

Effects of Website Quality on Users' Perceived Responses and Loyalty

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This study identified various factors that enhance the quality of educational institutions' websites by reviewing several existing studies on website qualities, in an attempt to empirically verify the effects of these identified factors on website users' perceived responses and loyalty. The study's questionnaire was conducted on the students of a foreign language institution located in the Geonggi Province. A total of 388 questionnaires were analyzed, and the results are as follows.

First, website quality was set as the independent variable, and was sub-divided into information quality, service quality, and system quality. These sub-factors of website quality were further divided into several factors. The information quality was categorized into utility, currency, accuracy, and interestingness; the service quality was categorized into searchability, diversity, interactivity, aesthetics, and connectivity, and the system quality was categorized into security and stability. The website users' perceived responses and loyalty were set as the dependent variables, which were further categorized into measurable sub-factors: perceived responses were categorized into attitude, trust and satisfaction, and loyalty was categorized into word of mouth/purchase and return visit intention.

The results of the analyses revealed that connectivity (service quality) had the greatest effect on attitude (users' perceived response); aesthetics (service quality) had the greatest effect on trust (users' perceived response), and interactivity (service quality) had the greatest effect on satisfaction (users' perceived response). Furthermore, searchability (service quality) had the greatest effect on word of mouth/purchase (loyalty), and aesthetics (service quality) had the greatest effect on return visit intention (loyalty). Attitude, trust, and satisfaction had a significant positive effect on word of mouth/purchase and return visit intention, with satisfaction and attitudes having the most effect on word of mouth/purchase and return visit intention, respectively.

Key words: Website quality, Information quality, Service quality, System quality, Perceived response, Loyalty

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I. Introduction

Despite the rapid technological development of online space, many educational institutions regard a website simply as a promotional tool. Websites, however, connect educational institutions with customers and function not only as an effective marketing tool but also as an e-business tool that ameliorates operations. To exploit a website to its fullest, one should give weight to the quality of the website (Armstrong & Hagel, 2000). Website quality is also important, as it may be the decisive factor in inducing return visits (Rheingold, 1993). Consequently, this research classifies website quality based on its effects on users, with the aim of establishing a high-quality website with positive effects on the attitude and trust of users, raising the frequency of visits, and also providing the opportunity to increase word of mouth/purchase effects.

A website is not merely a channel providing information about a company's goods and services; rather, it is a new market through which the company can further interact with its consumers. Website quality indicates how convenient and efficient the design is in providing users with their desire information. As the Internet has become more accessible, websites are used as a marketing strategy, and their increasing significance is prompting intensive research (Ghosh, 1997; Hoffman &

Novak, 1996; Lindroos, 1997; Liu & Arnett, 2000; Ostrowski, O'Brien, & Gordon, 1993; Porter & Parker, 1993).

Previous studies, however, have focused on a particular quality or an extraction of several quality factors. They were concerned only with particular responses from users (trust, return purchase, word of mouth, etc.), and there has been no integrated study on the effects of quality on overall purchases. Unlike online commercial markets, such as Internet shopping malls, the studies focused only on particular company websites. For example, educational institution websites focused only on the quality of information (DeLone & McLean, 1992).

This paper examines diverse factors that can enhance the quality of educational institution websites based on various previous researches related to websites, dividing each factor into several sub-factors, and attempts to empirically verify the process in which the users are led to make purchases via websites.

II. Theoretical Background

2.1 Website quality

A website is not merely a channel providing information about a company's goods and services; rather, it is a new market through

which the company can further interact with its consumers. Moreover, it is a popular corporate strategic tool, and many companies find it important to perform quality evaluations of their websites (De Troyer & Leune, 1998). Previous studies on website quality can be broadly divided into two categories: studies that evaluated the user-friendliness and utility of a website, and those that regarded websites as an information system and suggested that the same quality evaluation criteria be used for website evaluations.

Regarding websites' user friendliness and utility, Ghosh (1997) suggested four competitive-edge factors in his study: convenience, information, personal taste, and interactivity. Henry et al. (1999) suggested five factors that determine the competitiveness of an online shopping mall: selection range, convenience, quality information, low prices, and customer taste. Furthermore, Moon & Lee (2005) and Porter & Parker (1993) suggested that website quality is determined by the qualitative levels of seven factors—availability, understandability, relevance, utility, timeliness, trust, and consistency—while Ostrowski et al. (1993) proposed three qualitative factors in terms of the provided information: time dimension, content dimension, and form dimension.

On the other hand, some studies suggested evaluation criteria for websites in line with that for information systems. In other words, these studies considered websites as a tradi-

tional information system, employing the traditional evaluation criteria—quality of use and quality of system—on websites as well (Lindroos, 1997). In the same context, Liu and Arnett (2000) stated that the key factors of a successful website are learning capability, playfulness and system use. Moreover, they also mentioned information quality, system quality, and service quality as important factors, and emphasized the significance of these three factors in evaluating the quality of a website. Likewise, DeLone and McLean (1992) categorized the outcomes of an information system into six categories: system quality, information quality, information use, user satisfaction, individual impact, and organizational impact. In addition, based on the technological acceptance model (TAM), Yang, Cai, Zhou, and Zhou (2005) divided the quality dimension into information quality (utility, information richness), system quality (accessibility, security/privacy), and service quality (interactivity, utility), highlighting their relationships with the system outcomes. In fact, according to the Fortune Magazine's survey on the webmasters of the top 1,000 enterprises, information and service quality, system use and quality, interestingness, and system design were selected as the crucial factors of building a successful website. Accordingly, studies that investigated quality of websites with regards to information systems generally suggest that the quality of a website depends equally on information

quality, system quality, and service quality (Igarria & Chakrabarti 1990), and that the management of these factors is imperative to ensure success.

All in all, previous studies broadly categorize website quality into two aspects: user-friendliness and utility aspect, and information system aspect. Furthermore, these studies are limited in that quality evaluation is performed only from one perspective. A website has a unique characteristic in that users can quickly switch to another website if it does not fulfill their needs or is difficult to use. Consequently, convenience and utility are two critical factors all websites must exhibit. Thus, it would be more beneficial to perform quality evaluations by combining both of the above mentioned standpoints: a high quality information system is a precursor to boost utility and convenience of a website. For this reason, the present study will broadly classify websites' quality components into information quality, service quality, and system quality to embrace both viewpoints and evaluate quality using sub-factors in an integrated viewpoint.

Information quality is defined as the provision of information that can satisfy users' purposes and desires. It is regarded as the quality of information delivery and e-commerce, which are important objectives of a website (Igarria & Chakrabarti, 1990; Katerattanakul & Siau, 1999; Zhang, Small, Von Dran, & Barcellos, 2000). High-quality information

has positive effects on users' decision-making, which in turn could pave the way to success (Tabor, 1999). This category of information quality should provide readily interpreted and understood information in addition to ensuring accuracy. Based on these criteria, information quality can be classified into utility, currency, accuracy, and interestingness. Utility of information refers to effective and efficient information for users that fulfill their particular purpose. Currency of information refers to the degree of maintaining the latest information through continuous registration. Accuracy of information quality refers to the degree of certainty of the provided information, and interestingness of information indicates the degree of provision of issues or information that are of interest to the users (Bruwer, 1984). The amount of information and speed of product information renewal on the website have effects on customer satisfaction (Chen, Clifford, & Wells 2002; Lee & Chung, 2000). In addition, consumers' behaviors change when they encounter the latest and interesting information (Girard, Silverblatt, & Korgaonkar, 2002; Swaminathan, Lepkowska, & Rao, 1999).

Service quality is a measure of the degree to which the provided services satisfy consumers' expectations, and a high quality refers to a consistent provision of such satisfactory services (Grönroos, 1984; Lewis & Booms, 1983). In the past, emphasis was given only to information quality and system quality.

but as customer demands became diversified with increased Internet use, the significance of service quality came to the fore (Liai & Cheung 2001).

Grönroos (1984) divided service quality into technical quality and functional quality, while Parasuraman, Zeithaml, and Berry (1985) divided it into five factors - materiality, reliability, certainty, responsiveness, and sympathy. Previous studies suggested that searchability, diversity, interactivity, aesthetics, and connectivity are the components of service quality. Searchability refers to the speed of searching particular information; diversity refers to the degree of diverse functions provided by freely combining existing expansion functions; interactivity refers to the easiness of interaction among communication participants; aesthetics refers to the adequateness of website's visual characteristics such as colors and font size in effectively delivering targeted ambiance and purpose, and connectivity refers to the availability of interactive communication channels such as the social media. Grönroos (1990) divided service quality into technical quality, functional quality and company image, and found that service quality affected users' perceived responses such as professionalism, technical attitude and behavior, negotiability, trust and credibility, and reputation (Moon & Lee, 2005).

Finally, system quality refers to the measurement of the system, per se, that processes

information (DeLone & McLean, 1992; Konradt, Filip, & Hoffmann, 2003). Different researchers lay out different opinions about the components of system quality. DeLone and McLean (1992) suggested convenient use, easy accessibility, customer trust in the system, and response time; Konradt, Filip, and Hoffmann (2003) suggested timeliness, response time, applicability, accessibility, and usability, and Jarvenpaa and Todd (1996) stated accuracy of data, ease of data search, flexibility of the system, and response time. Lately, however, the exposure of private information has become a hotly discussed issue, shedding light on the security aspect as one of the most important qualities of a system (Gehrke & Turban, 1999) and a matter of great concern for the users (Guay & Ettwein, 1998). Of note, security refers to the degree of safety of personal information on a website, whereas stability means the consistency or the speed of website's response and processing time.

Thus, against this backdrop, this study classified a website's quality into information quality, service quality and system quality, and aimed at measuring the components of each type of quality. The three qualities were further divided into several subcategories: information quality is divided into utility, currency, accuracy, and interestingness; service quality is divided into searchability, diversity, interactivity, aesthetics, and connectivity, and system quality is divided into security and

stability.

2.2 Relationship between website quality and perceived responses

The quality of a website wields influence on users' behaviors, trust, and satisfaction with regard to the website. DeLone and McLean (1992) analyzed the effect of information quality and system quality on users' degree of satisfaction (Seddon & Kiew, 2007). McGill, Hobbs, and Klobas (2003) analyzed the effect of website quality on users' satisfaction, intentional use, and individual outcome. Moreover, Molla and Licker (2001) examined the effect of information quality on reliability, supporting service, and customer satisfaction.

Attitude refers to the degree to which people like or dislike a certain object (Ajzen & Fishbein, 1980; Eagly & Chaiken, 1993; Fishbein & Ajzen, 1975). According to Fishbein and Ajzen (1975), a person's attitude towards an object is determined by the person's belief about the object, and the attitude formed towards the object affects his behavioral intention. Trust on the website refers to the degree of users' favorable responses to various information and properties existing within the website. It is a measure of anticipation of potential benefits from or an absolute faith in someone (Kettinger & Lee 1994; Parasuraman, Berry, & Zeithaml 1991; Pitt, Watson, & Kavan, 1995), even including a psychological

state demonstrating risk-taking behavior (Mayer, Davis, & Schoorman 1995).

As users trust their exchange partner and exercise the will to rely on him/her, the exchange proceeds smoothly (Moorman, Deshpande, & Zaltman, 1993). In the long run, it also becomes the foundation of brand loyalty and is thus an essential element of a mutual transaction. This becomes even more important when one cannot directly see the traders and their products/services (Kim, 2003a).

Trust is divided into perceived credibility and benevolence in the relationship between purchasers and sellers. Credibility means an objective perspective towards the other party and an expectation to believe the other party's words or written statements. Benevolence refers to the degree to which the other party is sincerely interested in another party and exerts efforts to seek common profits (Doney & Cannon, 1997; Jarvenpaa, Tractinsky, & Vitale, 2000).

Trust is not only important in forming a relationship but is also a factor in completing transactions. Thus, in the website, trust in customers is critical.

Third, satisfaction is an important theme in management (Francken & Raaij, 1981), and websites are no exception to this. Satisfaction is generally a result of consumption experiences and is determined by the relationship between the expectation before the experience and the results of the experience. In

other words, to achieve customer satisfaction, the customers' actual experiences should be higher than their prior expectations (Engel, Blackwell, & Miniard, 1995; Oliver, 1980; Yi, 1990).

The experiences explained here comprise behaviors in a broader sense, such as retail store purchases, or consumer behavior related to particular products and services or experiences about the whole market (Westbrook & Reilly, 1983). Satisfaction itself implies multidimensional concepts and is not only related to an enterprise's products or website quality but also contributes to the enterprise's profitability (Zeithaml, Parasuraman, & Malhotra, 2000).

2.3 Relationship between website quality and loyalty

Website quality affects loyalty to educational institutions, return visit intention, word of mouth, and purchase of products and services (Kim, 2003b; Hawkins, Best, & Coney, 1998; Ryu, 2001).

Return visit, which is a typical indicator of a website's profitability, means that customers continue to be loyal and repeatedly visit the website (Peterson, Balasubramanian, & Bronnenberg, 1997; Rice, 1997; Seddon & Kiew, 2007). Customer loyalty, which is defined as consumers' attitude to willingly use a particular enterprise, store, or product re-

petitively, is important to the enterprise's profitability (Liu & Arnett, 2000).

Second, consumers not only view information provided by the enterprise, such as promotional advertisements of properties and photographs, but also are exposed to other users' reviews and ratings, which they perceive as additional information; these vastly affect their purchase decisions, and it called the *word-of-mouth effect* (Kim, 2003b; Ryu, 2001).

A typical example of an online word of mouth is users' comments or reviews. Because of their influence over purchases by prospective consumers, it is important for companies to establish trust for their products among users. Word of mouth within the website can overcome the limitations of time and space (Kiesler, 1997).

Purchase intention refers to the consumers' planned future behavior and the possibility of belief and attitude moving towards action (Eroglu & Harrell, 1986; Lee & Chung, 2000). The value of the purchase within the website is formed through website quality and characteristics as well as customer characteristics, and this directly affects the purchase intention (Bolton & Drew, 1991). Consumer satisfaction is an important variable of return purchase intention (Jun & Chung, 2006; Kim & Lee, 2005; Oliver, 1980).

As discussed above, several study results indicate that website quality factors - information quality, service quality, and sys-

tem quality - have positive effects on user responses, such as attitude, trust, satisfaction and loyalty (word of mouth/purchase, return visit intention). Preceding researches, however, have verified the effects of the website quality factors only in the fragmentary aspects, such as trust and satisfaction, and lack detailed explanations about the effects of website quality factors. Therefore, this study lays out their effects on users' perceived responses and loyalty in more detail.

III. Research Model and Hypotheses

3.1 Research Model

This paper examines the effects of educational institution websites on users' judgment and decision-making. The research model of this paper set up a relationship with website quality centering on the concepts of users' major response variables and loyalty variables in past studies. Most previous studies on website quality dealt with the quality of websites aiming at direct purchases, such as websites of shopping malls (Breitenbach & Van Doren, 1998; McQuitty, Finn, & Wiley, 2000; Parasuraman et al., 1991; Parasuraman, Zeithaml, & Malhotra, 2005; Rayport & Jaworski, 2001; Ribbink, Van Riel, Liljander, & Streukens, 2004; Rosa & Porac, 2002;

Yun & Good, 2007). This paper, however, will attempt to examine the effects of the quality of educational institution websites, where information search and purchase happen simultaneously based on users' judgment and behavior.

The relationship between website quality and users' perceived responses and loyalty was structured by dividing it roughly into three directions. First, website quality was schematized after subdividing the factors through factor analysis. Website quality was divided into three qualities with reference to preceding studies: information quality (Ahituv, 1980; Bailey & Pearson, 1983; English, 2005; King & Epstein, 1983; Livari, 1987; Zhang et al., 2000), service quality (Kettinger & Lee, 1994; Palmer & Griffith, 1998; Parasuraman, Zeithaml, & Berry, 1988; Parasuraman et al., 1985), and system quality (DeLone & McLean, 1992; Jarvenpaa & Todd, 1996; Konradt et al., 2003). Information quality has four factors: utility, currency, accuracy, and interest. Service quality has five factors, namely, searchability, diversity, interactivity, aesthetics, and connectivity; while system quality has two: security and stability.

Second, as direct effects of website quality, the relationship between website quality and perceived responses and the relationship between website quality and loyalty were schematized. The relationship between website quality and perceived responses was sche-

matized by dividing it into trust (DeLone & McLean, 1992; Kettinger & Lee, 1994), attitude (Ajzen & Fishbein, 1980; Eagly & Chaiken, 1993; Fishbein & Ajzen, 1975; Lee, Kang, Suh, & Kim, 2005; Shankar, Urban, & Sultan, 2002), and satisfaction (Engel et al., 1995; Jun & Chung, 2006; Oliver, 1980; Yi, 1990). Next, the relationship between website quality and loyalty was schematized by dividing it into word of mouth/purchase (Eroglu & Harrell, 1986; Kiesler, 1997) and return visit intention (Rice, 1997; Seddon & Kiew, 2007).

Finally, the relationship between perceived responses and loyalty was schematized (Eroglu & Harrell, 1986; Oliver, 1980; Zeithaml et al., 2000).

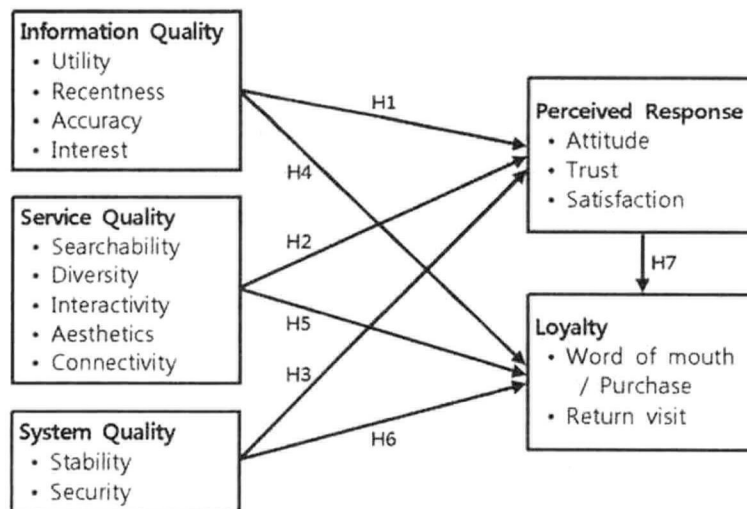
Figure 1 presents the research model based on the previously discussed theoretical background.

3.2 Establishment of Hypotheses

Assuming that there is a significant correlation between the websites of educational institutions and users' responses and behavior, the following hypotheses are established.

Because consumers' primary purpose of visiting a website is to collect necessary information (Ellis-Chadwick, Mayer, & Johnston, 2009), information quality is bound to affect users. When a website has high service quality (e.g., convenience provided to the users), the degree of satisfaction will be high, which in turn can establish trust in the website (Morgan & Hunt, 1994; Lee et al., 2005; Oliver, 1980).

A high system quality provides users with security and stability, which translates to



〈Figure 1〉 Research Model

convenience for users (Jarvenpaa & Todd, 1996). Therefore, system quality increases the level of trust in the website (Jarvenpaa et al., 2000), forms a favorable attitude towards the website, and raises user's satisfaction (Ajzen & Fishbein, 1980; Doney & Cannon, 1997; Fishbein & Ajzen, 1975; Parasuraman et al., 1991).

According to the extended technology acceptance model (Extended TAM), in which Chuan-Chuan Lin and Lu (2000) explained the use of a website, website preference and perceived utility have significant effects on return visit intention. Perceived convenience and utility also have significant effects on attitude formation.

In general, return visit intention in diverse information technology research is being used as an important variable that predicts and determines future behavior in the rational behavior theory (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). According to Ajzen's (1985) theory of reasoned action (TRA) and theory of planned action, people with spontaneous behavior act based on the degree of their intention. In other words, the intention to act can be explained by the actor's attitude towards the action. The same logic can be applied to Internet users' use of a website. Purchase intention within the purchase behavior or the use of the Internet was measured and used as a substitute for future purchase action (Chen & Dhillon, 2003; Chuan-

Chuan Lin & Lu, 2000; Jarvenpaa et al., 2000; Lee & Chung, 2000; Moon & Kim, 2001). Therefore, return visit intention is an accurate predictor variable of future action.

Website quality is a factor that can affect return visit intention (Cronin & Taylor, 1994). That is, there is a high return visit intention for websites that provide useful information with safety and convenience. Hence, in forming purchase intention, perceived website quality is related to customer satisfaction. Customer satisfaction, trust, and attitude are the parameters of website quality and purchase intention (Cronin & Taylor, 1992; Woodside, Frey, & Daly, 1989). Website quality has positive effects on customer satisfaction, trust, and attitude while satisfaction has positive effects on trust (Garbarino & Johnson, 1999).

There is a positive correlation between users' perceived responses and repurchase intention (Cronin & Taylor, 1994; Kim & Lee, 2005; Lucas, 1975; Oliver, 1980). The following hypotheses regarding website quality, perceived responses, and loyalty sum up the discussion thus far.

Hypothesis 1: Information quality will have a positive (+) effect on users' perceived responses.

Hypothesis 1-1: Information quality will have a positive (+) effect on users' attitudes.

Hypothesis 1-2: Information quality will have a positive (+) effect on users' trust.

Hypothesis 1-3: Information quality will have a positive (+) effect on users' satisfaction.

Hypothesis 2: Service quality will have a positive (+) effect on users' perceived responses.

Hypothesis 2-1: Service quality will have a positive (+) effect on users' attitudes.

Hypothesis 2-2: Service quality will have a positive (+) effect on users' trust.

Hypothesis 2-3: Service quality will have a positive (+) effect on users' satisfaction.

Hypothesis 3: System quality will have a positive (+) effect on users' perceived responses.

Hypothesis 3-1: System quality will have a positive (+) effect on users' attitudes.

Hypothesis 3-2: System quality will have a positive (+) effect on users' trust.

Hypothesis 3-3: System quality will have a positive (+) effect on users' satisfaction.

Hypothesis 4: Information quality will have a positive (+) effect on users' perceived loyalty.

Hypothesis 4-1: Information quality will have a positive (+) effect on users' word of mouth/purchase.

Hypothesis 4-2: Information quality will have a positive (+) effect on users' return visit intention.

Hypothesis 5: Service quality will have a positive (+) effect on users' loyalty.

Hypothesis 5-1: Service quality will have a

positive (+) effect on users' word of mouth/purchase.

Hypothesis 5-2: Service quality will have a positive (+) effect on users' return visit intention.

Hypothesis 6: System quality will have a positive (+) effect on users' loyalty.

Hypothesis 6-1: System quality will have a positive (+) effect on users' word of mouth/purchase.

Hypothesis 6-2: System quality will have a positive (+) effect on users' return visit intention.

Hypothesis 7: Users' perceived responses will have a positive (+) effect on loyalty.

Hypothesis 7-1: Users' perceived responses will have a positive (+) effect on word of mouth/purchase.

Hypothesis 7-2: Users' perceived responses will have a positive (+) effect on return visit intention.

3.3 Definition of variables and measurement items

This research categorizes the factors that constitute the websites of educational institutions and examines the process in which the categorized qualities affect users' decision-making. Website quality is divided into information quality, service quality, and sys-

tem quality.

Information quality comprises five factors: utility, diversity, interactivity, aesthetics, and interest. Utility means the degree of effectiveness and efficiency of a website that allow users to achieve their goal in the website (Yang et al., 2005). Currency means the degree to which the latest information is provided through continuous modifications and uploads (DeLone & McLean, 2003). Accuracy means the degree to which the information that is provided in the website is certain and correct (Corbitt, Thanasankit, & Yi, 2003; Jarvenpaa & Todd, 1996). Interest refers to the degree to which the information or issues that the users are interested in are provided (Corbitt et al., 2003).

Service quality is composed of five factors: searchability, diversity, interactivity, aesthetics, and connectivity. Searchability means the time it takes to search for particular information in a website (Yang et al., 2005). Diversity means the degree to which diverse functions are provided by freely combining shared extended functions within a website (Parasuraman et al., 1988; Parasuraman et al., 1991). Interactivity refers to the degree of ease of having meaningful exchanges among communication participants within a website (Harris, Baron, & Parker, 2000). Aesthetics means the degree of effectiveness of a websites' selection of colors and fonts in generating a proper ambiance suitable to the pur-

pose of the website (Semeijn, Van Riel, Van Birgelen, & Streukens, 2005; Zeithaml et al., 2000). Finally, connectivity refers to the degree to which interactive communication channels connected with SNS are provided (Yang & Fang, 2004).

System quality is divided into two factors: security and stability. Security refers to the degree of safety of personal information on a website (Yang et al., 2005), whereas stability means the consistency or the speed of website's response and processing time (Ranganathan & Ganapathy, 2002; Yang et al., 2005).

Users' decision-making variables were divided into users' perceived responses and action variables, while perceived responses were divided into attitude, trust, and satisfaction. Attitude means the degree of favorable responses to various information and properties existing within the websites of educational institutions (Anderson & Srinivasan, 2003; Davis, 1989). Trust means the degree of belief and conviction about various information and properties existing within the website (Mayer et al., 1995; Wang & Emurian, 2005). Satisfaction refers to the sense of gratification felt via information and properties within a website during the use (Morgan & Hunt, 1994; Oliver, 1980).

The action variables are divided into word of mouth/purchase and return visit intention. Word of mouth/purchase refers to the degree of willingness to recommend online course

(Table 1) Operational Definition of the Variables and Measurement Items

Variables	Operational Definition	Measurement Items	Researcher		
Information quality	Utility	The degree of effectiveness and efficiency with which the users are provided with the information needed to achieve a particular purpose	Necessary information can be received selectively. Interesting information is provided. The information provided can be actively utilized. The information provided individually is useful.	Bailey & Pearson(1983), King & Epstein (1983), Yang et al. (2005)	
		Recentness	The degree of maintaining the latest news by continuously updating the registration	The information provided is always the latest. The information provided is regularly updated.	Chuan-Chuan Lin & Lu (2000), DeLone & McLean (2003)
			Accuracy	The degree to which the provided information is correct and certain	The information provided is accurate. There are no contradictions among the information items provided.
		Interest		The degree to which issues causing interest at all times is provided, or how intriguing the provided information is	Interesting information is provided. Fun information is provided. Pleasurable information is provided. Information that induces immersion is provided.
Independent variables	Searchability		How fast a particular information is searched and retrieved	The users can easily move to their desired page. The desired information can be easily retrieved. The site map and site index functions are convenient to use.	Bailey & Pearson(1983), Iivari & Koskela(1987), Yang et al. (2005)
		Diversity	The degree to which diverse functions are provided by freely combining the shared extended functions	It is good that there is an opinion exchange function, such as real-time counseling. It is good that there is an information-sharing function among the users. It is good that the website allows the users to post diverse opinions and experiences.	Parasuraman et al. (1988), Song & Zahedi(2005)
	Service quality		Interactivity	The degree of meaningful exchanges among the communication participants	Interactive communication is possible. Users' opinions are conveyed rather well. Conversation with the operator is rather easy.
		Aesthetics		The degree of appropriately conveying the feelings suitable to the atmosphere and purpose of the website through colors and fonts	The website is attractive. The website uses color appropriately. I am satisfied with the design of the website. The font used in the website is appropriate. The necessary multimedia (pictures, videos, etc.) are appropriately used.
System quality	Connectivity		The degree of providing interactive communication channels connected with SNS	It is good that the service support connected with SNS, such as Facebook, is provided. The connection with SNS functions such as Facebook is efficient.	Choi & Lee(2013), Yang & Fang (2004)
		Security	The degree to which personal information in the website that is being operated is safely protected	It is safely protected from hacking. The IDs and passwords are safely protected. The personal credit information is safely protected.	Bhattacharjee & Sanford(2006), Jarvenpaa & Todd(1996), Yang et al. (2005)
	Stability		The degree to which the responding and processing speed of the website is regular and fast	The access to the website is fast. The access to the website is stable. The website page loading speed is fast. The website page loading speed is stable.	Ranganathan & Ganapathy (2002), Yang et al. (2005)

〈Table 1〉 Operational Definition of the Variables and Measurement Items (continue)

Variables		Operational Definition	Measurement Items	Researcher	
Dependent variables	Attitude	The degree of positive responses felt by the users towards the various properties existing within the website	As I use the website, I develop good emotions.	Anderson & Srinivasan (2003), Davis (1989)	
			As I use the website, I develop a positive feeling towards it.		
			As I use the website, I get the impression that it is good.		
	Perceived response	Trust	The degree of belief or conviction felt by the users about the various properties existing within the website	The website meets users' expectations.	Mayer et al. (1995), Wang & Emurian (2005)
				The website meets users' demands.	
				The website inspires users' trust.	
	Satisfaction	The degree of satisfaction felt by the users with the various properties existing within the website	I am satisfied with the overall information offered in the website.	Morgan & Hunt (1994), Oliver (1980)	
			I am satisfied with the overall service of the website.		
			I am satisfied with the overall system of the website.		
	Loyalty	Word of mouth/purchase	The degree to which the users recommend the purchase of goods (online course registration) to other people, and to which the users themselves purchase their desired goods	I am interested in doing word of mouth/purchase through the website.	Chuan-Chuan Lin & Lu (2000) Lee & Lee(2010)
I am interested in doing word of mouth/purchase regularly through the website.					
I will recommend the website to other people.					
Return visit intention	The degree to which the high quality of the website fascinates the users and makes them want to visit and use the site regularly	I am interested in visiting the website again.	Chuan-Chuan Lin & Lu (2000), Liao & Cheung (2001)		
		If there is an event or a community within the website, I will visit it again.			
		I will recommend the website to other people.			

registration to other people, and their own willingness to purchase through the website (Chuan-Chuan Lin & Lu, 2000). Return visit intention means the degree of desire to continuously visit and utilize the website after the initial visit (Chuan-Chuan Lin & Lu, 2000; Liao & Cheung, 2001).

The above-mentioned discussions are summarized in Table 1.

IV. Analysis and Verification

4.1 Characteristics of data collection and samples

In this research, an offline questionnaire survey was conducted in one foreign-language educational institution in Suwon, Gyeonggi-do, South Korea from January 3, 2011 to January 28, 2011. The sample consisted of 400 respondents; twelve questionnaires were

(Table 2) Demographic Distribution

Division	Items	Frequency (people)	Percentage (%)	Division	Items	Frequency (people)	Percentage (%)
Gender	Male	188	48.5	Frequency of access	Once a month (more than)	338	87.1
	Female	200	51.5		Once every two weeks (more than)	22	5.7
Age	Teens	34	8.8		Once a week (more than)	22	5.7
	Twenties	332	85.6		2-3 times a week (more than)	6	1.5
	Thirties	18	4.6	Frequency of use	Once a month (more than)	26	6.7
	Forties	2	0.5		Once every two weeks (more than)	2	0.5
Above fifties	2	0.5	Once a week (more than)		8	2.1	
Academic level reached	Middle school	12	3.1		2-3 times a week (more than)	44	11.3
	High school	96	24.7	4-5 times a week (more than)	80	20.6	
	College	24	6.2	6 times a week (more than)	228	58.8	
	University	246	63.4	Hours of use	30 minutes (less than)	32	8.2
	Graduate school	10	2.6		0.5-1 hour (less than)	42	10.8
Career	Student	336	86.6		1-2 hours (less than)	144	37.1
	Preschooler	2	.5		2-3 hours (less than)	90	23.2
	Specialized/administrator	10	2.6		3-4 hours (less than)	38	9.8
	Office job	14	3.6		4-5 hours (less than)	12	3.1
	Service/sales	2	0.5	5-6 hours (less than)	2	0.5	
	Housewife	4	1.0	6 hours (more than)	28	7.2	
Lecture attended	Others	20	5.2	Period of use	6 months (less than)	6	1.5
	English conversation	66	17.0		6 months -1 month (less than)	2	0.5
	Japanese conversation	32	8.2		1-2 years (less than)	6	1.5
	Chinese conversation	26	6.7		2-3 years (less than)	4	1.0
	TOEIC	214	55.2		3-4 years (less than)	4	1.0
	TOEFL	22	5.7		4-5 years (less than)	12	3.1
	TEPS	4	1.0		5-6 years (less than)	6	1.5
	IELTS	2	0.5		6 years (less than)	348	89.7
	English grammar	4	1.0		Of the 400 collected questionnaires, 388 (97%) were considered useful for analysis.		
	More than two subjects	18	4.6				

excluded for insincere or incomplete responses, resulting in a total of 388 questionnaires for analysis.

The respondents' demographic characteristics, such as their ages, genders, educational backgrounds, and website access frequencies, are shown in Table 2.

4.2 Factor and reliability analyses

To verify the reliability and validity of the survey data, reliability analysis (exploratory factor analysis) was conducted. More specifically, factor analysis was conducted using component analysis and Varimax rotation was conducted to verify the validity of the composition concepts used in the questionnaire. Reliability was verified via Cronbach's α analysis. Verification was confirmed through factor loading, eigenvalue, and other methods.

The reliability analysis confirming the validity of the composition concepts used in the questionnaire resulted in the Cronbach's α values shown in Table 3, 4 and 5.

Reliability analysis is a method used to evaluate the latent factors explaining the interrelations of the observation variables, assuming that all the common factors are inter-related, or to explore the various aspects of the given data and to describe the valuable characteristics of and valuable information about the said data (Chae, 2001). If all the constructs are greater than 0.6, the esti-

mated reliability value can be confirmed, and the reliability is considered favorable. This study's data displayed Cronbach's α values of greater than 0.6, confirming a high reliability. To examine the independent variables first, information quality showed the following Cronbach's α values: utility, $\alpha = .912$; recentness, $\alpha = .793$; accuracy, $\alpha = .697$; and interest, $\alpha = .936$. Service quality, on the other hand, showed the following Cronbach's α values: searchability, $\alpha = .824$; diversity, $\alpha = .805$; interactivity, $\alpha = .751$; aesthetics, $\alpha = .890$; and connectivity, $\alpha = .906$. As these values are all greater than 0.7, the reliability is considered high. System quality showed Cronbach's values for security ($\alpha = .920$) and stability ($\alpha = .918$) that are both greater than 0.9, so its reliability is considered very high. The Cronbach's α values for attitude ($\alpha = .924$), trust ($\alpha = .880$), satisfaction ($\alpha = .896$), word of mouth/purchase ($\alpha = .880$), and return visit intention ($\alpha = .788$) are all greater than 0.7, so its reliability is considered high.

In the factor analysis, analysis by construct was conducted, and the questions were selected in such a way as to have one factor. For determining the number of factors, the method that selects "the eigenvalue greater than 1 as the number of factors" was used. To select questions that can explain with one factor among the questions applicable to the constructs (information quality, service quality, system quality, attitude, trust, satisfaction,

(Table 3) Results of the Independent-Variable Factor and Reliability Analyses
(Website quality)

Variables	Factors											Cronbach's α	
	1	2	3	4	5	6	7	8	9	10	11		
Information quality	Utility 1	.836	.187	.104	.137	.152	.132	.026	.115	.117	.034	.072	.912
	Utility 2	.801	.192	.060	.227	.166	.012	.073	.163	.090	.014	.140	
	Utility 3	.820	.082	.043	.263	.090	.181	.085	.118	.031	.057	.101	
	Utility 4	.754	.089	.221	.247	.075	.121	.131	.032	.052	.110	.160	
	Recentness 1	.232	.793	.210	.192	.028	.040	.095	.172	.019	.079	.129	.793
	Recentness 2	.281	.767	.053	.260	.172	.057	.113	.066	.098	.096	.042	
	Accuracy 1	.212	.332	.682	.178	.061	.138	.002	.219	-.023	.152	.064	.697
	Accuracy 2	.144	.067	.839	-.050	.075	.001	.068	.100	.078	.156	.142	
	Interest 1	.276	.150	.022	.762	.184	.149	.056	.241	.092	.037	.146	.936
	Interest 2	.246	.153	.045	.786	.235	.093	.102	.152	.212	.019	.128	
	Interest 3	.261	.148	.021	.806	.210	.138	.090	.185	.164	.032	.146	
	Interest 4	.228	.124	.054	.779	.101	.106	.155	.230	.019	.011	.167	
Service quality	Searchability 1	.200	.033	-.007	.171	.788	.227	.038	.172	-.011	.121	.171	.824
	Searchability 2	.098	.115	.091	.188	.789	.144	.116	.155	.118	.154	.116	
	Searchability 3	.175	.066	.126	.267	.674	.003	.190	.201	.170	-.018	.085	
	Diversity 1	.102	.038	.215	.087	.202	.703	.355	.025	.046	.121	.139	.805
	Diversity 2	.169	.095	.012	.158	.165	.749	.107	.207	.277	.102	.101	
	Diversity 3	.242	-.013	-.016	.229	.059	.645	.173	.206	.263	.142	.194	
	Interactivity 1	.174	.164	-.082	.144	.234	.327	.614	.217	.155	.011	.209	.751
	Interactivity 2	.114	.213	.051	.188	.103	.245	.734	.218	.125	.129	.108	
	Interactivity 3	.085	-.116	.491	.101	.127	.144	.594	.111	.109	.214	.144	
	Aesthetics 1	.197	.045	.039	.261	.166	.182	.338	.642	.068	.120	.183	.890
	Aesthetics 2	.125	.163	.026	.055	.176	.063	.160	.799	.134	.064	.238	
	Aesthetics 3	.101	.067	.127	.131	.153	.072	.067	.817	.177	.019	.138	
Aesthetics 4	.009	.074	.126	.223	.052	.043	.002	.800	-.019	.061	.078		
Aesthetics 5	.171	-.043	.053	.194	.111	.218	.094	.601	.262	.178	.198		
Connectivity 1	.144	.095	.046	.201	.131	.319	.092	.230	.761	.158	.134	.906	
Connectivity 2	.121	.041	.083	.210	.139	.213	.199	.242	.786	.156	.172		
System quality	Security 1	.059	.124	.052	-.003	.064	.096	.035	.085	.155	.872	.173	.920
	Security 2	.062	.010	.101	.056	.053	.080	.098	.126	.078	.892	.199	
	Security 3	.039	.036	.173	.014	.101	.080	.077	.039	.011	.874	.190	
	Stability 1	.173	.099	-.025	.141	.140	.073	.033	.151	.202	.145	.808	.918
	Stability 2	.162	.010	.071	.120	.067	-.006	.155	.169	.142	.240	.790	
	Stability 3	.087	.083	.081	.119	.101	.199	.019	.209	-.005	.123	.858	
	Stability 4	.048	.022	.184	.133	.085	.120	.147	.134	-.003	.191	.820	

Note: The factors whose eigenvalue is greater than 1 after Varimax rotation were extracted, and the cumulative coefficient of the explained variance by factor is 80.499%.

〈Table 4〉 Results of the Dependent-Variable Factor and Reliability Analyses
(Perceived response)

Variables	Factors			Cronbach's α
	1	2	3	
Attitude 1	.903	.258	.185	.924
Attitude 2	.860	.292	.290	
Attitude 3	.750	.338	.356	
Perceived response	Trust 1	.284	.806	.880
	Trust 2	.250	.806	
	Trust 3	.379	.745	
Satisfaction 1	.286	.328	.779	.896
Satisfaction 2	.240	.297	.852	
Satisfaction 3	.240	.265	.831	

Note: The factors whose eigenvalue is greater than 1 after Varimax rotation were extracted, and the cumulative coefficient of the explained variance by factor is 83.925%.

〈Table 5〉 Results of the Dependent-Variable Factor and Reliability Analyses
(Loyalty)

Variables	Factors		Cronbach's α	
	1	2		
WOM/purchase 1	.882	.182	.880	
WOM/purchase 2	.914	.187		
WOM/purchase 3	.783	.366		
Loyalty	Return visit intention 1	.353	.773	.788
	Return visit intention 2	.051	.869	
	Return visit intention 3	.471	.710	

Note: The factors whose eigenvalue is greater than 1 after Varimax rotation were extracted, and the cumulative coefficient of the explained variance by factor is 77.246%.

word of mouth/purchase, and return visit intention), factor analysis through Varimax rotation, among the principal factor analysis methods, was performed.

In general, if the factor load (the degree of correlation between two items) is greater

than 0.4, the variable is regarded as a significant variable, and if it is greater than 0.5, the variable is regarded as a very important variable (Chae, 2001). The concrete results of the factor analysis are presented in Table 3, 4 and 5. In the results of the in-

dependent-variable factor analysis, information quality was made up of utility, composed of four items: currency, two items: accuracy, two items: and interest, four items. Service quality is made up of searchability, composed of three items: interactivity, three items: aesthetics, five items: and connectivity, two items. System quality is made up of security, composed of three items, and stability, four items. Eigenvalue refers to the degree of variance that the factor can explain, and the eigenvalues of the two factors were both greater than 1. The variance that these two factors could explain was found to be 80.499%.

In the results of the dependent-variable factor analysis, attitude, trust, and satisfaction were all composed of three items. In the same way, each word of mouth/purchase under loyalty was composed of three items. The eigenvalues were all greater than 1, and the variance that these factors could explain was found to be 83.925% and 77.246%.

4.3 Correlation analysis

The variables that were used for analysis were information quality, service quality, system quality, perceived responses (attitude, trust, and satisfaction), and loyalty (word of mouth/purchase and return visit intention). Each of these variables is composed of subordinate questions, and the reliability and validity of these variables were sufficiently

confirmed, as above. The correlations between these variables are composed of the sums of the applicable subordinate questions.

Table 6 shows the correlations between the variables. Perceived responses as dependent variables - attitude, trust, and satisfaction - have high correlation with service quality. The loyalty-dependent variables - word of mouth/purchase and return visit intention - also have a high correlation with service quality.

And it was found that information quality and service quality had the highest correlation ($r=.685, p < .01$), and information quality and word of mouth/purchase had the lowest correlation ($r=.401, p < .01$). And in the correlation analysis between the independent variables and the dependent variables, all show significant correlations in the level of greater than $p=0.1$.

4.4 Hypothesis test

The objective of this study was to analyze all effects pertaining to the quality of a website (information, service and system), perceived response (attitude, trust and satisfaction), and loyalty (word of mouth/purchase and return visit intention) per each sub-factor. However, there is a limitation because such application of model requires too many parameter estimates that results in an overfitting of the structural equation model. This significantly reduces the goodness-of-

〈Table 6〉 Results of the Correlation Analysis of the Variables

Variables	Average	Standard deviation	01	02	03	04	05	06	07	08
01 Information quality	3.139	.632	1							
02 Service quality	3.060	.588	.685**	1						
03 System quality	3.184	.621	.453**	.576**	1					
04 Attitude	2.924	.753	.453**	.631**	.464**	1				
05 Trust	2.991	.717	.541**	.665**	.466**	.685**	1			
06 Satisfaction	3.161	.706	.498**	.675**	.506**	.624**	.693**	1		
07 WOM/purchase	2.908	.775	.401**	.601**	.342**	.477**	.468**	.488**	1	
08 Return visit intention	3.118	.729	.339**	.553**	.465**	.581**	.548**	.512**	.580**	1

Note: * $p < 0.05$, ** $p < 0.01$

fit, as well as increasing the chances of error. Hence, multiple regression analysis was employed using SPSS 12.0 to verify this study's theories.

4.4.1 Website quality and attitude

Multiple-regression analysis was conducted with information quality, service quality, and system quality as the independent variables, and attitude as the dependent variable. Goodness of fit of the model was significant ($F=9.264$, $p < 0.01$). The utility of information quality had no significant effect on attitude ($\beta = -.022$, $p > 0.10$), and currency ($\beta = .020$, $p > 0.10$) and accuracy ($\beta = .071$, $p > 0.10$) had no significant

effect on it either. Interest, however, was found to have a significant effect on attitude ($\beta = .158$, $p < 0.01$). Hence, Hypothesis 1-1 was only partially accepted. In terms of service quality, searchability ($\beta = .124$, $p < 0.01$), diversity ($\beta = .080$, $p < 0.10$), interactivity ($\beta = .113$, $p < 0.05$), aesthetics ($\beta = .214$, $p < 0.01$), and connectivity ($\beta = .230$, $p < 0.01$) all had significant effects on attitude. Thus, Hypothesis 2-1 was accepted. In terms of system quality, security ($\beta = .044$, $p > 0.1$) had no significant effect on attitude, but stability ($\beta = .218$, $p < 0.01$) did. Thus, Hypothesis 3-1 was only partially accepted. These results are summarized in Table 7.

(Table 7) Results of the Multiple-Regression Analysis of Website Quality and Attitude

Dependent variable	Independent variable	Beta	T	F	Whether the hypothesis is accepted or rejected		
Attitude	Information quality	Utility	-.022	-0.484	9.264***	1-1-1	Rejected
		Recentness	.020	0.431		1-1-2	Rejected
		Accuracy	.071	1.542		1-1-3	Rejected
		Interest	.158	3.447***		1-1-4	Accepted
	Service quality	Searchability	.124	2.705***		2-1-1	Accepted
		Diversity	.080	1.741*		2-1-2	Accepted
		Interactivity	.113	2.476**		2-1-3	Accepted
		Aesthetics	.214	4.683***		2-1-4	Accepted
		Connectivity	.230	5.026***		2-1-5	Accepted
	System quality	Security	.044	0.970		3-1-1	Rejected
Stability		.218	4.755***	3-1-2	Accepted		
Model	R = .462	R ² = .213					

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

4.4.2 Website quality and trust

Multiple-regression analysis was conducted with information quality, service quality, and system quality as the independent variables, and trust as the dependent variable. Goodness of fit of the model was significant ($F=12.432$, $p < 0.01$). Utility ($\beta=.195$, $p < 0.01$), accuracy ($\beta=.165$, $p < 0.01$), and interest ($\beta=.135$, $p < 0.01$) had significant effects on trust, but currency ($\beta=.035$, $p > 0.1$) did not. Thus, Hypothesis 1-2 was only partially accepted. In terms of service quality, searchability ($\beta=.218$, $p < 0.01$) and aesthetics ($\beta=.338$, $p < 0.01$) had a significant effect on trust, but diversity ($\beta=-.008$, $p > 0.1$), interactivity ($\beta=.039$, $p > 0.1$), and connectivity ($\beta=.061$, $p > 0.1$) did not. Thus, Hypothesis 2-2 was only

partially accepted. In terms of system quality, security ($\beta=.082$, $p < 0.1$) and stability ($\beta=.090$, $p < 0.01$) both had significant effects on trust. Thus, Hypothesis 3-2 was accepted. The results are summarized in Table 8.

4.4.3 Website quality and satisfaction

Multiple-regression analysis was conducted with information quality, service quality, and system quality as the independent variables, and satisfaction as the dependent variable. Goodness of fit of the model was significant ($F=12.274$, $p < 0.01$). Utility ($\beta=.137$, $p < 0.01$) and interest ($\beta=.085$, $p < 0.1$) of information quality had significant effects on satisfaction, but currency ($\beta=.043$, $p > 0.1$) and accuracy ($\beta=.042$, $p > 0.1$) did not. Thus,

〈Table 8〉 Results of the Multiple-Regression Analysis of Website Quality and Trust

Dependent variable	Independent variable	Beta	t	F	Whether the hypothesis is accepted or rejected		
Trust	Information quality	Utility	.195	4.424***	12.432***	1-2-1	Accepted
		Recentness	.035	0.786		1-2-2	Rejected
		Accuracy	.165	3.729***		1-2-3	Accepted
		Interest	.135	3.052***		1-2-4	Accepted
	Service quality	Searchability	.218	4.942***		2-2-1	Accepted
		Diversity	-.008	-0.174		2-2-2	Rejected
		Interactivity	.039	0.893		2-2-3	Rejected
		Aesthetics	.338	7.655***		2-2-4	Accepted
		Connectivity	.061	1.372		2-2-5	Rejected
	System quality	Security	.082	1.853*		3-2-1	Accepted
		Stability	.090	2.043**		3-2-2	Accepted
	Model	R = .516	R ² = .267				

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Hypothesis 1-3 was only partially accepted. In terms of service quality, searchability ($\beta = .168$, $p < 0.01$), diversity ($\beta = .087$, $p < 0.1$), interactivity ($\beta = .269$, $p < 0.01$), aesthetics ($\beta = .227$, $p < 0.01$), and connectivity ($\beta = .108$, $p < 0.05$) all had significant effects on satisfaction. Thus, Hypothesis 2-3 was accepted. In terms of system quality, security ($\beta = .175$, $p < 0.01$) and stability ($\beta = .182$, $p < 0.01$) both had significant effects on satisfaction. Thus, Hypothesis 3-3 was accepted. The results are summarized in Table 9.

4.4.4 Website quality and word of mouth/purchase

Multiple-regression analysis was conducted

with information quality, service quality, and system quality as the independent variables, and word of mouth/purchase as the dependent variable. Goodness of fit of the model was significant ($F = 15.899$, $p < 0.01$). Utility ($\beta = .112$, $p < 0.01$), currency ($\beta = .155$, $p < 0.01$) and accuracy ($\beta = .115$, $p < 0.01$) of information quality had significant effects on word of mouth/purchase, but interest ($\beta = .055$, $p > 0.1$) had none. Thus, Hypothesis 4-1 was only partially accepted. In terms of service quality, searchability ($\beta = .328$, $p < 0.01$), diversity ($\beta = .167$, $p < 0.01$), interactivity ($\beta = .189$, $p < 0.01$), aesthetics ($\beta = .223$, $p < 0.01$), and connectivity ($\beta = .191$, $p < 0.01$) all had significant effects on word of mouth/purchase. Thus, Hypothesis 5-1 was

〈Table 9〉 Results of the Multiple-Regression Analysis of Website Quality and Satisfaction

Dependent variable	Independent variable	Beta	T	F	Whether the hypothesis is accepted or rejected		
Satisfaction	Information quality	Utility	.137	3.088***	12.274***	1-3-1	Accepted
		Recentness	.043	0.973		1-3-2	Rejected
		Accuracy	.042	0.956		1-3-3	Rejected
		Interest	.085	1.927*		1-3-4	Accepted
	Service quality	Searchability	.168	3.798***		2-3-1	Accepted
		Diversity	.087	1.957*		2-3-2	Accepted
		Interactivity	.269	6.080***		2-3-3	Accepted
		Aesthetics	.227	5.123***		2-3-4	Accepted
		Connectivity	.108	2.449**		2-3-5	Accepted
	System quality	Security	.175	3.948***		3-3-1	Accepted
		Stability	.182	4.105***		3-3-2	Accepted
	Model	R = .514	R ² = .264				

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

accepted. In terms of system quality, stability ($\beta = .073$, $p < 0.1$) had a significant effect on word of mouth/purchase, but security ($\beta = .043$, $p > 0.1$) did not. Thus, Hypothesis 6-1 was only partially accepted. The results are summarized in Table 10.

4.4.5 Website quality and return visit intention

Multiple-regression analysis was conducted with information quality, service quality, and system quality as the independent variables, and return visit intention as the dependent variable. Goodness of fit of the model was significant ($F = 11.259$, $p < 0.01$). Accuracy ($\beta = .137$, $p < 0.01$) of information quality had

a significant effect on return visit intention, but utility ($\beta = .034$, $p > 0.1$), currency ($\beta = -.050$, $p > 0.1$), and interest ($\beta = .044$, $p > 0.1$) did not. Thus, Hypothesis 4-2 was only partially accepted. In terms of service quality, searchability ($\beta = .035$, $p > 0.1$) and diversity ($\beta = .052$, $p > 0.1$) had no significant effects on return visit intention, but interactivity ($\beta = .210$, $p < 0.01$), aesthetics ($\beta = .260$, $p < 0.01$), and connectivity ($\beta = .110$, $p < 0.01$) did. Thus, Hypothesis 5-2 was accepted. In terms of system quality, security ($\beta = .185$, $p < 0.01$) and stability ($\beta = .248$, $p < 0.01$) both had significant effects on return visit intention. Thus, Hypothesis 6-2 was accepted. The results are summarized in Table 11.

〈Table 10〉 Results of the Multiple-Regression Analysis of Website Quality and Word of Mouth/Purchase

Dependent variable	Independent variable	Beta	t	F	Whether the hypothesis is accepted or rejected		
WOM/purchase	Information quality	Utility	.112	2.623***	15.899***	4-1-1	Accepted
		Recentness	.155	3.646***		4-1-2	Accepted
		Accuracy	.115	2.689***		4-1-3	Accepted
		Interest	.055	1.295		4-1-4	Rejected
	Service quality	Searchability	.328	7.697***		5-1-1	Accepted
		Diversity	.167	3.928***		5-1-2	Accepted
		Interactivity	.189	4.441***		5-1-3	Accepted
		Aesthetics	.223	5.231***		5-1-4	Accepted
		Connectivity	.191	4.479***		5-1-5	Accepted
	System quality	Security	.043	1.018		6-1-1	Rejected
Stability		.073	1.721*	6-1-2	Accepted		
Model	R = .563	R ² = .317					

Note: * p < 0.1, ** p < 0.05, *** p < 0.01

〈Table 11〉 Results of the Multiple-Regression Analysis of Website Quality and Return Visit Intention

Dependent variable	Independent variable	Beta	T	F	Whether the hypothesis is accepted or rejected		
Return visit intention	Information quality	Utility	.034	0.752	11.259***	4-2-1	Rejected
		Recentness	-.050	-1.121		4-2-2	Rejected
		Accuracy	.137	3.061***		4-2-3	Accepted
		Interest	.044	0.973		4-2-4	Rejected
	Service quality	Searchability	.035	0.780		5-2-1	Rejected
		Diversity	.052	1.158		5-2-2	Rejected
		Interactivity	.210	4.686***		5-2-3	Accepted
		Aesthetics	.260	5.811***		5-2-4	Accepted
		Connectivity	.110	2.453**		5-2-5	Accepted
	System quality	Security	.185	4.147***		6-2-1	Accepted
Stability		.248	5.552***	6-2-2	Accepted		
Model	R = .498	R ² = .248					

Note: * p < 0.1, ** p < 0.05, *** p < 0.01

4.4.6 Perceived responses and word of mouth/purchase

The relationship between perceived responses

and word of mouth/purchase, with attitude, trust, and satisfaction (the perceived responses) as the independent variables was examined through multiple-regression analysis. Goodness

of fit of the model was significant ($F=31.057$, $p < 0.01$). Attitude ($\beta=.261$, $p < 0.01$), trust ($\beta=.201$, $p < 0.01$), and satisfaction ($\beta=.295$, $p < 0.01$) all had significant effects on word of mouth/purchase. Thus, Hypothesis 7-1 was accepted. The results are summarized in Table 12.

4.4.7 Perceived responses and return visit intention

The relationship between perceived responses

and return visit intention was examined via multiple regression analysis with attitude, trust, and satisfaction (the perceived responses) as the independent variables, and return visit intention as the dependent variable. Goodness of fit of the model was significant ($F=43.348$, $p < 0.01$). Attitude ($\beta=.349$, $p < 0.01$), trust ($\beta=.290$, $p < 0.01$), and satisfaction ($\beta=.217$, $p < 0.01$) all had significant effects on return visit intention. Thus, Hypothesis 7-2 was accepted. The results are summarized in Table 13.

〈Table 12〉 Results of the Multiple-Regression Analysis of users' perceived Responses and Word of Mouth/Purchase

Dependent variable	Independent variable	Beta	t	F	Whether the hypothesis is accepted or rejected	
WOM/purchase	Attitude	.261	5.697***	31.057***	7-1-1	Accepted
	Trust	.201	4.397***		7-1-2	Accepted
	Satisfaction	.295	6.433***		7-1-3	Accepted
Model	R = .442 R ² = .195					

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

〈Table 13〉 Results of the Multiple-Regression Analysis of users' perceived Responses and Return Visit Intention

Dependent variable	Independent variable	Beta	t	F	Whether the hypothesis is accepted or rejected	
Return visit intention	Attitude	.349	7.909***	43.348***	7-2-1	Accepted
	Trust	.290	6.581***		7-2-2	Accepted
	Satisfaction	.217	4.918***		7-2-3	Accepted
Model	R = .503 R ² = .253					

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

V. Conclusion

5.1 Research summary

This research examined the diverse factors that can improve the quality of educational institution websites, with reference to previous researches. The factors selected in this research were subdivided and analyzed empirically. The results of the analyses are summarized as follows.

First, there were seven factors that had significantly positive (+) effects on attitude based on ① interest in information quality: ② searchability, diversity, interactivity, aesthetics, and connectivity in service quality; and ③ stability in system quality and connectivity in service quality. Because people in their twenties are the main users of the websites of foreign-language educational institutions, it is considered that the sharing of channels, such as social networking services (SNS), is an important factor in attitude formation. Many factors related to information quality had no significant effects on attitude, but the sub-factors of service quality all had positive effects. Thus, service quality could have absolute superiority and importance over attitude.

Second, there were seven factors that had significantly positive (+) effects on trust based on ① utility, accuracy, and interest in information quality: ② searchability and aes-

thetics in service quality; and ③ security, stability in system quality, and aesthetics in service quality. As approximately 85% of the respondents in this research were students in their twenties, the results of this research appear to reflect the tastes of an applicable pool of users. Course registration is one of the most important reasons for visiting the website, so the website must be easy to navigate and must be aesthetically superior.

Third, there were nine factors that had significantly positive (+) effects on satisfaction based on ① utility and interest in information quality: ② searchability, diversity, interactivity, aesthetics, and connectivity in service quality: ③ security and stability in system quality, and interactivity in service quality. By the nature of a foreign-language educational institution, it can be seen that satisfaction with the website is high when immediate responses to students' questions and problems before and after course registration are available. Particularly, course registration for renowned lecturers and famous lectures should be made quickly within a limited time, and fast interactivity enables students to sign up for desired online courses, increasing satisfaction.

Fourth, there were nine factors that had significantly positive (+) effects on word of mouth/purchase based on ① utility, recentness, and accuracy in information quality: ② searchability, diversity, interactivity, aesthetics, and connectivity in service quality; and ③

stability in system quality and searchability in service quality. In word of mouth/purchase related to registering for courses, fast and convenient searchability within a website is more important than any other factor. This seems to be the reason behind searchability having the most significant effect on word of mouth/purchase.

Fifth, there were six factors that had significantly positive (+) effects on return visit intention based on ① accuracy in information quality; ② interactivity, aesthetics, and connectivity in service quality; and ③ security, stability in system quality, and aesthetics in service quality. This shows that users' perceptions and memories of a website are most affected by the website's aesthetic factors. In fact, if websites are similar in service quality, aesthetic factors are the most influential factor in forming a preference for one over another. In other words, because many foreign-language educational institutions offer similar curricula, similar levels of instructors, and similar operating systems, differentiation should be attained via aesthetics: a highly aesthetic website motivates users to visit the website more frequently.

Sixth, it was found that attitude, trust, and satisfaction had significantly positive (+) effects on word of mouth/purchase: satisfaction had the most significant effect on word of mouth/purchase while attitude had the largest effect on return visit intention. Actual

satisfaction appears to be the most telling factor leading to online course registration, and trust also leads to loyalty to the website. Furthermore, users' attitudes play the most important role in encouraging return visits to the website.

Seventh, currency in information quality had no significant effects on the subdivided factors of perceived responses (attitude, trust, and satisfaction): thus, it was rejected. This factor appears to have no effect on perceived responses because the users who have frequented superior-quality websites seems to consider currency as a basic (so not particularly important) property of a website.

Eighth, interest in information quality was rejected because it had no significant effects on the subdivided factors of loyalty (word of mouth/purchase, return visit intention). This seems to be due to the fact that online course registration is not based on interest but on requirement: thus accuracy of information would be a more influential factor in users' selection of courses. That is, interestingness of information alone cannot lead to direct word of mouth/purchase or revisit if satisfaction or trust in the information is low.

5.2 Significance and implications

This research is of academic and practical significance. First, it has an academic significance in that it has developed a website

quality measurement tool. While most previous studies presented the effects of one or two particular qualities within information, service and system qualities on users' perceived responses or purchase (Ahituv, 1980; Bailey & Pearson, 1983; Chen et al., 2002; English, 2005; Girard et al., 2002; King & Epstein, 1983; Livari, 1987; Swaminathan et al., 1999), this paper took an integrated approach in probing the relationship between website quality and users' responses.

Previous researches focused only on some users' responses. For example, they dealt with the effects of website quality on trust (Doney & Cannon, 1997; Jarvenpaa et al., 2000), satisfaction (Eroglu & Harrell, 1986; Oliver, 1980; Yi, 1990), or purchase (Liu & Arnett, 2000; Rice, 1997; Seddon & Kiew, 2007). Due to such narrow focus, it was difficult to conduct an integrated study on the effects of website quality on users' responses. This study, however, conceptually integrated the effects that website quality could exert on users' various responses, systematized the effects of website quality, and established relationships between the responses.

Second, this paper is significant because previous researches on website quality focused only on websites that act as a market, such as shopping malls (DeLone & McLean, 1992), whereas this research examined the types of websites with primary functions of information searching as well as purchase. In

other words, this research examined the factors that enhanced the quality of the websites for acquiring information in comparison to that of websites for purchase.

Furthermore, this research provides practical business implications that can be useful for educational institutions in developing and establishing operational strategies. In other words, educational institutions can develop and operate their websites effectively and efficiently based on relationships among information quality, service quality, system quality, and users' perceived responses and degree of loyalty. For example, a newly established educational institution that desires to obtain customers' trust should develop and operate their website with a focus on the following seven factors: utility, accuracy, and interest in information quality, searchability and aesthetics in service quality, and security and stability in system quality. On the other hand, an educational institution focused primarily on inducing purchase and word of mouth should develop and operate their website with a focus on the following nine factors: utility, currency, and accuracy in information quality, searchability, diversity, interactivity, aesthetics, connectivity in service quality, and stability in system quality. The results of this research are particularly useful for the efficient development of website quality with limited resources.

5.3 Limitations of this research, and future research direction

The limitations of this research and suggestions of directions for future studies are as follows.

First, in the questionnaire survey, the age distribution leaned too much towards subjects in their twenties. The main users of educational institution websites are clearly teenagers and people in their early twenties. However, their guardians, who most likely are in their thirties to fifties, are also potential users; furthermore, their responses are likely to be different from that of teenagers and people in their twenties. For example, the responses of the actual users of the service are most highly correlated with service quality whereas that of the guardians can be correlated with other website qualities. That is, these two groups have different purposes of using the website. Thus, future research should also develop methods to embrace and examine the responses from these age groups, as well as the primary user group.

Second, this research only examined one foreign-language educational institution. This is a limitation as there are difficulties in generalizing the results to apply to a larger pool of websites. Thus, future studies should also probe the effects on the websites of a variety of educational institutions and secure the external validity at the same time.

Finally, focusing only on an educational institution impedes the application of results to the websites of enterprises and other non-educational organizations. Therefore, future studies should expand the scope of application by investigating the websites of enterprises and other institutions.

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웹사이트 품질요인이 사용자의 지각된 반응 및 충성도에 미치는 영향

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요 약

우리 주변에는 아직도 웹사이트를 단순히 홍보수단 정도로 보는 교육기관들이 적지 않다. 웹사이트는 이러한 교육기관과 고객을 이어주는 주된 접점으로서 효과적인 마케팅 툴이 됨은 물론, 교육기관의 전반적인 업무 프로세스의 효율성을 높여줄 수 있는 e-비즈니스의 실현도구로 자리매김해 가고 있다는 사실을 인식하는 것이 매우 중요하다. 이를 위해서는 먼저 웹사이트의 품질이 이용자들의 만족도를 높이고, 사이트 재방문을 유도하는데 충분한 수준인지 점검할 필요가 있을 것이다. 다시 말하면, 웹사이트의 수준 높은 품질로 인해 이용자들의 태도, 신뢰 등에 긍정적인 영향을 미치게 하여 방문빈도를 높여주어 이탈을 1차적으로 사전에 예방함은 물론 사이트 내에서 발생할 수 있는 구전 및 구매효과도 함께 높일 수 있는 계기를 마련해야 한다는 것이다.

웹사이트의 품질이란 이용자가 온라인상에서 원하는 정보를 편리하게 받아볼 수 있도록 사이트가 얼마나 잘 구성되어 있는가를 의미한다고 할 수 있다. 따라서 본 연구는 교육기관의 사이트 품질을 높여줄 수 있는 다양한 요인들을 기존 웹사이트와 관련된 많은 선행연구들을 기초로 하여 찾고, 본 연구에서 선정된 각 요인들을 세부화 하여 이를 실증적으로 검증하고자 하였다.

이를 위해 본 연구는 경기지역에 위치한 외국어 교육기관 1곳을 선정하여 2011년 1월 3일부터 1월 28일까지 오프라인으로 설문조사를 실시하였고, 수집된 총 유효한 388부를 본 연구 분석 자료로 활용하였다. 그로 인한 분석결과는 다음과 같다.

첫째, 웹사이트의 품질요인으로는 정보 품질, 서비스 품질, 시스템 품질 등 크게 3개의 독립변수로 설정하였다. 세부적으로 살펴보면 정보 품질은 유용성, 최신성, 정확성, 흥미성 등 4개의 세부요인으로, 서비스 품질은 검색성, 다양성, 상호작용성, 심미성, 연계성 등 5개의 세부요인으로, 시스템 품질은 보안성, 안정성 등 2개의 세부요인으로 설정하였다.

둘째, 결과변수로는 태도, 신뢰, 만족 등 3개의 요인을 지각된 반응이라는 변수로 유형화하여 세부요인으로 설정하였고, 구전/구매, 재방문 등 2개의 요인을 충성도라는 변수로 유형화하여 세부요인으로 설정하였다.

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셋째, 태도에 유의미한 정(+)의 영향을 미치는 요인으로는 ①정보 품질의 흥미성, ②서비스 품질의 검색성, 다양성, 상호작용성, 심미성, 연계성, ③시스템 품질의 안정성 등 총 7개의 세부요인으로 나타났고, 서비스 품질의 연계성이 가장 많은 영향을 미치는 요인으로 분석되었다.

넷째, 신뢰에 유의미한 정(+)의 영향을 미치는 요인으로는 ①정보 품질의 유용성, 정확성, 흥미성, ②서비스 품질의 검색성, 심미성, ③시스템 품질의 보안성, 안정성 등 총 7개의 세부요인으로 나타났고, 서비스 품질의 심미성이 가장 많은 영향을 미치는 요인으로 분석되었다.

다섯째, 만족에 유의미한 정(+)의 영향을 미치는 요인으로는 ①정보 품질의 유용성, 흥미성, ②서비스 품질의 검색성, 다양성, 상호작용성, 심미성, 연계성, ③시스템 품질의 보안성, 안정성 등 총 9개의 세부요인으로 나타났고, 서비스 품질의 상호작용성이 가장 많은 영향을 미치는 요인으로 분석되었다.

여섯째, 구전/구매에 유의미한 정(+)의 영향을 미치는 요인으로는 ①정보 품질의 유용성, 최신성, 정확성, ②서비스 품질의 검색성, 다양성, 상호작용성, 심미성, 연계성, ③시스템 품질의 안정성 등 총 9개의 세부요인으로 나타났고, 서비스 품질의 검색성이 가장 많은 영향을 미치는 요인으로 분석되었다.

일곱째, 재방문에 유의미한 정(+)의 영향을 미치는 요인으로는 ①정보 품질의 정확성, ②서비스 품질의 상호작용성, 심미성, 연계성, ③시스템 품질의 보안성, 안정성 등 총 6개의 세부요인으로 나타났고, 서비스 품질의 심미성이 가장 많은 영향을 미치는 요인으로 분석되었다.

여덟째, 태도, 신뢰, 만족 요인은 구전/구매와 재방문에도 유의미한 정(+)의 영향을 미치는 것으로 나타났고, 구전/구매에는 만족이, 재방문에는 태도가 가장 많은 영향을 미칠 수 있는 요인인 것으로 확인되었다.

주제어: 웹사이트 품질, 정보 품질, 서비스 품질, 시스템 품질, 지각된 반응, 충성도