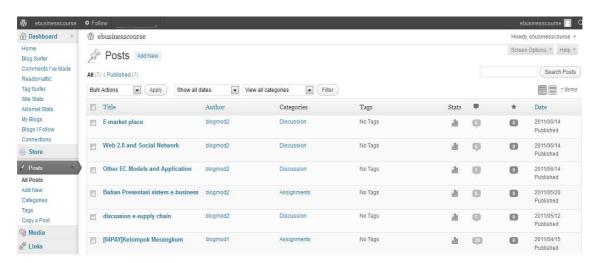


Figure 7. Blog Post Dashboard

student so the researcher had to rely on the demographics questionnaire for each student's weekly duration of blog usage. These statistics and report can be viewed on the blog dashboard by accessing it with the lecturer's user ID.

WordPress Template Hierarchy

Since the introduction of Themes in WordPress 1.5, Templates had become more and more configurable. In order to develop WordPress themes, a proper understanding of the way WordPress selected template files to display the various pages on the blog was essential. WordPress Templates fit together like the pieces of a puzzle to generate the web pages on the WordPress site. Some templates, the header and footer template files, for example, were used on all the web pages, while others were used only under specific conditions.

WordPress used the Query String — information contained within each link on the web site — to decide which template or set of templates would be used to display the page. First, WordPress matched every Query String to query types — i.e. it decides what type of page (a search page, a category page, the home page etc.) was requested. Templates were then chosen — and web page content was generated — in the order suggested by the WordPress Template hierarchy, depending upon what templates were available in a particular WordPress Theme. WordPress searched for template files with specific names in the current Theme's directory and used the *first matching* template file listed under the appropriate query section below. With the exception of the basic *index.php* template file, theme developers could choose whether to implement a particular template file or not. If WordPress could not find a template file with a matching name, it would skip to the next file name in the hierarchy. If WordPress

could not find any matching template file, *index.php* (the theme's home page template file) would be used.

For example, if a student accessed the e-business blog home page at http://ebusinesscourse.wordpress.com/, WordPress first determined whether it had a static front page. If a static front page had been set, then WordPress would load that page according to the page template hierarchy. If a static front page had not been set, then WordPress would search for a template file called home.php and used it to generate the requested page. If home.php were missing, WordPress would search for a file called home.php were missing, WordPress would search for a file called home.php in the active theme's directory, and used that template to generate the page.

Another example, if a student were to click on a link to a category page like http://ebusinesscourse.wordpress.com/wp/category/Discussions, Word Press would search for a template file in the current Theme's directory that would match the category's ID. Furthermore, Figure 8 shows the WordPress Template hierarchy.

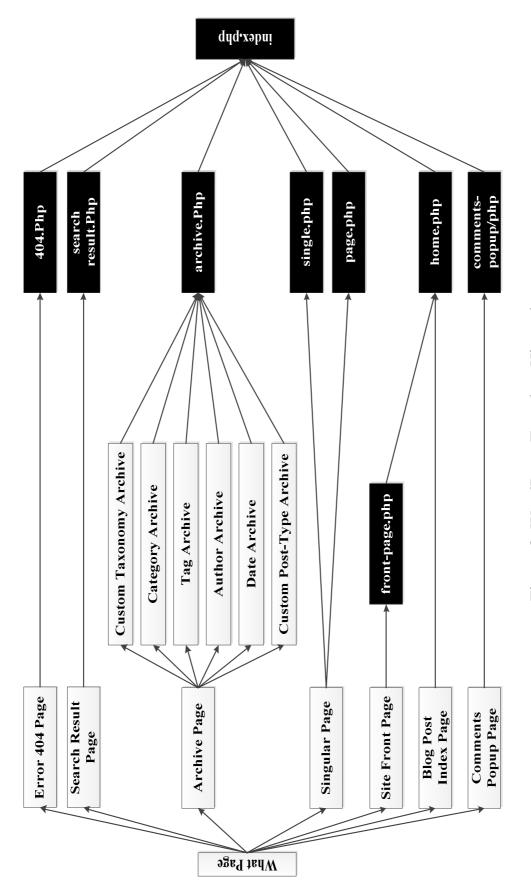


Figure 8. WordPress Template Hierarchy

The following texts described the order in which template files were being called by WordPress for each query type, as shown in Figure 8. The order was started by matching a specific query string to query pages and if it were missing, WordPress would skip to the next file name in the hierarchy. If WordPress could find anything any matching template file in the end, index.php was used. The WordPress template hierarchy is described in detail as follows:

- Home Page display
 - 1. home.php
 - 2. *index.php*

- Front Page display

- 1. front-page.php Used for both Your latest posts or A static page as set in the Front page displays section of Settings → Reading.
- 2. Page display rules When *Front page* is set in the *Front page* displays section of Settings → Reading.
- 3. Home Page display rules When *Posts page* is set in the *Front page displays* section of Settings → Reading.

- Single Post display

- 1. *single-{post_type}.php* If the *post type* was introduction, WordPress would look for *single-introduction.php*.
- 2. single.php
- 3. *index.php*

- Page display

1. custom template file - The Page Template assigned to the Page with get_page_templates() function. This function returns the

- available page templates in the currently active theme. It searches all the current theme's template files for the commented Template Name: name of template.
- 2. *page-{slug}.php* If the page slug was assignments, WordPress will look to use *page-assignments.php*. A slug is a few words that describe a post or a page. Slugs are usually a URL friendly version of the post title (which has been automatically generated by WordPress), but a slug can be anything you like. Slugs are meant to be used with *permalinks* as they help describe what the content at the URL is.
- 3. *page-{id}.php* If the page ID was **6**, WordPress was looked to use *page-6.php*.
- 4. page.php
- 5. *index.php*
- Category display
- 1. category-{slug}.php If the category's slug were news, WordPress would look for category-news.php.
- 2. *category-{id}.php* If the category's ID were 3, WordPress would look for *category-3.php*.
- 3. category.php
- 4. *archive.php*
- 5. *index.php*
- Tag display
- 1. tag-{slug}.php If the tag's slug were ebusiness, WordPress would look for tag-ebusiness.php.

- 2. $tag-\{id\}.php$ If the tag's ID were 2, WordPress would look for tag-2.php.
- 3. *tag.php*
- 4. archive.php
- 5. *index.php*

- Custom Taxonomies display

- 1. taxonomy-{taxonomy}-{slug}.php If the taxonomy was management, and taxonomy's slug were ebusiness, WordPress would look for taxonomy-management-ebusiness.php. In the case of Post Formats, the taxonomy was 'post_format' and the terms were 'post-format-{format}'. i.e. taxonomy-post_format-post-format-link.php.
- 2. *taxonomy-{taxonomy}.php* If the taxonomy were management, WordPress would look for *taxonomy-management.php*.
- 3. *taxonomy.php* A taxonomy allows for the classification of things. In WordPress, there were two built-in taxonomies, categories and tags. These taxonomies help further classify posts, pages, and custom post types. Also, custom taxonomies can be defined.
- 4. archive.php
- 5. index.php

- Custom Post Types display

- 1. *archive-{post_type}.php* If the post type was discussions, WordPress would look for *archive-discussions.php*.
- 2. archive.php
- 3. index.php

- Author display
- 1. *author-{nicename}.php* If the author's nice name was mario, WordPress would look for *author-mario.php*.
- 2. *author-{id}.php* If the author's ID were 1, WordPress would look for *author-1.php*.
- 3. *author.php*
- 4. archive.php
- 5. index.php
- Date display
- 1. date.php
- 2. archive.php
- 3. *index.php*
- Search Result display
- 1. search.php
- 2. index.php
- 404 (Not Found) display
- 1. 404.php
- 2. index.php
- Attachment display
- 1. *MIME_type.php* it can be any MIME (Multipurpose Internet Mail Extensions) type (*image.php*, *video.php*, *application.php*). For text/plain, in order:
 - 1.1 text.php
 - 1.2 plain.php
 - 1.3 text_plain.php
- 2. attachment.php

- 3. single-attachment.php
- 4. single.php
- 5. *index.php*

- Filter Hierarchy

The WordPress templates system allowed users to filter the hierarchy. The filter (located in the <code>get_query_template()</code> function) uses this filter name: "<code>{\$type}_template"</code> where <code>\$type</code> was the a file name in the hierarchy without the .php extension. The filter hierarchy full list as follows:

- index_template
- 404_template
- archive_template
- author_template
- category_template
- tag_template
- taxonomy_template
- date_template
- home_template
- front_page_template
- page_template
- paged_template
- search_template
- $\bullet \ \ single_template$
- text_template, plain_template, text_plain_template (all mime types)
- attachment_template
- comments_popup

Descriptive Statistics

At the end of the research period, the participants were asked to complete a survey distributed by the researcher. 54 copies of the survey were retrieved. After examination of these surveys, 5 entries were deemed invalid due to incomplete responses, leaving a total of 49 copies as the remaining valid samples. Males and females accounted for 75.5% and 24.5% of the valid samples, respectively. The majority of the students (71.4%) spent less than one hour on blog usage per week and 65.3% of them had less than one year of experience in using blogs, as shown in Table 6.

Table 6 Background Data (N = 49)

Individual Characteristics	Classification	# of	%
		students	
Gender	Male	37	75.5
	Female	12	24.5
Major	Management and	40	81.6
	Information System		
	Management and	9	18.4
	Industrial		
	Engineering		
Experience	Less than 1 year	32	65.3
	1-2 years	13	26.5
	2-3 years	2	4.1
	3-4 years	0	0.0
	More than 4 years	2	4.1
Weekly Duration	Less than 1 hour	35	71.4
	1-3 hours	14	28.6
	3-5 hours	0	0.0
	5-7 hours	0	0.0
	More than 7 hours	0	0.0
Weekly Message Number	0-1 message	29	59.2
	1-2 messages	14	28.6
	2-3 messages	4	8.2
	3-4 messages	0	0.0

	More than 4	2	4.1
	messages		
Weekly Feedback Number	0-1 message	28	57.1
	1-2 messages	19	38.8
	2-3 messages	1	2.0
	3-4 messages	0	0.0
	More than 4	1	2.0
	messages		

Quantitative Statistics

Linear Regression Model

The model was used to validate that H_1 , H_2 , and H_3 had significant influences on Behavioral Intention (Y_1). These three independent variables together explained the 72.1% behavioral intention to use blog for learning. These independent variables also had the varying power of predicting behavioral intention, in order social influence (β = .644), performance expectancy (β = .346), and effort expectancy (β = -.104) as shown in Table 7. Performance expectancy and social influence were significant, but effort expectancy was not significant. Thus, H1 and H3 were accepted, but H2 was rejected.

Table 7
Regression Analysis (DV = Behavioral Intention)

	Standardize β Coefficients	<i>t</i> -value	Sig.
Performance	.346	2.720	.009*
Expectancy			
Effort Expectancy	104	941	.352
Social Influence	.644	6.166	.000*

 $R^2 = .721$. Adjusted $R^2 = .703$

^{*}p < .05

The null hypothesis (Ho) and alternative hypothesis (Ha) for performance expectancy are stated below:

Ho: Performance expectancy is not correlated with the level of intention to adopt blogs as a learning tool.

Ha: Performance expectancy is directly correlated with the level of intention to adopt blogs as a learning tool.

Performance expectancy (p = .009) had a significant direct correlation with Behavioral Intention and was consistent with the findings from previous studies (Chen, Wu, and Yang, 2008; Dasgupda, Haddad, Weiss, and Bermudez, 2007; Sedana and Wijaya, 2010; Venkatesh, Morris, Davis, and Davis, 2003). The result was logical since students would not intend to adopt the blog technology if they did not expect it to improve their performance in learning e-business course materials. Thus, Ho was rejected and Ha was accepted for performance expectancy. Furthermore, the result were proved by the participants' slight improvements from the mid-term exam mean scores (before using blog) to the final exam mean scores (after using blog) from the Management and Information Systems major. The result is shown in Table 8 below.

Table 8
Management and IS Participants' Mean Score for Mid-Term and Final Exam

Exam	N	Mean	SD
Mid-Term	14	78.7857	10.82148
Final Exam	14	79.0714	5.69027

Table 9 shows the mean scores between the mid-term and final-term exams for Management and Information Systems participants. There seemed to be no significant effect on performance expectancy (p = .906). The differences between condition means were likely due to chance, not due to the performance expectancy manipulation.

Table 9
Paired Samples T-test for Management and Information Systems
(Exam Scores – Performance Expectancy)

	Mean	SD	t	df	Sig. (2-
					tailed)
Pair 1	-2.8571	8.87025	121	13	.906
MidMIS –					
FinalMIS					

Participants' scores for e-business were better from the mid-term exam than the final exam for Management and Industrial Engineering major. As a result, Table 10 shows decreased mean scores from 74.5750 in the mid-term exam to 73.4250 in the final exam.

Table 10
Management and Industrial Engineering Participants' Mean Score for Mid-Term and Final Exam

Exam	N	Mean	SD
Mid-Term	40	74.5750	7.06703
Final Exam	40	73.4250	8.16461

Table 11 also shows the mean scores between mid-term and finalterm exam for Management and Industrial Engineering participants did not appeared to have a significant effect on performance expectancy (p = .460). The differences between condition means were likely due to chance or not likely due to the performance expectancy manipulation.

Table 11
Paired Samples T-test for Management and Industrial Engineering
(Exam Scores – Performance Expectancy)

	Mean	SD	t	df	Sig. (2-tailed)
					tailed)
Pair 1	1.15000	9.75219	.746	39	.460
MidMIE –					
FinalMIE					

In UTAUT theory framework, performance expectancy was moderated by age and gender. In this study, both male and female participants were undergraduate students within the same age range of 19-21 years. Table 12 shows the mean scores between males and females students for performance expectancy.

Table 12
Male and Female Mean Scores for Performance Expectancy

Gender	N	Mean	SD
Male	37	4.3716	1.06127
Female	12	4.6667	.59908

Previous research on gender differences has indicated that men tend to be highly task-oriented (Minton and Schneider 1980). Therefore, performance expectancies, which focused on task accomplishment, were likely to be especially salient to men. Based on the tendencies caused by the gender effect, men were more likely to be motivated by task-related performance and score higher in performance expectancy (Kirchmeyer,

2002). In this study, however, the mean scores of males in performance expectancy were lower than those of females, as shown in Table 12. Table 13 shows the mean scores between males and females participants for performance expectancy (p = .366) did not appeared to have a significant effect on blog use. The result was consistent with findings reported in a previous study (Marchewka, Liu, and Kostiwa, 2007). It may be caused by the participants' relatively young age. Additionally, they had been exposed to the same level of quality education and access to technology.

Table 13
Independent Samples T-test (Performance Expectancy - Gender)

	Equal	evene's Test for Equality of Variances		t-test for Equality of Means	
	F	Sig.	t	df	Sig. (2-tailed)
					tailed)
PE	3.195	.080	913	47	.366

PE = Performance Expectancy

The null hypothesis (Ho) and alternative hypothesis (Ha) for effort expectancy are stated below:

Ho: Effort expectancy is not correlated with the level of intention to adopt blogs as a learning tool.

Ha: Effort expectancy is directly correlated with the level of intention to adopt blogs as a learning tool.

Table 7 shows that effort expectancy (p = .352) had an inverse correlation with Behavioral Intention. The technology acceptance model (Stoel and Lee, 2003) explained that the more a user perceived a new technology to be easy-to-use and useful, the stronger their attitude would

be towards the technology, and the greater their intentions to use the technology would be. In this study, effort expectancy had an inverse correlation with behavioral intention. Thus, Ho was accepted while Ha was rejected. The result was consistent with findings reported in previous studies that utilized the UTAUT for technology acceptance in LMS (Sedana and Wijaya, 2010) and *Case Tools* (Dasgupda, Haddad, Weiss, and Bermudez, 2007), while other previous studies direct correlation between them (Chen, Wu, and Yang, 2008; Venkatesh, Morris, Davis, and Davis, 2003).

The negative influence of effort expectancy may had been caused by the participants' young age (19-21 years) and the fact that most of them had at least 1 year (65.3%) of experience in blogging. Morris and Venkatesh (2000) stated that effort expectancy would be a stronger determinant for individuals' intention among the older segment of the population. Effort expectancy was significant for behavioral intention when a system was in mandatory stage and would gradually decrease after a period of continuous usage (Venkatesh, Morris, Davis, and Davis, 2003).

Venkatesh and Morris (2000), drawing upon other research (Bem and Allen 1974; Bozionelos 1996), suggested that effort expectancy was more salient for women than for men. Table 14 shows the mean scores between males and females participants for effort expectancy.

Table 14
Male and Female Mean Scores for Effort Expectancy

Gender	N	Mean	SD
Male	37	4.5405	.91321
Female	12	4.8194	.72285

Prior research supported the notion that constructs related to effort expectancy would be stronger determinants for the individuals' intention for women (Venkatesh and Morris 2000; Venkatesh, Morris, and Ackerman, 2000). Table 15 shows that the mean scores between males and females did not have a significant effect on participants' effort expectancy (p = .341) for using the blog although female participants were better adapted towards the use of blog compared to male participants.

These results differed from the findings of Venkatesh, Morris, Davis, and Davis (2003), which might again be caused by the participants' relatively young age (19-21 years) in this study. Furthermore, female participants for this study were too low in numbers compared to that of males.

Table 15
Independent Samples T-test (Effort Expectancy - Gender)

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed)
EE	2.127	.151	962	47	.341

EE = Effort Expectancy

Morris and Venkatesh (2000) stated that constructs related to effort expectancy would be stronger determinants of individuals' intention amongst those from the older segment of the population and those with relatively little experience in using the system (Venkatesh, Morris, Davis, and Davis, 2003). Table 16 shows participants with blogging experience of more than 1 year were more comfortable with using the blog compared to the inexperienced participants.

Table 16
Experienced and Inexperience Group Mean Scores
for Effort Expectancy

Group	N	Mean	SD
Inexperience*	32	4.4844	.82345
Experienced**	17	4.8431	.93629

^{*} Less than 1 year ** More than 1 year

Increased age has been shown to have association with the difficulty in processing complex stimuli and allocating attention to information on the job (Plude and Hoyer, 1985), both of which may be necessary when using software systems. In this study, Table 17 shows the mean scores between inexperienced and experienced groups that did not have any significant influence for effort expectancy (p = .173).

Table 17
Independent Samples T-test (Effort Expectancy - Experience)

	Levene's Test for		t-test for Equality of		
	Equality of		Means		
	Variances				
	F	Sig.	t	df	Sig. (2-
		_			Sig. (2-tailed)
EE	.088	.768	-1.384	47	.173

EE = Effort Expectancy

The null hypothesis (Ho) and alternative hypothesis (Ha) for social influence were stated below:

Ho: Social influence is not correlated with the level of intention to adopt blogs as a learning tool.

Ha: Social influence is directly correlated with the level of intention to adopt blogs as a learning tool.

Table 7 also shows that social influence (p = .000) had a significant effect on Behavioral Intention. Venkatesh and Davis (2000) stated that social influence had an impact on individual behavior in mandatory settings and through three mechanisms: compliance, internalization, and identification. Thus, Ho was rejected and Ha was accepted. The result was consistent with findings in previous studies (Chen, Wu, and Yang, 2008; Dasgupda, Haddad, Weiss, and Bermudez, 2007; Lucas and Spitler, 2000; Sedana and Wijaya, 2010; Taylor and Todd, 1995; Venkatesh and Morris, 2000).

Table 18 shows that the mean scores for female participants were higher than male participants. It shows female participants were more sensitive to external opinions (e.g. lecturer or friends) when using blog for e-business class.

Table 18
Male and Female Mean Scores for Social Influence

Gender	N	Mean	SD
Male	37	4.3784	.97155
Female	12	4.4167	1.25025

Venkatesh, Morris, and Ackerman (2000) stated that women tend to be more sensitive to others' opinions and subsequently found social influence to be more relevant when forming an intention to use new technology. Table 19 shows that the mean scores between males and females participants did not have any significant influence on social influence (p = .913). It may caused by the low number of female participants in this study. Both males and females participants were exposed to the same level of education and similar access to technology.

Table 19
Independent Samples T-test (Social Influence - Gender)

	Levene's Test for		t-test for Equality of		
	Equality of		Means		
	Variances				
	F	Sig.	t	df	Sig. (2-tailed)
					tailed)
SI	.590	.446	110	47	.913

SI = Social Influence

Table 20 shows that the mean numbers of experienced participants were higher than those of inexperienced participants. This indicates that that experienced participants were more influenced on social influence than inexperienced participants when they intended to blog.

Table 20 Experienced and Inexperience Group Mean Scores for Social Influence

Group	N	Mean	SD
Inexperience*	32	4.3333	1.09659
Experienced**	17	4.4902	.92322

^{*} Less than 1 year ** More than 1 year

Morris and Venkatesh (2000) suggested that older users were more likely to place increased influenced on social influence, with the effect of declining in experience. Table 21 shows that the mean scores between inexperienced and experienced participants did not have any significant effect on social influence (p = .618). In this study, it might have been caused by both males and females participants' relatively young age (19-21 years) and previous experience with blogging.

Table 21
Independent Samples T-test (Social Influence - Experience)

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed)
SI	.653	.423	502	47	.618

SI = Social Influence

From SPSS data analysis, the non-standardized coefficient for the constant was 1.018, performance expectancy (X_1) was .335, effort expectancy (X_2) was -.112, and social influence (X_3) was .558. Thus, the first linear regression model prediction is as described below:

$$Y_1 = 1.018 + .335 (X_1) - .112 (X_2) + .588 (X_3)$$

For every point-increase in performance expectancy, a 0.34 point increase in behavioral intention was predicted. For every point-increase in effort expectancy, a 0.11 point decrease in behavioral intention was predicted. For every point-increase in social influence, a 0.59 point increase in behavioral intention was predicted, with the condition that all other variables were held constant.

Path Analysis Results

Path Analysis was used to validate H₄ has significant influence for Actual Use. Blogging period started at the end April 2011 and ended mid-June 2011 for the e-business class. A total of 7 posts, 3 pages, 47 comments, and 20 hyperlinks were obtained from the blog's statistic page. It also had 4 discussions and 2 assignments, with Chapter Summarizing Group garnering the most comments for a single post. The results were considered low because only 47 comments were made within a 3-month period. Table 22 shows the blog statistics for this study.

Table 22 Blog Statistics

Items	Numbers
Total Posts	7
Total Pages	3
(Introduction, Assignment, Discussion)	
Total Categories	3
(Assignment, Discussion, Uncategorized)	
Total Comments:	47
Discussion 1: e-Business Innovation	9
Assignment 1: Chapter Summarizing	20
Group	
Discussion 2: e-Supply Chain	7
Assignment 2: e-Business System	0
Presentation	
Discussion 3: Other EC Models and	1
Application	
Discussion 4: Web 2.0 and Social Network	5
Discussion 5: e-Market Place	5
Total Hyperlinks	20

Total Post Tags	2
Total Spam Comments	2
Total Views (April – June 2011)	1.409

Numerous past studies that found positive relationship between behavioral intention and actual use were consistent with the basic concept of user acceptance (Chen, Wu, and Yang, 2008; Ducate and Lomicka, 2005; Lin et al., 2006; Martindale and Wiley, 2005; Venkatesh, Morris, Davis, and Davis, 2003). Du and Wagner (2006) argued that weblog success depends mainly on the content value that a weblog can provide to its users and/or readers. Posting volume would be a key determinant of content value.

Researchers have found that people with higher levels of expertise were more likely to provide useful advice on computer networks (Constant, Sproull, and Kiesler, 1996). Conversely, an individual is less likely to contribute if they felt that they lacked the information/knowledge that would be useful to others (Lee, Cheung, and Sia, 2006). Figure 9 shows the path diagram of this study that behavioral intention did not have any significant relationship with actual use.

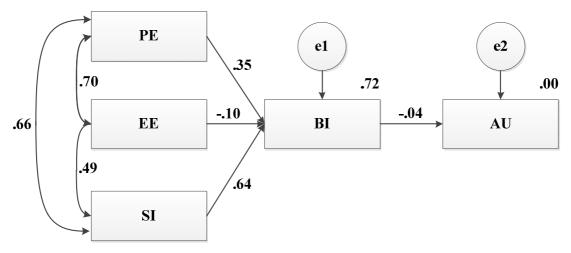


Figure 9. Path Diagram for Actual Use

The standardized regression ratio of Performance Expectancy (PE) to Behavioral Intention (BI) was .35, Effort Expectancy (EE) to BI was - .10, Social Influence (SI) to BI was .64, and BI to Actual Use (AU) was - .04.

The correlations among independent variables were also shown in Figure 9. Correlation value between PE and EE was .70, EE and SI was .49, PE and SI was .66. A positive correlation indicates a positive association between the variables (increasing values in one variable correspond to increasing values in the other variable). In this study, PE and EE had the strongest correlation value. Predictors of BI (e1) explained 72.1% of its variance, in other hand predictors of AU (e2) explained 0.2% of its variance. Table 23 shows the regression result:

Table 23
Regression Analysis (DV = Actual Use)

	Standardize β Coefficients	<i>t</i> -value	Sig.
Behavioral	043	294	.770
Intention			

 $R^2 = .002$. Adjusted $R^2 = -.019$

The null hypothesis (Ho) and alternative hypothesis (Ha) for behavioral intention are stated below:

Ho: Behavioral intention is not correlated with the level of actual usage of blogs as a learning tool.

Ha: Behavioral intention is directly correlated with the level of actual usage of blogs as a learning tool.

Behavioral intention (p = .770) was not positively had significant influence for actual use. It may be caused by low posting volumes on the blog, centralized type blog, and passive contribution from participants. Thus, Ho was accepted and Ha was rejected. Similar results were also obtained in past studies (Coulter and Draper, 2006; Nardi, Schiano, Gumbrecht, and Swartz, 2004). Coulter and Draper (2006) believed that the answer to this was to work with the faculty in creating incentives for students to participate in blog discussions.

DISCUSSION

Conclusion

This research study adopted the UTAUT, a comprehensive theory that integrates eight social psychology and sociology theories, to investigate the effects of major factors on behavioral intention and actual use of blog to learn e-business course materials and topic discussions. Social influence and performance expectancy had positive influence for behavioral intention, while effort expectancy did not have any positive influence for behavioral intention. These three independent variables together explained 72.1% of behavioral intention to use blog for learning. Behavioral intention also did not have any positive significant influence on actual use. It may be caused by low posting volumes on the blog, centralized type blog, and passive involvement from participants. Furthermore, both gender and experience did not demonstrate a moderating effect on the blog use. The outcomes of the hypotheses in this study were summarized in table 24.

Table 24 Hypotheses Results

Hypothesis	Construct	β	Sig	Result
H1	Performance	.346	.009*	Accepted
	Expectancy			
H2	Effort Expectancy	104	.352	Rejected
НЗ	Social Influence	.644	*000	Accepted
H4	Behavioral Intention	043	.770**	Rejected

 $R^2 = .721$. Adjusted $R^2 = .703$

^{*}p < .05

^{**} $R^2 = .002$. Adjusted $R^2 = - .019$

Summary

In this study, social influence had the highest predictive power (β = .644) for behavioral intention and also had significant positive influence (p = .000) to behavioral intention. The result was consistent with findings in previous studies (Chen, Wu, and Yang, 2008; Dasgupda, Haddad, Weiss, and Bermudez, 2007; Lucas and Spitler, 2000; Sedana and Wijaya, 2010; Taylor and Todd, 1995; Venkatesh and Morris, 2000). The mean differences between gender (p = .913) and experience (p = .618) were not significant in social influence. It might have been caused by the low number of female participants in this study. Furthermore, both males and females participants were also relatively in young age (19-21 years) and already had previous experiences in blogging.

Performance expectancy had the second highest predictive power (β = .346) for behavioral intention and also had significant influence (p = .009) to behavioral intention. The result was consistent with findings in previous studies (Chen, Wu, and Yang, 2008; Dasgupda, Haddad, Weiss, and Bermudez, 2007; Sedana and Wijaya, 2010; Venkatesh, Morris, Davis, and Davis, 2003). Furthermore, the results were shown by participants' slight improvement in final exam mean scores (after using blog) for Management and Information Systems major. The paired t-test result between the mean scores for mid-term and final-term exam of Management and Information Systems participants did not appeared to have a significant effect on performance expectancy (p = .906). The differences between condition means were likely due to chance or not likely due to the performance expectancy manipulation. Furthermore, the mean numbers between gender (p = .366) was not had any significant influence for performance expectancy. It may caused by participants'

relatively young age. They were also enjoyed the same level of quality education and access to technology.

Effort expectancy had the lowest predictive power ($\beta = -.104$) for behavioral intention and also did not had significant positive influence (p = .352) to behavioral intention. The result was consistent with findings reported in previous studies using UTAUT for technology acceptance in LMS (Sedana and Wijaya, 2010) and Case Tools (Dasgupda, Haddad, Weiss, and Bermudez, 2007), while other previous studies reported significant influence between them (Chen, Wu, and Yang, 2008; Venkatesh, Morris, Davis, and Davis, 2003). The negative influence of effort expectancy may caused by participants' young age (19-21 years) and most of them had experience about blog technology at least less than 1 year (65.3%). The mean numbers between gender (p = .341) and experience (p = .173) were not had any significant influence for effort expectancy. It may caused by only few numbers of female participants who participated in this study. Furthermore, both males and females participants were also relatively in young age (19-21 years) and had experience on blogging so it was not in mandatory settings of blogging experience.

In this study, both males and females were college students and enjoyed the same level of quality education and similar access to technology. They also had experience on using blog technology and were most likely familiar with the use technology in their everyday lives before this study conducted. Therefore, it may not be surprising to see that both gender and experience did not demonstrate a moderating effect on the blog use give students' widespread use of technology. To accelerate blog adoption to learn e-business, peers' encouragement for students to use blog in learning e-business is important. The university and lecturer may

influence students for using the blog technology by supporting it and speaking positively about this technology during course orientation. Furthermore, it was necessary to cooperate with faculty in creating incentives for students to participate in discussions on the blog. By encouraging students with these approaches, student's behavioral intention to adopt blog as learning technology and actual use of the blog itself should be increased as well.

Limitation of Study

According to UTAUT (Venkatesh, Morris, Davis, and Davis, 2003), moderating factors including age, gender, experience, and volunteerism of use can moderate the hypothesized results of this study. Morris and Venkatesh (2000) showed that users of younger age were more attracted to the extrinsic rewards while users of older age to intrinsic rewards. In this study, participants fell mostly within the age range of 19-22 years old. Thus, the effect of age on the findings in this study should be minimal.

Venkatesh, Morris, Davis, and Davis (2003) showed that the above factors can influence the intention of using an information technology and the actual behavior of using it. In this study, although the use of blog was required in the course, the researcher did not control the participants' voluntary use of it. Thus, little control over voluntary use was a limitation. Srite and Karahanna (2006) stated that social standards were a stronger determinant on behavioral intention of using new information technology than age, gender, and experience were.

This study's sample was limited in size and was comprised of participants who attended the same university and were in the same level of education. Therefore, the researcher's ability to extrapolate its findings onto other educational contexts would be limited. Additionally, the sample

was selected from those who volunteered to participate in the e-business course class, rendering a less random selection of the sample participants. Furthermore, this study focused on the quantitative assessment of proposed hypothesis relationships and did not include the content and the quality of blog messages as a part of the study.

Future Recommendation

In future studies, researchers could investigate the use of blog technology by graduate students with more diversity in age or experience. With a more controlled environment of graduate students, researchers could investigate moderating factors (age and voluntariness of use) that were not examined in this study to verify whether or not those factors were significant within a university setting. Experience and gender could also be reinvestigate to confirm its effect on different age groups. Quality of messages from students could be investigated to provide richer results on this topic.

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APPENDIX A

Acceptance of Blog Technology in e-Business Course

DEMOGRAPHIC QUESTIONS

Instructions: Fill the blanks and/or give a tick mark (\checkmark) on the box that
correspond to your answers.
Gender: ☐ Male ☐ Female
Date of Birth: (dd) (mm) (yyyy), Age: years
Faculty / Major: /
How long have you blogging?
\square < 1 year \square 1-2 years \square 2-3 years \square 3-4 years \square > 4 years
How long you using e-business course blog in a week?
\square < 1 hour \square 1-3 hours \square 3-5 hours \square 5-7 hours \square > 7 hours
How many numbers of your posted messages in a week?
\square < 0-1 messages \square 1-2 messages \square 2-3 messages \square 3-4 messages
□ > 4 messages
How many numbers of your feedback messages in a week?
\square < 0-1 messages \square 1-2 messages \square 2-3 messages \square 3-4 messages
$\square > 4$ messages

SURVEY QUESTIONS

correspond to your answers.
Example:
I find this survey is easy to answer.
Unlikely Likely
Extremely Quite Slightly Slightly Quite Extremely
PERFORMANCE EXPECTANCY
1. I would find the system useful in my learning of e-business course
materials.
Unlikely Likely
Extremely Quite Slightly Slightly Quite Extremely
2. Using the system enables me to accomplish learning e-business course
materials more quickly than other e-learning technologies (e.g
discussion board, bulletin board).
Unlikely Likely
Extremely Quite Slightly Slightly Quite Extremely
3. Using the system would enhance my learning effectiveness of e business concepts.
Unlikely Likely
Extremely Quite Slightly Slightly Quite Extremely

Instructions: Fill the blanks with a tick mark (\checkmark) on the space that

4.	Using the system	would	improve m	iy learnin	ig perfor	mance.	
	Unlikely					_	Likely
	Extremely	Quite	Slightly	Slightly	Quite	Extremely	,
5.	Using the system	would	enhance m	y learnin	g effecti	veness.	
	Unlikely		_				Likely
	Extremely	Quite	Slightly	Slightly	Quite	Extremely	,
6.	If I use the system	em, I w	ill increase	e my cha	ances of	grasping	e-business
	concepts.						
	Unlikely						Likely
	Extremely	Quite	Slightly	Slightly	Quite	Extremely	,
7. If I use the system, I will increase the quality and quantity of output for							
	the same amount	of effor	rt.				
	the same amount			ı	l	1 1	I ikoly
	Unlikely						-
8.	Unlikely	Quite	Slightly	Slightly	Quite	Extremely	,
8.	Unlikely Extremely	Quite	Slightly	Slightly	Quite	Extremely	,
8.	Unlikely Extremely	Quite	Slightly	Slightly	Quite	Extremely	,
8.	Extremely If I use the system business course to	Quite em, I was	Slightly ill increase	Slightly e my lear	Quite	Extremely	s on the e-
8.	Unlikely	Quite em, I witasks. Quite	Slightly ill increase	Slightly my lear Slightly	Quite rning eff Quite	Extremely ectiveness	s on the e-
	Unlikely	Quite em, I wite easks. Quite EF	Slightly ill increase Slightly Slightly	Slightly my lear Slightly PECTAN	Quite rning eff Quite	Extremely Sectiveness LEXTREMELY	s on the e-
	Unlikely Extremely If I use the system business course to the system of the	Quite em, I wite easks. Quite EF	Slightly ill increase Slightly Slightly	Slightly my lear Slightly PECTAN	Quite rning eff Quite	Extremely Sectiveness LEXTREMELY	s on the e-

2.	. It would be easy for me to become skillful at using the system.	
	Unlikely Likely	
	Extremely Quite Slightly Slightly Quite Extremely	
3.	. I find the system easy to use.	
	Unlikely Likely	
	Extremely Quite Slightly Slightly Quite Extremely	
4.	. I believe that is easy to get the system to do what I want it to do.	
	Unlikely Likely	
	Extremely Quite Slightly Slightly Quite Extremely	
5.	Learning to use the system in learning e-business course materials	anc
	concepts is easy for me.	
	Unlikely Likely	
	Extremely Quite Slightly Slightly Quite Extremely	
6.	. Working with the system in learning e-business course materials	anc
	concepts is easy for me.	
	Unlikely Likely	
	Extremely Quite Slightly Slightly Quite Extremely	
	SOCIAL INFLUENCES	
1.	. People who influence my behavior think that I should use the system	n ir
	learning e-business course materials.	
	Unlikely Likely	
	Extremely Quite Slightly Slightly Quite Extremely	

2.	People who are in	mportant	to me thi	nk that I	should u	se the system.	
	Unlikely		<u></u>			<i>Likely</i>	
	Extremely	Quite	Slightly	Slightly	Quite	Extremely	
3.	Bina Nusantara	Universit	y is very	supporti	ve of th	e use of the syst	em
	for my learning o	f e-busin	ess cours	e materia	als and co	oncepts.	
	<i>Unlikely</i>					<i>Likely</i>	
						Extremely	
1	My locturer and	taaahina	occistonts	s hove be	oon holm	ful in the use of	th,
4.	My lecturer and system to learn e-				_		H
	Unlikely					-	
						Extremely	
5.	My lecturer and to system for my least Unlikely Extremely	arning of	e-busines	ss course	material	s and concepts.	the
6.	Students in my	class wh	o use the	e system	to lear	n e-business cou	rse
	materials and con	cepts hav	ve more p	restige tl	han those	e who not.	
	<i>Unlikely</i>		<u> </u>			<i>Likely</i>	
	Extremely	Quite	Slightly	Slightly	Quite	Extremely	
1.	The actual proces		AVIORAI				
	Unlikely		Slightly	Slightly	Ouita	Likely Extramely	
	Extremely	Quue	sugnity	sugnity	Quiie	Extremely	

2. I look forward to those aspects	s of learning tasks	that require me to use
the system.		
Unlikely		<i>Likely</i>
Extremely Quite Sligh	htly Slightly Qu	ite Extremely
3. I would recommend using t materials and concepts.	the system to le	arn e-business course
1	1	T.1.1.
Unlikely		,
Extremely Quite Sligh	htly Slightly Qu	ite Extremely

Blogs are among the many commonly used technologies for educational purposes. However, they are also a technology used as a conversational and constructivist learning tool. Blogs' interactive, collaborative, user-friendly, and instant archival features have transformed them into effective tools for enhancing case-based teaching methods within the asynchronous nature of the online environment. The authors examined the student populace's acceptance of the blog through the use of a framework known as the Unified Theory of Acceptance and Use of Technology (UTAUT). This framework integrated eight theories from social psychology and sociology in order to examine the effects of several major factors on behavioral intention and actual use of the blog while learning e-business course materials and discussion topics.

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