

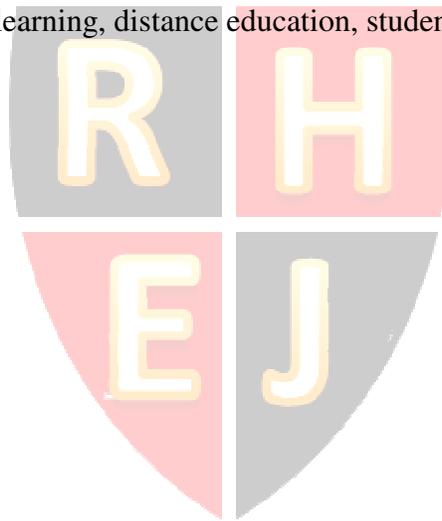
Student satisfaction with online learning: Lessons from organizational behavior

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ABSTRACT

Learning and educational effectiveness are national issues, and online education has become a major sub-topic during the last decade as enrollment in online courses continues to increase. Therefore, there is an increasing need to understand factors that affect student satisfaction with online learning and its impact on continued learning, retention, and student recruitment. This paper explores the relationship between the organizational behavior concepts of worker motivation and job satisfaction that might be useful in identifying links between job satisfaction and student satisfaction with online learning. Parallels between job satisfaction and student satisfaction are identified and a model is proposed for future research.

Keywords: Online learning, e-learning, distance education, student satisfaction, motivation



INTRODUCTION

Work is a necessary activity that most people must engage in for much of their lives to support themselves and their families; however, motivation and job satisfaction vary for both workers and specific types of work. Some workers are motivated by a sense of accomplishment, some by helping others, and others by personal fulfilment. Some people work because it helps them keep busy, or feel useful, or because it allows them to meet a lot of people, or because it provides opportunities to make new friends. Others like to work because they like doing a variety of tasks, experiencing new things, or because it offers the opportunity for improvement and learning. And some people like to work because it gives them power or influence over others.

Organizational behaviorists have found that personality, personal values, and psychological needs as well as other factors influence both the types of work people choose and the satisfaction they derive from work. The field of organizational behavior focuses on factors that influence job satisfaction for the purpose of improving worker satisfaction and thereby improving job performance.

Some aspects of working to complete a college degree can be viewed through the lens of organizational behavior theory, as this paper will explore. Educators are often challenged to motivate students to achieve college-level work in ways similar to those experienced by managers who seek to motivate employees. Student satisfaction can be viewed both as an outcome of the learning process and a requirement for successful learning. Student satisfaction is linked to improved academic performance as well as continued learning (Sloan, n.d.), the decision to take additional classes (Booker & Rebmon, 2005) and the recruitment of future students.

Online Learning

Educational effectiveness and learning are national issues, and online education has become a major topic in the last decade as higher education institutions change to favor distance education. Based on data from 2,500 colleges and universities, the annual Sloan Report describes recent online enrollment in significant numbers: Over 4.6 million students, mostly at the undergraduate level, were enrolled in at least one online course in 2008. As a percent of total enrollment, online enrollment has increased from 9.6 percent in 2002 to 25.3 percent in 2008 (Allen & Seaman, 2010)

Ubiquitous technology, growth in internet usage, and student need for courses that meet their schedules and circumstances drive a growth rate for online courses and online programs that currently exceeds the growth rate for overall higher education (Allen & Seaman, 2010). (Howell, Williams & Lindsay, 2003).

The Sloan Consortium defines a traditional course as one using no online technology; a web-facilitated course as one in which web-based technology is used to facilitate a face-to-face course; a blended/hybrid course as one in which a substantial portion of content is delivered online; and an online course as one in which most or all of the content is delivered online (Allen & Seaman 2008).

There are three compelling reasons for interest in student satisfaction. First, the Sloan Consortium's "Five Pillars of Quality Online Education," declares student satisfaction to be the most important key to continuing learning (Sloan, n.d.). And there is evidence that student satisfaction is positively related to retention and a decision to take one or more additional courses (Booker & Rebmon, 2005). Lastly, student satisfaction is important because satisfied students

represent a public relations asset for a college or university. If students are viewed as customers of college education, their satisfaction is important to recruitment efforts. There is therefore a need for more understanding of factors that affect student satisfaction with online learning.

Organizational Behavior

The field of organizational behavior (OB) is concerned with psychosocial, interpersonal, and behavioral dynamics in the workplace. Because OB and education have analogous desired outcomes (i.e., job performance and student performance, job satisfaction and student satisfaction, employee retention and student retention), this paper considers how OB concepts may provide insight into factors that affect student satisfaction. The focus of this paper is an examination of organizational variables relating to the motivation and satisfaction of people at work to consider how those variables may impact the design of online education and student satisfaction with online courses. In light of the desired outcomes of student satisfaction and student retention, a question that should interest faculty members teaching in online environments and administrators concerned with retention is: Can organizational behavior performance management practices be used to impact student satisfaction with online learning?

This paper attempts to answer this question with a literature review that explores potential linkages between motivation and worker satisfaction concepts and theories of organizational behavior and student satisfaction. The result is a research model that may be useful to analyze the structure and content of online courses to identify characteristics of course design that result in student satisfaction. The findings will help guide the development of course management practices for online courses.

The remainder of this paper is organized as follows. Section 2 reviews literature on student satisfaction. Section 3 reviews literature on the OB concepts of motivation and job satisfaction. Section 4 provides a summary of conclusions and suggestions for future research.

STUDENT SATISFACTION

In response to institutional concerns about the quality of courses and programs and the need to understand student perceptions, many authors have examined the topic of student satisfaction with their higher educational experience. The literature includes research on student satisfaction with traditional, hybrid, and online courses for graduate and undergraduate students across diverse populations of students. For this paper, 34 studies of student satisfaction were reviewed to identify determinants generally recognized as important to student perception of overall satisfaction with the learning experience. Appendix A provides a summary of the studies organized by course format that range from traditional to online, and various hybrid formats.

In the review of literature for this paper, it was noted that many studies on student satisfaction fail to define satisfaction. Of 34 studies reviewed, only six provide definitions of student satisfaction. Of those definitions, most are grounded in marketing literature (Elliott & Shin, 2002; Mai, 2005; O'Leary & Quinlan, 2007; Thurmond, Wambach, Connors and Frey, 2002); one is grounded in social cognitive theory (Wu, Tennyson & Hsia, 2010).

In research on student satisfaction in a traditional learning environment that incorporates online elements, Sweeney and Ingram (2001) define satisfaction as, "the perception of enjoyment and accomplishment in the learning environment" (p. 57). Reporting on satisfaction in a blended or hybrid learning environment, Wu et al. (2010) define satisfaction as "the sum of a student's

behavioral beliefs and attitudes that result from aggregating all the benefits that a student receives from using the blended system” (p. 157).

In research on student satisfaction with online learning, definitions of student satisfaction are scarce. O’Leary and Quinlan (2007) provide a marketing definition of student satisfaction as “an emotional response that can be induced by actual product, service, or process quality or some combination of product and service quality” (p. 135). In this study, a SERVQUAL marketing instrument is used to measure satisfaction. A similar marketing approach is taken by Thurmond et al. (2002) that describes student satisfaction as “a concept that reflects outcomes and reciprocity that occur between students and an instructor” (p. 176).

The Sloan Consortium, an association of institutions and organizations committed to quality online education, provides this definition of student satisfaction: “Students are successful in the learning experience and are pleased with their experience” (Moore, 2009, p. 74). This is comparable to the definition provided by Sweeney and Ingram (2001): “The perception of enjoyment and accomplishment in the learning environment,” in that both focus on accomplishment and success in learning, and pleasure and enjoyment with the experience.

The current paper adopts the definition of student satisfaction as the perception of enjoyment and accomplishment in the learning environment (Sweeney & Ingram, 2001) such that satisfaction is perceived to result from accomplishment as well as enjoyment. Therefore, student satisfaction is both an enjoyable and a successful experience.

Theories used in research on student satisfaction

In the review of the literature for the current study, it was noted that most research on student satisfaction uses atheoretical attitude-based questionnaires to measure satisfaction. Of 34 studies summarized in Appendix A, only six consider a theory in relationship to student satisfaction. Several use OB theories and measures for student satisfaction.

In research in a traditional learning environment, DeShields, Kara and Kaynak (2005) use Herzberg’s two-factor theory (motivators/satisfiers, hygiene factors/dissatisfiers) to examine student satisfaction. In this study, survey data from business students show faculty performance and classes are key factors (motivators) for satisfaction). Also considering student satisfaction in a traditional learning environment, Cao, Griffin and Bai (2009) link constructivism (i.e., learning occurs through interaction) with three types of interaction identified from distance education literature: learner-instructor, learner-learner, learner-content. In that study, synchronous interaction had a strong effect on student satisfaction with course web sites.

An early study on factors affecting student satisfaction by Rosseau (1976) links concepts from OB to student satisfaction and the desire to stay in school, citing Hackman and Oldham’s (1975) theory of motivation. This theory links task characteristics to three psychological states: experienced meaningfulness, experienced responsibility for work outcomes, and knowledge of results; these states lead to increased performance, lower absenteeism and turnover, and higher satisfaction. Noting that Hackman and Oldham’s (1975) theory “holds for individuals who value responsibility and challenging work” (p.4), Rosseau (1976) finds task characteristics to be positively related to student satisfaction and the desire to stay in school. Task characteristics describes task identity (a whole piece of work), skill variety, autonomy, feedback, dealing with others (interaction), variety, learning, and task significance.

In research on student satisfaction in a hybrid or blended learning environment, Wu et al. (2010) use social-cognitive theory (Bandura, 1986) citing its relevance to understanding and

predicting human behavior and identifying methods by which behavior may be changed. In that study, interaction provided the greatest contribution to performance expectations which provided the greatest contribution to learner satisfaction.

Determinants of student satisfaction

The research reviewed for the current paper identifies determinants of student satisfaction that may be classified in six categories: faculty, institution, individual student factors, interaction/ communication factors, course factors, and learning environment factors. This classification shown in Table 1 (Appendix) is supported by the Sloan Consortium's quality in online education framework (Moore, 2009) that identifies five factors that result in overall student satisfaction with online learning: 1) Satisfaction with interaction with peers and instructors; 2) A match between actual and expected learning experiences; 3) Satisfaction with advising, registration, and access to materials that is as good as that found on the traditional campus; 4) Satisfactory orientation for how to learn online; and 5) Outcomes of online learning that are useful for career and profession development as well as academic development.

In summary, student satisfaction with online learning is linked to interaction and communication, course design, the learning environment, and individual student factors of computer self-efficacy and the ability to control individual learning pace. Additionally, Moore (2009) identifies useful outcomes and a satisfactory orientation for how to learn online as factors that result in student satisfaction with online learning.

JOB SATISFACTION

Job satisfaction has been a topic of sustained interest for many years. The study of job satisfaction is of interest to many because it is associated with important attitudes, behaviors and organizational effectiveness. Job satisfaction is linked to mental and physical health and can be a predictor of organizational citizenship (Bateman & Organ, 1983), absenteeism (Locke, 1983), turnover (Griffeth, Hom & Gaertner, 2000), and productivity (performance). An early definition of job satisfaction was offered by Locke as: "The pleasurable emotional state resulting from the perception of one's job as fulfilling or allowing the fulfillment of one's important job values" (Locke 1976 p. 1342).

A more succinct definition is offered by Spector (1997), who reminds readers that some people love to work while others do not and work only because they must. This author defines job satisfaction as "the degree to which people like their jobs" (p. vii). This paper adopts a commonly accepted definition of job satisfaction as "a positive feeling about one's job resulting from an evaluation of its characteristics" (Robbins & Judge, 2009, p. 31).

While noting that job satisfaction is "one of the most frequently studied concepts in work and organizational psychology," Bussing, Bissels, Fuchs and Perrar (1999, p. 1000) claim it is "one of the most theory-free concepts measured against methodological standards in the field of organizational research." In this respect, research on job satisfaction is similar to research on student satisfaction that uses atheoretical attitude-based questionnaires to measure satisfaction.

Theories of motivation and job satisfaction

Theories of motivation form the basis for models of job satisfaction. Among highly regarded O.B. motivational theories are Maslow's (1943) need-hierarchy theory, Vroom's

(1964) expectancy theory, Locke's (1976) goal setting theory, Locke and Latham's (1990) high expectancy theory, Adams' (1965) equity theory, and McClelland's (1961) theory of needs. Models of job satisfaction include Herzberg's two-factor theory (Herzberg, Mausner & Snyderman, 1959), and Hackman and Oldham's (1975) job characteristics model. These theories and models are considered here to identify factors that affect job satisfaction that may be relevant to student satisfaction.

According to Maslow (1943), individuals are motivated to satisfy a basic set of needs that are hierarchical in nature. That is, physiological needs, safety or security needs, social needs, esteem needs, and self-actualization needs are fulfilled sequentially. Lower level needs (physiological, safety) are satisfied externally while higher level needs (social, esteem, self-actualization and autonomy) are satisfied internally. The major premise of Maslow's theory is that as needs become satisfied they lose their potential as a motivator. The contribution of Maslow's theory to organizational behavior is the premise of appealing to individual needs to motivate employees. The idea is to link employee needs to desired performance. For example, to appeal to an employee's need for esteem, a manager would communicate opportunities for recognition for satisfactory job performance in order to improve the employee's sense of self-worth.

Expectancy theory proposed by Vroom (1964) focuses on outcomes rather than individual needs stating that effort, performance and motivation must be linked in order for a person to be motivated. The theory is formulated: $Motivation = Valence \times Expectancy$. Valence is the importance that an individual places on the expected outcome; expectancy is the belief that increased effort leads to increased performance. The third construct is instrumentality, the belief that a good performance results in a valued outcome. According to expectancy theory, an employee can be motivated to a higher level of performance when he or she believes effort leads to performance, performance leads to organizational rewards, and organizational rewards lead to the satisfaction of personal goals. This theory is perceived by some to be of limited practical use because of issues with the performance-reward relationship such that rewards may be linked to other factors such as seniority and skill level.

The equity theory of motivation concerns the perception of fairness. The premise of equity theory (Adams, 1965) is that individuals are motivated by their beliefs about the fairness of a reward structure relative to the inputs required to receive the reward. That is, people compare job inputs (e.g., effort, loyalty, hard work commitment) and outcomes (e.g., recognition, salary, benefits) relative to those of others. This theory argues that positive outcomes (high levels of motivation) result when employees perceive their treatment to be fair. A criticism of equity theory is that it does not recognize individual differences in perception.

A theory of motivation developed by Locke (1968) proposes that intentions to work toward a goal are a major source of work motivation (i.e., goals and intentions control human behavior). According to this theory, specific goals lead to higher performance than general goals. The variables relevant to the goal-performance relationship are feedback (knowledge of results), expectancies, self-efficacy and goal commitment. In later research on work motivation and satisfaction, Locke and Latham (1990) present a model that depicts high goals and high expectancy (self-efficacy) leading to high performance, which leads to rewards, satisfaction, and commitment to future goals. They offer that high goals and high self-efficacy lead individuals to persist longer and exert more effort. They further suggest this model offers insight that should be valuable to educators due to the widely recognized fact that American students are less educated and less capable than their Asian counterparts. Locke and Latham (1990) claim their model

supports the reason for this disparity, that much less is demanded of American students in terms of a shorter academic year, shorter work week, shorter work day, less time in class doing actual work, and less homework.

McClelland's motivational needs theory (1961) describes three types of motivational needs that are found in varying degrees in all employees: the need for achievement, the need for affiliation, and the need for authority and power. According to this theory, people with a high need for achievement have a strong need for feedback on their achievement and prefer to work alone, while those with a high need for affiliation need relationships with others and prefer work that provides personal interaction. People with a high need for power prefer to organize the efforts of others and seek opportunities to lead.

These theories of motivation have informed a number of models of job satisfaction. One such model that may be relevant to student satisfaction is Herzberg's (1959) two-factor theory of job attitudes. This theory asserts that factors that lead to job satisfaction are different from factors that lead to job dissatisfaction such that motivating factors (i.e., achievement, recognition, the work itself, responsibility, advancement, growth) lead to satisfaction while hygiene factors (company policy and administration, supervision, work conditions, pay, relationships with superiors and peers) lead to dissatisfaction. Motivating factors that determine satisfaction are intrinsic to the work itself while hygiene factors that determine dissatisfaction are extrinsic to the work. Herzberg's theory differentiates between physical and psychological needs and identifies cognitive growth as a major psychological need that can be fulfilled through work. Herzberg suggests that work be "enriched" to provide employees with the opportunity for psychological growth and offers "vertical job loading" as a method of job enrichment.

A second model of job satisfaction that may be relevant to student satisfaction is Hackman and Oldham's (1975) job characteristics model. This model offers a strategy for change that can help organizations achieve their goals for higher quality work, and at the same time, meet the needs of employees for a more meaningful and satisfactory work experience. In this model, the core job dimensions of skill variety, task identity, task significance, autonomy, and feedback affect three psychological states: meaningfulness of work, responsibility for outcomes, and knowledge of results. Hackman and Oldham propose that increased levels of these three psychological states lead to higher employee motivation, higher satisfaction, and higher performance, and lower absenteeism and lower turnover. Hackman and Oldham offer "job enrichment" as a way to address employee growth needs with action steps that lead to increased motivation, satisfaction and productivity.

While the theories of motivation and models of job satisfaction evaluated for the current paper provide guidance on motivating and managing workers in a traditional (face-to-face) environment, it is not clear how these theories may apply to remote workers. Research on telecommuting and the management of employees who are located remotely from their managers, highlights differences such that traditional managerial practices are no longer appropriate (Tapscott & Capston, 1993). Beyers (1995) describes the changing nature of management for virtual organizations that requires electronic interaction and increasingly direct communication.

In research on virtual organizations, Staples, Hulland and Higgins (1999) explore factors that influence the effectiveness of remote workers, including employee performance as well as employee attitudes toward the remote work and the organization. In this study, self-efficacy theory (Bandura, 1977) is offered as a suitable theory for understanding what organizations and managers can do to improve the effectiveness of remote workers who have considerable

autonomy. Self-efficacy theory identifies four sources of information that are used by individuals when forming self-efficacy judgments: past experience, vicarious experience, evaluative feedback, and physiological/emotional states (Bandura, 1977). Additionally, self-efficacy judgments are positively influenced by vicarious experience (modelling) and evaluative feedback (Bandura, 1977).

Additional research by Staples (2001) identifies communication as a significant factor in performance and job satisfaction for remote workers. This study finds more frequent communication between remote workers and their managers results in higher levels of cognition-based trust that leads to increased performance and higher job satisfaction. Cognition-based trust describes trust based on evidence of competence and responsibility.

Determinants of job satisfaction

Factors that affect job satisfaction may be classified as individual factors or organizational factors. Table 2 (Appendix) summarizes factors that impact job satisfaction as identified by the theories of motivation and job characteristics models reviewed for the current study.

CONCLUSIONS

Job satisfaction and student satisfaction are similar in that both imply a positive feeling or sense of enjoyment; both imply a sense of accomplishment; and many of the factors that lead to job satisfaction are the same factors that lead to student satisfaction. Factors affecting job satisfaction include relationships (Herzberg, 1975) and feedback (Hackman & Oldham, 1975; Locke & Latham, 1990); factors affecting student satisfaction include interaction (Cao, et al., 2009; Su et al., 2010; and Stein et al., 2005) and communication (Parayitam et al., 2007; Wuensch et al., 2008; O'Leary & Quinlan, 2007; Dennen et al., 2007; and Staples, 2010). Self-efficacy is related to job satisfaction in a traditional work environment (Locke & Latham, 1990); information technology self-efficacy and remote work self-efficacy are related to job satisfaction in a remote work environment (Staples et al., 1999); and computer self-efficacy is related to student satisfaction in an online learning environment (Puzziferro, 2008; Wu et al., 2010).

To summarize, student satisfaction with online learning is linked to interaction and communication, course design, the learning environment, and individual student factors of computer self-efficacy and the ability to control an individual learning pace. Additionally, Moore (2009) identifies useful outcomes and a satisfactory orientation for how to learn online as factors that result in student satisfaction with online learning. The determinants of student satisfaction with online learning are strikingly similar to the determinants of job satisfaction. Team management practices that impact job satisfaction are similar to interaction and communication factors that impact student satisfaction with online learning. Job design factors are similar to course design factors, and work environment factors similar to learning environment factors. Autonomy is similar to the ability to control one's learning pace in online learning. Self-efficacy factors are relevant to both job satisfaction and student satisfaction with online learning.

Table 3 (Appendix) summarizes motivation factors that affect satisfaction across three environments: a traditional work environment, a remote work environment, and an online learning environment. In traditional and remote work environments, external factors are controllable by management. In an online learning environment, external factors are controllable by instructors and administrators.

The internal and external factors common to traditional and remote work environments and online learning environments suggest that management techniques and practices used in organizations to improve job satisfaction and performance can perhaps be transferred to and used effectively in online learning to improve student satisfaction and performance. Moreover, managerial actions that improve self-efficacy in work environments may be effective in improving self-efficacy in an online learning environment, thereby improving student satisfaction and achievement.

Figure 1 illustrates a proposed research model that links management practices from OB motivation theories to student satisfaction with online learning that leads to the desired outcomes that include continuing learning, student achievement, retention, and an improved institutional image (i.e., positive public relations). The model suggests that specific management practices may prove effective in improving student satisfaction with online learning. For example, designing course content to make coursework challenging, interesting and relevant is parallel to managing aspects of the work itself (Herzberg, 1959) and to job enrichment concepts of skill variety and task significance (Hackman & Oldham, 1975) and task complexity (Locke & Latham, 1990). Additionally, the model suggests that communication and interaction practices in online learning are parallel to the management practices of direction and feedback (Hackman & Oldham, 1975; Locke & Latham, 1990) and modeling best practices (Staples, 1999). Moreover, self-efficacy may be improved by specific management practices of training to improve remote work self-efficacy (Staples, 1999).

The model is based on limited evidence from research on remote work environments; therefore, additional research is required to confirm links between management practices in traditional environments that effectively impact satisfaction and performance and management practices in remote work environments as they may impact satisfaction and performance in that environment. Additionally, future research will survey students in both environments to test propositions relating to the effectiveness of OB management practices in improving student satisfaction.

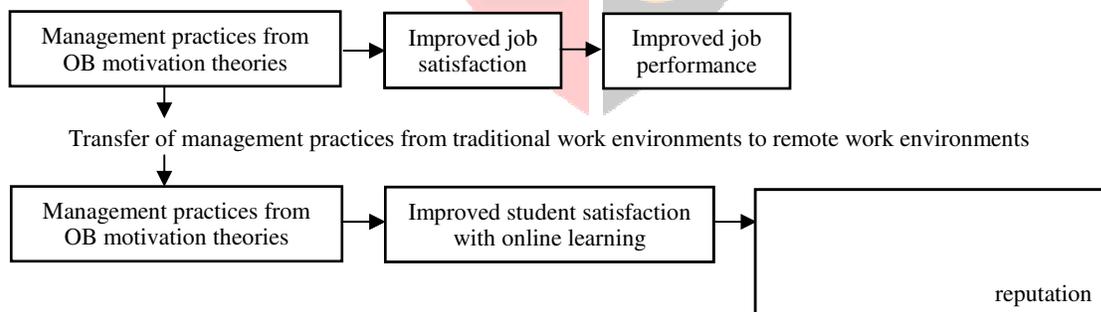


Figure 1. Parallel model of OB motivation in online learning

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APPENDIX

Table 1. Summary of determinants of student satisfaction

Determinants of Student Satisfaction		Course Format	Studies
1	Interaction	Traditional	Cao, Griffin & Bai (2009)
	Interaction	Hybrid	Wu, Tennyson & Hsia (2010)
	Interaction	Online	Stein, Wanstreet, Calvin, Overtoom & Wheaton (2005)
	Communication	Traditional	Parayitam, Desai & Phelps (2007)
	Communication	Traditional & online	Wuensch, Azia, Kishore & Tabrizi (2008)
	Communication	Online	O'Leary & Quinlan (2007)
	Communication	Online	Dennen, Darabi & Smith (2007)
2	Course design	Online	Stein, Wanstreet, Calvin, Overtoom & Wheaton (2005)
	Course content	Traditional	Parayitam, Desai & Phelps (2007)
	Course content	Online	Walker & Kelly (2007)
	Courses	Traditional	DeShields, Kara & Kaynak (2005)
3	Learning environment	Online	Thurmond, Wambach, Connors & Frey (2002)
4	Computer self-efficacy	Online	Puzziferro (2008)
	Computer self-efficacy	Online	Wu, Tennyson & Hsia (2010)
	Ability to set individual learning pace	Hybrid	Beard & Harper (2002)
	Learning strategies	Online	Puzziferro (2008)
5	Faculty performance	Traditional	DeShields, Kara & Kaynak (2005)
	Knowledgeable faculty	Traditional	Elliott & Shin (2002)
6	Impression of school Impression of quality education	Traditional	Mai (2005)
	University image Perceived value	Traditional	Alves & Raposo (2007)

Table 2. Summary of determinants of job satisfaction in a traditional environment

Determinants of Job Satisfaction		
Individual Factors	High expectancy, self-efficacy Effort, persistence Goal commitment Ability	Locke & Latham (1990)
	Achievement Recognition The work itself Responsibility Advancement Growth	Herzberg (1968)
	Autonomy Responsibility for outcomes	Hackman & Oldham (1975)
Organizational Factors	High goals Feedback Task complexity Rewards	Locke & Latham (1990)
	Recognition Policy and administration Supervision Work conditions Rewards Relationships	Herzberg (1975)
	Task significance Feedback	Hackman & Oldham (1975)

Table 3. Motivation factors in work and online learning environments

Environment	Studies	External Factors	Internal Factors
Traditional Work Environment	Herzberg (1959)	The work itself Advancement Supervision Work conditions Relationships	Responsibility Achievement
	Hackman and Oldham (1975)	Skill variety Task significance Feedback	Responsibility Task identity
	Locke and Latham (1990)	Specific high goals Direction Feedback Task complexity	High expectancy Self-efficacy Effort Persistence Task strategies Goal commitment
Remote Work Environment	Staples (1999, 2001)	Modeling best practices Interaction Communication Training to improve remote-work self-efficacy	IT self-efficacy Remote work self-efficacy
Online Learning Environment	Stein et al. (2005) Wu et al. (2010)	Interaction	
	O’Leary & Quinlan (2007) Dennen et al. (2007)	Communication	
	Stein et al. (2005)	Course design, content	
	Thurmond et al. (2002)	Learning environment	
	Puzziferro (2008)		Computer self-efficacy Learning strategies
	Moore (2009)	Orientation to online learning Useful outcomes	

Table 4. Summary of Recent Studies of Student Satisfaction

Course Format	Studies	Definition of Student Satisfaction	Theory	Method	Research Results
Traditional	Elliott & Shin (2002)	"Refers to the favorability of a student's subject evaluation of the various outcomes and experiences associated with education"	None	1805 survey responses from undergraduates. Used SSI inventory (Noel-Levitz) to survey 1805 undergraduates Calculated an overall satisfaction score by measuring 20 educational attributes.	Compared student satisfaction (SS) based on single item response to SS based on multi-item response to conclude a composite score for overall SS has more diagnostic value. Identified highly significant variables that impact overall SS: top four are excellence of instruction in major; able to get desired classes; knowledgeable advisor; knowledgeable faculty
Traditional	Mai (2005)	"Satisfaction is typically measured as an overall feeling or as satisfaction with elements of the transaction"	None	332 survey responses from students in US and UK (comparison of SS between US and UK using SERVQUAL)	Overall impression of school and overall impression of quality of education are strong predictors of SS
Traditional	DeShields, Kara and Kaynak (2005)	Not defined	Herzberg's two-factor theory (satisfiers and motivators)	143 survey responses from undergraduate business students	Faculty and classes are major factors affecting SS, but not advising staff
Traditional	Alves and Raposo (2007)	Not defined	None	2687 survey responses from students in Portugal	University's image (not defined) influences satisfaction as does perceived value
Traditional	Parayitam, Desai, Phelps (2007)	Not defined	None	4196 survey responses from undergraduate and graduate students	Perceived communication style and course content positively related to SS with teacher and perceived teacher effectiveness
Traditional	Moro-Egido and Panades (2010)	Not defined	None	Survey responses from 116 students recently graduated with Bachelor's degrees in Spain	Part-time students (with part-time jobs) experience lower SS than full-time students; women are more satisfied than men; higher grades are related to higher SS
Traditional	Gibson, A. (2010)	Not defined	None	Summary of 11 previous studies on business student satisfaction	Identified 9 significant factors affecting SS with higher educational experience
Traditional using course web site	Cao, Griffin and Bai (2009)	Not defined	Constructivism – individuals construct their own knowledge by interaction with the world.	102 survey responses from 102 students (88% CIT majors plus CIT minors)	Synchronous online interaction had strong effect on SS
Traditional using online tutorials	Sweeney and Ingram (2001)	"the perception of enjoyment and accomplishment in the learning environment"	None	42 survey responses	SS highest in traditional tutorial
Traditional and online	Johnson, Aragon, Shaik and Palma-Rivas (1999)	Not defined	None	38 survey responses from graduate students	No significant different for overall course rating
Traditional and online	Navarro and Shoemaker (2000)	Not defined	None	Graduate and undergraduate students	No significant difference in SS

Traditional and online	Ponzurick, France and Logar (2000)	Not defined	None	143 survey responses from MBA students	Traditional students were more satisfied (course content, course format); online students were less satisfied
Traditional and online	Ryan (2000)	Not defined	None	Survey responses from 26 traditional and 14 online students	No significant difference in SS
Traditional and online	Wisn, Nazma and Pscherer (2001)	Not defined	None	567 survey responses from graduates (an alumni survey)	For students taking 1-3 online courses, SS higher in face-to-face courses; for students taking 4 or more online courses; SS higher in online course.
Traditional and online	Block, Udermann, Felix, Reineke and Murray (2008)	Not defined	None	37 survey responses from students	SS similar in both online and traditional (no significant difference)
Traditional and online	Gibson, J.W. (2008)	Not defined	None	38 survey responses from [14] traditional and [24] online students	No difference in SS
Traditional and online	Wuensch, Azia, Kishore and Tabrizi (2008) Wuensch (2009)	Not defined	None	1601 survey responses from students at 46 institutions in 26 states	Reports "the unanticipated finding was that frequency of email contact with the instructor was the best predictor of satisfaction"
Traditional and online	Karatas and Simsek (2009)	Not defined	None	60 survey responses from 30 traditional and 30 online students	No difference in SS
Traditional, online and hybrid	Black (2002)	Not defined	None	116 survey responses from students	Hybrid course had higher SS.
Traditional, online and hybrid	Lim, Kim, Chen and Ryder (2008)	Not defined	None	Survey responses from 153 undergraduate students	Students in hybrid group had higher SS than those in traditional group
Traditional and hybrid	Powell (2007)	Not defined	None	190 survey responses from 90 students in hybrid and 100 students in traditional class	SS levels are similar (no significant difference)
Online and hybrid	Bequri, Chase and Bishka (2010)	Not defined	None	240 survey responses from undergraduate and graduate students	SS with online courses lower than SS with hybrid courses; higher SS with graduate students than undergraduate
Hybrid	Beard and Harper (2002)	Not defined	None	42 surveys responses from graduate students	Students satisfied with format that allowed them to set individual learning pace but dissatisfied with online interaction
Hybrid	Vamosi, Pierce and Slotkin (2004)	Not defined	None	2 sections of undergraduate students	Satisfaction with online portion of course was lower – difference was significant

Hybrid	Wu, Tennyson and Hsia (2010)	Satisfaction with blended e-learning system defined as “the sum of student’s behavioral beliefs and attitudes that result from aggregating all the benefits that a student receives from using the blended e-learning system.”	Social-cognitive theory (Bandura, 1986)	212 survey responses from [84] traditional and [128] online students in Taiwan who had opportunity to take hybrid course	Social interaction provides most contribution to performance expectations and learning climate, thus more contribution to learner satisfaction. Other determinants include computer self-efficacy, system functionality and content feature.
Online	Thurmond, Wambach, Connors and Frey (2002)	Quotes Guolla, 1999, “the concept of satisfaction reflects outcomes of reciprocity that occur between students and an instructor”	Input-Environment –Outcome model (Astin, 1992)	120 survey responses from graduate students	SS is influenced by online environment rather than student characteristics; students are generally satisfied with online learning; students more likely to work in online teams/groups likely to be less satisfied
Online	O’Leary and Quinlan (2007)	“An emotional response that can be induced by actual product, service, or process quality or some combination of product and service quality”	None	197 survey responses from online students using SERVQUAL to measure learner-instructor telephone interaction	Single telephone call at beginning of term had no effect on satisfaction
Online	Arbaugh (2001)	Not defined	None	390 survey responses from MBA classes to measure perception of course quality and likelihood of taking future courses via the internet.	Verbal immediacy (communication) and attitude toward course software positively associated with course satisfaction
Online	Richardson and Swan (2003)	Not defined	None	97 survey responses from online students	Perceived social presence yields satisfaction with instructor
Online	Stein, Wanstreet, Calvin, Overtom and Wheaton (2005)	Not defined	Moore’s (1993) theory of transactional distance	34 survey responses from online students	Satisfaction with course design (structure) and satisfaction with interaction positively related to satisfaction with knowledge gained
Online	Dennen, Darabi and Smith (2007)	Not defined	None	Review of rating guidelines on instructor and student perception of instructor actions that result in satisfaction	SS linked to interpersonal communication needs
Online	Walker and Kelly (2007)	Not defined	None	304 survey responses from undergraduate and graduate online students	Identified 4 significant factors: Satisfaction with reading assignments Ideal time for feedback Realistic time for feedback Satisfaction with length of program
Online	Puzziferro (2008)	Not defined	Self-efficacy (Bandura, 1997) and theory of self-regulated learning (Pintrich & deGroot, 1990)	815 survey responses from online students	Cognitive learning strategies and resource management strategies increase satisfaction with course
Online	Glass and Sue (2008)	Not defined	None	55 survey responses from undergraduate and graduate students	Students in online course were satisfied (82% rated course good or outstanding overall)

