EXAMINING QUANTITY AND TYPE OF COMMUNICATION IN CONTRIBUTING TO IS PROJECT SUCCESS

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ABSTRACT

This paper continues exploring the experience of regional university faculty in implementing experiential learning in various core MIS courses. Clients of past projects were surveyed to determine their perception of project success, the quantity of communication that occurred during the project development stage, and the types of communication that were employed. Analysis of the results indicate that the quantity of communication was significant in predicting the success of the project.
KEYWORDS: experiential learning, communication skills

INTRODUCTION

In previous research, the authors reported on the benefits of experiential learning for students in an MIS curriculum. This approach to student learning was shown to improve the communication skills of students, provide a real-world experience and to increase the students' ability to work cooperatively as part of a project team. The analysis of years of completed projects indicated that when more forms of communication were utilized, and when more communication events occurred, the student-developed projects were more successful.

In this research, the researchers propose to present the results of a client survey. The purpose of the survey is to gain a better understanding of the student-developed project from the perspective of the real-world client. Clients will be surveyed to determine not only their level of satisfaction, but also to determine what forms of communication were utilized between the students and the client. Results of the data collection will be presented and conclusions will be drawn on the importance of communication in the system development process.

LITERATURE REVIEW

The following is a brief review of the relevant literature. The areas of interest are the need for communication skills in technical graduates, the measurement of user satisfaction with information systems, and the use of experiential learning in information systems' curriculum. For a more detailed literature review of these areas, see Smith and Merritt (2010).

Importance of Communication Skills

The literature abounds with mandates for social and interpersonal skills (soft skills) in IT/IS graduates. Technical skills are no longer sufficient to land a job, as more than 75% of job advertisements in technical fields list a requirement for communication and interpersonal skills (Lee, 2005). Employers are increasingly looking for evidence of these skills in the hiring process (Fang, Lee, and Koh, 2005).

User Satisfaction

While there are many measures of system success (system quality, information quality, use, user satisfaction, individual impact, and organizational impact, (DeLone & McLean, 1992)), user satisfaction is considered to be the most useful measurement of system success (Chen, Soliman, Mao, & Frolick, 2000).

Benefits of Experiential Learning

Experiential learning has been shown to be a win, win, win endeavor. Benefits accrue to the students who complete the projects (Polito, Kros, & Watson, 2004; Kinsley, 1994; Roberts, 2003; Elbert & Anderson, 1984; Harris, 1994; Cougar, 1995; Gose, 1997; Jacoby, 1996) the university that provides the opportunity (Cooke & Williams, 2004; Fox, 2002; Hervani & Helms, 2004; Stanton, Giles, & Cruz, 1999; Richards & Platt, 1992; Johnson, Johnson, & Smith, 1991; Wedel, Behnezhad, & Gray, 2004; Cooke & Williams, 2004), and the business that participates (Fox, 2002; Schuldt, 1991; Cooke & Williams, 2004).

METHODOLOGY

Several Management Information Systems classes use experiential / service learning as a methodology to teach both hard and soft information management skills. Communication skills are one of the most important of the soft skills that must be developed in the students during these classes. Communication techniques used by the students range from face-to-face meetings to emails. Over the past eight years, it has become apparent that the amount of communication between students and clients has impacted on the how these databases have been received by the clients. Some of the databases are still in use. Others were never put into use. To attempt to determine whether communication actually played a role in whether database – client use, a simple survey was sent to the primary clients of the various projects. Twenty-two surveys were sent out with fourteen responses received. Survey questions can be found at Appendix 1.

RESULTS

Based on survey results, the level of communication between students and clients was a one to one match on the how the clients felt regarding the databases success at meeting their expectations. Interestingly, this is borne out in database use category. Communication between students and clients were a mixture of email (10 responses), face-to-face meetings (11), class meetings (9), telephone conversations (7) with only one respondent claiming to have communication with the students from only class meetings. Most clients had multiple types of communication with the students. Four of the clients used four types of communication, four had three, and two had two. The clients that had multiple types of communications with the students ranked the actual success of the database as either a four or five. Four respondents had only single levels of communication – one for email, one for face-to-face, the other two for class meetings only. Two of these respondents ranked the success of the database as a 2 (the lowest score received regarding database success).

According to the respondents, twelve of the fourteen databases are or were used: six databases are still in use, another two are in limited use, four were used but no longer used, and only two were never put into use. The client reasons for not using the database (or no longer using the database) were: the originating client moved; the client chose a different product; the client did not have the funds to hire someone to input the data; and the client changed the requirements and functionality of required by the database.

DATA ANALYSIS

Several regression analyses were run from the client responses to the online survey questions. In the first, the client's perceived level of communication (number of contacts) significantly predicted the client's perceived level of database success, $\beta=.7814$, $t(13)=5.481$, $p<.05$ (See Table 1).

Table 1

Regression Statistics	
Multiple R	0.845315283
R Square	0.714557927
Adjusted R Sqr	0.690771087
Standard Error	0.527869144
Observations	14

ANOVA

	df	SS	MS	F	Significance F
Regression	1	8.3705	8.3705	30.0401	0.0001
Residual	12	3.3438	0.2786		
Total	13	11.7143			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.90625	0.6071	1.4926	0.1613	-0.4166	2.2291	-0.4166	2.2291
X Variable 1	B =0.78125	0.1425	5.4809	0.0001	0.4707	1.0918	0.4707	1.0918

In the second regression analysis, the total number of communication methods used did not significantly predict the client's perceived level of database success, β=.4271, t(13)=1.3317, p>.05 (See Table 2).

Table 2

Regression Statistics	
Multiple R	0.358821772
R Square	0.128753064
Adjusted R Sqr	0.056149152
Standard Error	1.187682734
Observations	14

ANOVA

	df	SS	MS	F	Significance F
Regression	1	2.5015	2.5015	1.7734	0.2077
Residual	12	16.9271	1.4106		
Total	13	19.4286			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.8021	1.3661	0.5872	0.5680	-2.1743	3.7785	-2.1743	3.7785
X Variable 1	B=0.4271	0.3207	1.3317	0.2077	-0.2717	1.1259	-0.2717	1.1259

In the third analysis, the client's view of database success significantly predicted the client's impression of the database success, β=2.5, t(13)=6.5465, p<.05 (See Table 3).

Table 3

Regression Statistics	
Multiple R	0.88388348
R Square	0.78125
Adjusted R Sqr	0.76302083
Standard Error	0.5

Observations	14

ANOVA

	df	SS	MS	F	Significance F
Regression	1	10.7143	10.7143	42.8571	0.0000
Residual	12	3.0000	0.2500		
Total	13	13.7143			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-8	1.8597	-4.3019	0.0010	-12.0518	-3.9482	-12.0518	-3.9482
X Variable 1	B=2.5	0.3819	6.5465	0.0000	1.6680	3.3320	1.6680	3.3320

In the final analysis, the level of communication significantly predicted the client's impression of the class overall, $\beta=.2805$, $t(13)=3.3752$, $p<.05$ (See Table 4).

Table 4

Regression Statistics	
Multiple R	0.7332
R Square	0.5376
Adjusted R Sqr	0.4991
Standard Error	0.2570
Observations	14

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0.9216	0.9216	13.9516	0.0028
Residual	12	0.7927	0.0661		
Total	13	1.7143			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	3.6951	0.3186	11.5982	0.0000	3.0010	4.3893	3.0010	4.3893
X Variable 1	B=0.2805	0.0751	3.7352	0.0028	0.1169	0.4441	0.1169	0.4441

LIMITATIONS

The primary limitation of this study is the small sample size, which limits the extent to which the results can be generalized. Every past client was contacted and asked to complete the survey. Many did. Even so, only two to four projects are undertaken each year and some clients participated in more than one semester project. This limited the number of participants available to take the survey. As new projects are conducted, more surveys will be given and the results added to the existing data. Additionally, it should be noted that the instructor initiated this survey of past clients in the hope of demonstrating the importance of establishing and maintaining communication between the database and capstone students and their clients. To this end, the survey results have been successful.

CONCLUSION

The data analysis indicates that the more communication between students and clients, the better chance the database will be meet the client's needs and will used or considered successful. Additionally, increased communication lead to a positive impression by the client of both the class and of the completed project. The form of the communication was not found to be important, only that the communication took place.
The increased communication with real clients is also valuable to the students. Soft skills and specifically communication skills are becoming increasingly more important to IT professionals. Providing opportunities for the development of these skills is crucial for any IT curriculum, and crucial for product success. Utilizing experiential / service learning provides a realistic means of developing these skills. As previously stated, experiential learning has been shown to be a win, win, win endeavor, and the results of this research support that assertation.

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Appendix 1: Survey Questions

1. Rank the overall level of communication between the students and you on your project. [1 – 5 where 1 is bad 5 is excellent]
2. What forms of communication were used between the students and you? (Please choose ALL that apply). [Email, Telephone, Face-to-face, Class Meetings, Class Meetings Only]
3. Rank the level of success for your project. Please base this on whether the project met your expectations and was a usable database. [1 – 5 where 1 is bad 5 is excellent]
4. Is your database still in use? [Still Used, In limited use, Was used but no longer used, Never used]
5. If you never used your database, which best describes why. (You may choose multiple answers). [Database did not meet your requirements (functionality); Individual that requested the database moved; Chose a different product to use; Database difficult to use; Lack of training in the use of the product; Requirements changed - no longer needed the product; Other]
6. If your answer to number 5 was other, please explain.
7. If your database is still in use, what could have been done by the students or faculty to increase the success of the product?
8. From the point of view of the client, please rate your impression of the service learning / experiential learning used in this class. (One for a bad experience - five for a very positive experience).
9. How could we have improved the experience?