Συνέδρια της Ελληνικής Επιστημονικής Ένωσης Τεχνολογιών Πληροφορίας & Επικοινωνιών στην Εκπαίδευση

7ο Πανελλήνιο Συνέδριο ΕΤΠΕ «Οι ΤΠΕ στην Εκπαίδευση»

ΕΤΠΕ

ΕΛΛΗΝΙΚΗ ΕΠΙΣΤΗΜΟΝΙΚΗ ΕΝΩΣΗ
ΤΕΧΝΟΛΟΓΙΩΝ ΠΛΗΡΟΦΟΡΙΑΣ
& ΕΠΙΚΟΙΝΩΝΙΩΝ ΣΤΗΝ ΕΚΠΑΙΔΕΥΣΗ

7ο Πανελλήνιο Συνέδριο ΕΤΠΕ
«Οι ΤΠΕ στην Εκπαίδευση»

Κόρινθος

23 - 26 Σεπτεμβίου 2010

ISSN : 2529-0916
ISBN : 978-960-88359-5-5

Teacher vs. student satisfaction with online learning experiences based on personality type

Maria D. Avgerinou

Teacher vs. student satisfaction with online learning experiences based on personality type

Maria D. Avgerinou
mavgerin@depaul.edu
DePaul University, Chicago, USA

Abstract

The purpose of this study is to investigate, compare, and explain effects of personality type on student and teacher satisfaction with the online learning experience. Data collection has involved one faculty and her two online, graduate classes at a Midwestern American university. Teacher and students' personality types were categorized with the use of an online version of the Myers-Briggs Type Indicator®. The Online Faculty Satisfaction Survey (OFSS) (Bolliger & Wasilik, 2009) was employed as a self-report measure of faculty satisfaction. Responses to a questionnaire with six subscales were analyzed in order to evaluate levels of student satisfaction with the instructor, technology, class set-up, interaction, outcomes, and overall satisfaction. Results indicate that learners experienced higher levels of satisfaction in the online environment than the faculty. The MBTI® data analysis recognizes and explains apparent different personality assumptions, behaviors and expectations concerning the design and delivery of online learning experiences.

Keywords: online learning, student satisfaction, teacher satisfaction

Personality Type

Personality is defined as an individual's combined characteristics (behaviors and emotions) and traits, and "a type is a characteristic model of a general attitude" (Jung, 1923, p. 612). Experts have identified personality factors as important in learning (Lawrence, 1993; Myers, McCaulley, Quenk, & Hammer, 2003). Many researchers have conducted research in order to understand how personality type influences learning. One of the instruments that has been used in educational research is the Myers-Briggs Type Indicator® (MBTI). It is designed to identify personal preferences on eight characteristics. These preferences are based on Jung's (1923) theory of *psychological types*. These are patterns in which individuals prefer to perceive and make judgments. According to Jung, introversion and extraversion are two *mechanisms*. He also identifies four basic psychological *functions* that can be classified into perception functions (sensation or intuition) and judgment processes (thinking or feeling). Myers and Briggs extended Jung's concept by adding a fourth dimension with two opposite poles: judging and perceiving (Lawrence, 1993). The MBTI has four dichotomous scales: (a) *E*xtraversion-*I*ntroversion, (b) *S*ensing-*IN*ntuition, (c) *T*hinking-*F*eeling, and (d) *J*udging-*P*erceiving. Avgerinou and Russell (2007) report that the MBTI has been validated in many cultures as an indicator of preferences for information and making decisions.

Student Satisfaction

Student satisfaction is defined as the perceived value of the learner with educational experiences in an educational setting (Astin, 1993), and is "the most important key to continue learning" (ADEC, n.d., para 5). Student satisfaction is one of the five pillars of

quality in online education together with learning effectiveness, access, faculty satisfaction, and institutional cost effectiveness (Sloan Consortium, 2002). Despite it being so important, it is at the same time a complex construct comprised of many factors (Wickersham & McGee, 2008). Student satisfaction is an important concept because it may ultimately lead to higher levels of motivation, engagement, learning, performance, and success (Sahin & Shelley, 2008; Wickersham & McGee, 2008).

In the online environment several factors influence student satisfaction, but according to Bolliger and Martindale (2004) instructor behavior, level of technology reliability, and interactivity are the most significant ones. Other important factors include student perceptions of task value and self-efficacy, social ability, instructional design issues, and quality of the delivery system and multimedia instruction (Liaw, 2008; Lin, Lin & Laffey, 2008). Perceived student satisfaction is influenced by computer anxiety, flexibility, variety in assessments, usefulness, and ease of use (Sun et al., 2008). Finally, learner characteristics are important factors in determining perceived learner satisfaction (Phipps & Merisotis, 1999).

Faculty Satisfaction

The American Distance Education Consortium defines faculty satisfaction as the perception that teaching online is effective and professionally beneficial (ADEC, n.d.). Bolliger and Wasilik (2009) point out that faculty satisfaction is a "complex issue that is difficult to describe and predict" (p. 105). Based on their recent research study surveying 102 online teaching faculty, Bolliger and Wasilik attributed faculty satisfaction to three categories of factors, namely, student-related, instructor-related, and institution-related. Of the aforementioned, the student-related factor with particular reference to active student involvement, satisfactory participation levels, and good communication with instructor, is presented as "the most important factor influencing satisfaction of online faculty" (p. 112).

Research Purpose and Questions

Ellis (2003) indicates that there is a need to determine if personality type is influential in the participation of students who are enrolled in online or more traditional courses. Researchers (Ausburn, 2004; Bishop-Clark, Dietz-Uhler & Fisher, 2006, 2007; Irani et al., 2003) point out that more research is needed in order to understand how individual differences and personality type relate to learners' preferences and perceptions in distance learning environments.

The purpose of this study is to investigate, compare, and explain effects of personality type on student and teacher satisfaction with the online learning experience (graduate level) at a Midwestern university in the U.S. The research questions are: (1) How satisfied are students in the online learning environment? (2) How satisfied is the instructor in the online learning environment? (3) What are the instructor's, and the learners' personality types? (4) What are the differences in student and teacher satisfaction in this environment based on personality type, and to what extent MBTI® can account for and explain them?

Research Methodology

It is important to note that this study has evolved out of a larger research project (Bolliger & Avgerinou, 2009) focusing on student satisfaction with online learning environments based on MBTI®, which spans three academic quarters at a Midwestern university (September 2008 through to May 2009), and includes an extended pool of research participants. The total

population for the current study consists of 44 students enrolled in two online graduate courses (Human Development, and Introductory Research) offered in the Fall quarter 2008.

Instruments

A shorter version of the MBTI scale is a Web-based instrument with 72 questions and can be accessed at http://www.humanmetrics.com/cgi-win/JTypes2.asp. Participants submitted their results to the instructor via threaded discussion posts. Learners were invited to complete an online student satisfaction questionnaire (SSQ) at the end of the quarter. The SSQ has 24 five-point Likert scale questions ranging from 1-*strongly disagree* to 5-*strongly agree* that address the following student satisfaction elements: (a) instructor, (b) technology, (c) course set up, (d) interaction, (e) outcomes, and (d) overall satisfaction. These items were derived directly from the literature addressing elements integral to student satisfaction in online environments. The instrument also includes three demographical questions and three open-ended questions. The SSQ was piloted prior to administering it to the sample. A total of 67 students completed the survey, and the initial internal reliability coefficient was .92. Once the SSQ was administered to participants in this study, the Cronbach alpha was recalculated and proved to be satisfactory (*a* = .91).

A research context-specific version of the Online Faculty Satisfaction Survey (OFSS) developed and validated by Bolliger and Wasilik (2009) was employed as a self-report measure of faculty satisfaction. The original survey includes 28 questions scored on a 4-point Likert Scale ranging from *4 strongly agree* to *1 strongly disagree*, four open-ended and four demographic questions. Survey Items reflect all three factors as identified by the literature, that is, student-related, instructor-related, and institution-related factors (see Faculty Satisfaction section above). The OFSS was administered to 102 online teaching faculty, and achieved a reliability score of a=.85. The adapted OFSS employed in this study, included only the 28 Likert-Scale questions.

Data analysis

The data collected with the SSQ was examined to ensure that all statistical assumptions were met. None of the cases had missing data. In order to examine for linearity, several bi-variate scatter-plots were generated and examined. Because the items on the questionnaire are on a 5-point Likert scale, all of the scatter-plots revealed abnormalities between the variables. After the examination of z scores, one case was deleted from the data set because it was an outlier.

Descriptive statistics were generated. Participants were grouped into four personality types expressed by four letters and eight opposite poles of four dichotomous scales. Several independent *t* tests and Chi-square tests will be conducted to evaluate whether individual differences will yield statistically significant differences once all of the data have been collected.

Results

Respondents

Of the 44 learners who were enrolled in either a human development course or an introductory research course offered by the school of education, 68.2% completed both the online MBTI instrument and the SSQ. The majority of students was female (75.9%), and

participants' ages ranged from 21 to 44 (M = 30.52). Thirty-one percent of respondents indicated they would not have been able to take the course had it not been offered online.

Research question 1: Student satisfaction

Survey responses: Participants experienced a high level of satisfaction with the instructor of the online courses (Table 1). The majority of respondents agreed or strongly agreed with items 3 (82.8%), 2 (82.7%), and 1 (69%). Most of the participants strongly disagreed or disagreed (75.8%) with item 4, a negative question. Responses to questions pertaining to the technology use in the courses were positive. Most learners indicated they agreed or strongly agreed with items 6 (89.7%), 7 (86.2%), and 5 (75.8%). The majority strongly disagreed or disagreed with a negatively worded question, item 8 (75.9%). Many students expressed a high level of satisfaction with items 10 (86.2%) and 9 (79.3%) on the course-set up scale. Fewer participants agreed or strongly agreed with item 12 (62.0%); however, even fewer students strongly disagreed or disagreed with item 11 (55.1%), a recoded question. Students were highly satisfied with their comfort of online participation. The majority agreed or strongly agreed with item 16 (82.7%). They were less satisfied with the quality of interaction because only 69.0% agreed or strongly agreed with item 13. Items 15 and 14 received lower ratings. Items on the outcomes scale received the highest ratings. Respondents indicated that they agreed or strongly agreed with 19 (93.1%), item 18 (86.2% after recoding), 20 (86.2%), and 17 (85.8%). Participants were highly satisfied overall with the course. The majority of individuals agreed or strongly agreed with item 24 (86.2%), 21 (75.9%), and 23 (72.4%). Almost 70% strongly disagreed or disagreed with item 22.

Discussion responses: Twenty-nine individuals responded to the open-ended question inviting comments for what learners thought was most satisfying about the course (Question 29). Eight students found it satisfying that they learned a lot about the topic, and four persons were satisfied with the required group work and collaboration. Three students responded they enjoyed learning about using educational technology, and three responses pertained to a feeling of satisfaction when a course project was completed well. The question "What would increase your satisfaction in taking this course?" (Question 30) yielded 28 comments. Six respondents indicated that nothing would increase their course satisfaction. Interestingly, four students suggested not including a group project, and three individuals would have liked to be provided with more detailed assignment descriptions.

Research question 2: Faculty satisfaction

Faculty responses to OFSS were recorded separately per each of the participating online courses, combined and presented in Table 2. Responses were identical for both courses. Despite the difference in course context, and student performance, overall it did appear that items representing institutional-related issues received consistently lower ratings by the instructor while those representing student and instructor-related issues received higher and more positive ratings. The instructor was overall satisfied with her teaching experience in both courses, but her dissatisfaction with institution-related factors did not allow her to enjoy the online experience as much as her students did.

Research question 3: Personality types

Twelve different personality types were represented in the student sample. The three types with the highest representation were: ENFJs (31.0%), ESFJs (13.8%), and INTJs (13.8%). A

larger proportion of the sample represented extraverts (69.0%), intuitive (62.1%), feelers (65.5%), and judgers (86.2%). The instructor's MBTI® is INTP.

Table 1. Means and standard deviations with scale items

Item	M	SD
1. Class assignments were clearly communicated to me	3.90	1.24
2. Feedback and evaluation of papers, tests, and other assignments was given in a timely manner	4.17	1.31
3. The instructor makes me feel that I am part of the class and belong	4.31	1.11
4. I am dissatisfied with the accessibility and availability of the instructor (recode)	3.04	1.43
5. I am satisfied with the use of "threaded" online discussions and/or forums	3.83	.89
6. I am satisfied with the use of the chat tool (Skype)	4.21	.94
7. I am satisfied with how I am able to navigate within Blackboard (the course management system)	4.14	.83
8. I am dissatisfied with download times of resources in Blackboard (the course management system)	3.83	.97
9. I am satisfied with the frequency I have to attend class (e.g., log into the course)	3.93	1.03
10. I am satisfied with the flexibility this course affords me	4.41	.98
11. I am dissatisfied with the level of self-directedness I am given (recode)	3.45	1.45
12. I am satisfied with how much I enjoy working on projects by myself	3.41	1.09
13. I am satisfied with the quality of interaction between all involved parties	3.86	1.27
14. I am dissatisfied with the process of collaboration activities during the course (recode)	3.28	1.33
15. I am satisfied with how much I could relate to the other students	3.59	1.02
16. I am satisfied with how comfortable I became with participating	4.04	.73
17. I am satisfied with the level of effort this course required	3.90	1.08
18. I am dissatisfied with my performance in this course (recode)	4.17	1.04
19. I believe I will be satisfied with my final grade in the course	4.31	.60
20. I am satisfied with how I am able to apply what I have learned in this course	4.10	.90
21. I am satisfied enough with this course to recommend it to others	3.79	1.18
22. Compared to other course settings, I am less satisfied with this learning experience (recode)	3.52	1.35
23. My level of satisfaction in this course would encourage me to enroll in another course in this setting	3.72	1.28
24. Overall, I am satisfied with this course	4.17	1.07

Research question 4: Explaining faculty vs. student satisfaction based on MBTI®

While data analysis is still under way for the larger study on online student satisfaction and MBTI® (Bolliger & Avgerinou, 2009), regarding the current study, a few, interesting results may be shared.

Table 2. Survey instrument (Adapted from Bolliger & Wasilik, 2009)

Item	Response
1. The level of my interactions with students in this online course is higher than in the traditional face-to-face section of the class	A
2. The flexibility provided by the online environment is important to me	A
3. My online students are actively involved in their learning	A
4. I incorporate fewer resources when teaching this online course as compared teaching this course face-to-face	SD
5. The technology I use for online teaching is reliable	D
6. I have a higher workload when teaching this online course as compared to the traditional one	SA
7. I miss face-to-face contact with students when teaching online	D
8. I do not have any problems controlling my students in the online environment	A
9. I look forward to teaching this course online again	A
10. My students are very active in communicating with me regarding online course matters	A
11. I appreciate that I can access my online course any time at my convenience	SA
12. My online students are more enthusiastic about their learning than their traditional counterparts	A
13. I have to be more creative in terms of the resources used for this online course	A
14. Online teaching is often frustrating because of technical problems	A
15. It takes me longer to prepare for this online course on a weekly basis than for the face-to-face section of the class	SA
16. I am satisfied with the use of communication tools in the online environment (e.g., chat rooms, threaded discussions, etc.)	D
17. I am able to provide better feedback to my online students on their performance in the course	SA
18. I am more satisfied with teaching online as compared to other delivery methods	A
19. My online students are somewhat passive when it comes to contacting the instructor regarding course related matters	D
20. It is valuable to me that my students can access my online course from any place in the world	SA
21. The participation level of my students in the class discussions in the online setting is lower than in the traditional one	DS
22. My students use a wider range of resources in this online setting than in the traditional one	SA
23. Technical problems do not discourage me from teaching online	A
24. I receive fair compensation for online teaching	SD
25. Not meeting my online students face-to-face prevents me from knowing them as well as my on-site students	D
26. I am concerned about receiving lower course evaluations in this online course as compared to the traditional one	A
27. Online teaching is gratifying because it provides me with an opportunity to reach students who otherwise would not be able to take courses	SA
28. It is more difficult for me to motivate my students in the online environment than in the traditional setting	A

Beginning with the faculty satisfaction results, it is important to identify the characteristics of an INTP personality, in order to understand how these affect the teacher behavior in an online environment. An INTP instructor's characteristics are: (a) Introverted Thinking (dominant); (b) Extraverted Intuition (auxiliary); (c) Sensing (tertiary); and (d) Extraverted Feeling (inferior). This personality type prefers solving problems through the application of logic and common sense. They will seek help only when, after much systematic effort, they admit their inability to understand the problem at hand. As Quenk (2000) indicates INTPs may experience difficulty on a personal, and work level because "of their insistence of maintaining independence of action and their strong desire to be in control of how they use their time" (p. 128). They need to understand others' motives and behaviors in order to maintain balanced relationships. In a classroom environment, INTPs tend to approach the learning experience in a calm and detached, cognitive manner, while they may be happily challenged by its complexities. Other types (e.g. Feeling) may however interpret this behavior as distant and critical, thus creating a biased perception of the instructor as being disapproving or disinterested. Conversely, INTPs may exaggerate in their evaluation of Feeling types (ESFJs, ENFJs), for instance perceiving them as being over-reacting, and they may overall be uncomfortable working with them.

Moving to the student satisfaction results, let us identify the characteristics of the three types with the highest representation in our sample. ENFJs and ESFJs are extraverted feeling types (dominant) with introverted thinking (inferior). While ENFJs are characterized by Introverted Sensing (Auxiliary) and Intuition (Tertiary), for ESFJs Introverted Intuition is their Auxiliary and Sensing is their Tertiary. As learners they are both confident (though sometimes ENFJs may be over-confident), and trusting. They seek active involvement in their learning. According to Quenk (2000), "they assume there is a solution available for whatever problems occur and that the best solution can be found by identifying and seeking expert knowledge. They freely help others when asked or when they recognize someone in need" (p. 136). Both types appreciate receiving consistent support as well as specific instructions related to the learning experience. Both may take charge of group projects while sometimes losing site of their own goals and intuition, and perhaps risking to be perceived as "insensitive to others' needs for privacy and self-determination" (p. 137).

Characterized by Introverted Intuition (Dominant), Extraverted Thinking (Auxiliary), Feeling (Tertiary), and Extraverted Sensing (Inferior), INTJs are interested in in-depth engagement with their learning, adopting cognitive and systems approaches, and appearing very serious, focused and intense. Though very organized, able to make sense of abstract, overly complex and seemingly unrelated issues, if under stress INTJs may get obsessed with minor details. Sometimes they may find themselves unable to relate to others.

The INTP faculty of this study was satisfied with the learning experience on both the student and instructor-related fronts. This is in perfect alignment with the INTP characteristics as outlined above, since the faculty who is experienced in teaching online, can comfortably maintain control of the online learning experience. From being responsible for the instructional design, to the management of the learning management system, to the monitoring of the group as well as individual assignments, the faculty felt not only in charge, but also had the students' approval to change during the course life, those instructional elements that proved ineffective. Applied constructivism was adopted and practiced, thus faculty and students kept interacting with each other, providing meaningful feedback and helping create a more equitable environment where the faculty truly became *the guide on the side*. This element was apparently very welcome by the Feeling types who apart from enjoying being active and interactive, they also enjoy being given specific and

systematic instructions in order to remain motivated and on task. It was also appreciated by the INTJ group who likes organization, and sharing of the rationale underlying learning activities.

When teachers and students with contrasting preferences and therefore contrasting assumptions are communicating in any teaching environment, there may be some frustration through misunderstanding of expectations. Thankfully due to the lack of visual cues, but also the asynchronous nature of the course communications, which in turn yielded carefully constructed responses, the instructor did not run the risk of mistaking the Feeling types' reactions as exaggerated or shallow, while INTJs enjoyed the opportunity to produce deeply reflective responses to class assignments.

It is thus not surprising that the INTP faculty scored high on the student and instructor-related fronts since both matched her type's characteristics and fulfilled associated needs and expectations. By the same token, it is not surprising either that the faculty scored low on the institution-related issues due to her questioning of existing online teaching policies which typically lead to an unwelcome compromise of not just academic support, but also research and scholarly independence in the classroom. Finally, given the combination of the teacher and the learner personality types as explained above, the reported high student satisfaction with their course, was also rather predictable. The only major point of ambiguity related to the effectiveness of the group project. It can be assumed that this heavily group-based assignment limited INTJs' favorite tendency to work independently, while it also proved time consuming for the Feeling types who tend to take over group projects. Quite possibly the most significant tensions that arose within the group and challenged the group dynamics, could be attributed to the different perceptions (i.e., positive or negative) these personality types maintained about working in a group-based assessed project.

Conclusions

Evolved as part of a larger research project that focused on student satisfaction with online learning environments based on MBTI®, the purpose of the current study was to investigate, compare, and explain effects of personality type on student and teacher satisfaction with the online learning experience. Data collection has involved one faculty and her two online, graduate classes at a Midwestern American university. Teacher and students' personality types were categorized with the use of an online version of the Myers-Briggs Type Indicator®. The Online Faculty Satisfaction Survey (OFSS) (Bolliger & Wasilik, 2009) was employed as a self-report measure of faculty satisfaction. Responses to a questionnaire with six subscales were analyzed in order to evaluate levels of student satisfaction with the instructor, technology, class set-up, interaction, outcomes, and overall satisfaction. Results indicate that learners experienced higher levels of satisfaction in the online environment than the faculty. The MBTI® data analysis recognizes and explains apparent different personality assumptions, behaviors and expectations concerning the design and delivery of online learning experiences. As already mentioned, it is hoped that the conclusion of data analysis of the larger project will help shed more light into and ascertain differences in satisfaction based on personality differences with the view to offering recommendations that can apply to online learning environments in a more generic way. Becoming aware of personal strengths and differences, online teachers and students are more likely to articulate their learning and instructional needs in an objective, effective, personally meaningful, and respectful manner. It then follows that they are more likely to feel satisfied with the overall learning experience.

References

American Distance Education Consortium (ADEC). *Quality framework for online education.* Retrieved June 12, 2009 from http://www.adec.edu/earmyu/SLOANC~41.html

Astin, A. W. (1993). *What matters in college? Four critical years revisited.* San Francisco, CA: Jossey-Bass.

Ausburn, L. J. (2004). Course design elements most valued by adult learners in blended online education environments: An American perspective. *Educational Media International*, 41(4), 327-337.

Avgerinou, M.D., & Russell, A.L. (2007). Employing MBTI® to Explain and Enhance Online Teaching Styles. In A. Lionarakis (ed.) *Forms of democracy in education: Open access and distance education* (Vol. A, pp. 63-74), Athens: Propobos Publications.

Bishop-Clark, C., Dietz-Uhler, B., & Fisher, A. (2006/2007). The effects of personality type on web-based distance learning. *Journal of Educational Technology Systems*, 35(4), 491-506.

Bolliger, D.U., & Avgerinou, M. D. (2009). Student satisfaction with online courses based on personality type. Proc. *World Conference on Educational Multimedia, Hypermedia and Telecommunications*, Honolulu, HI.

Bolliger, D. U., & Wasilik, O. (2009). Factors influencing faculty with online teaching and learning in higher education. *Distance Education*, 30(1), 103-116.

Bolliger, D. U., & Martindale, T. (2004). Key factors for determining student satisfaction in online courses. *International Journal on E-Learning*, 3(1), 61-67.

Ellis, A. E. (2003). Personality type and participation in networked learning environments. *Educational Media International*, 40(1/2), 101-114.

Hoffman, J. L., & Betkouski, M. (1981). A summary of Myers-Briggs type indicator research applications in education. *Research in Psychological Type*, 3, 2-17.

Irani, T., Telg, R., Scherler, C., & Harrington, M. (2003). Personality type and its relationship to distance education students' course perceptions and performance. *The Quarterly Review of Distance Education*, 4(4), 445-453.

Jung, C. G. (1923). *Psychological types or the psychology of individuation*. New York: Harcourt.

Lau, L. (Ed.). (2000). *Distance learning technologies: Issues, trends, and opportunities*. Hershey, PA: Idea Group Publishing.

Lawrence, G. (1993). *People types & tiger stripes*. Ocala, FL: Center for Applications of Psychological Type (3rd ed.).

Liaw, S. (2008). Investigating students' perceived satisfaction, behavioral intention, and effectiveness of e-learning: A case study of the Blackboard system. *Computers & Education*, 51, 864-873.

Lin, Y., Lin, G., & Laffey, J. M. (2008). Building a social and motivational framework for understanding satisfaction in online learning. *Journal of Educational Computing Research*, 38(1), 1-27.

Myers, I. B., McCaulley, M. H., Quenk, N. L., & Hammer, A. L. (2003). *MBTI® Manual: A guide to the development and use of the Myers-Briggs Type Indicator®.* Mountain View, CA: CPP (3rd ed.).

Phipps, R., & Merisotis, J. (1999). *What's the difference: A review of contemporary research on the effectiveness of distance learning in higher education.* Washington, DC: Institute for Higher Education Policy. Retrieved 16 October 2008 from http://www.ihep.org/assets/files/publications/s-z/WhatDifference.pdf

Quenk, N.L. (2000). *Essentials of Myers-Briggs Type Indicator® assessment*. New York, NY: John Wiley & Sons, Inc.

Sahin, I., & Shelley, M. (2008). Considering students' perceptions: The distance education student satisfaction model. *Educational Technology and Society*, 11(3), 216-223.

Sloan Consortium (2002). Quick guide. Pillar reference manual. Needham, MA: Author. Retrieved 28 August 2008 from http://www.sloan-c.org/publications/books/dprm_sm.pdf

Sun, P., Tsai, R. J., Finger, G., Chen, Y., & Yeh, D. (2008). What drives a successful e-Learning? An empirical investigation of critical factors influencing learner satisfaction. *Computers & Education*, 50, 1183-1202.

Wickersham, L. E., & McGee, P. (2008). Perceptions of satisfaction and deeper learning in an online course. *Quarterly Review of Distance Education*, 9(1), 73-83.