

A Case of Identification of the Importance of Communication Skills for IT Undergraduates

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Abstract— From last few decades, the Information Technology has been influencing every aspect of a country, including: industrial, e-governance, social, educational and related others. Sri Lanka, with the intention of realizing knowledge hub, as one of its national visions, has no exception in front of the influence of the Information Technology. Accordingly, business process outsourcing sector has become a competitive industry to the national economy, supplying foreign exchange to the country, creating numerous employment opportunities, being an influencing force for country's brain-drain. As a result, IT related academic and professional education sector became an intermediary industry to supply qualified people to the IT industry. However, meeting industry requirements and capabilities of graduates is found as not matched. It has discovered that, not only the knowledge that matters at the industry, graduates' skills, attitudes, personalities play a considerable role for them to be succeeded in the industry. This research focuses on highlighting the communication skill requirements need to be excelled by IT undergraduates as successful IT professionals. Depending on the diverse nature of the research a mixed methodology including both qualitative and quantitative methods has been used.

Keywords— Information Technology, IT, role models, skills

I. INTRODUCTION

Degree awarding academies in the field of Information Technology are now playing a major role in providing a significant contribution to the creation of IT graduates. The students are selecting the degrees by fulfilling the basic requirements. Although the students satisfy the required prerequisites to enrol for degree programs, the number of undergraduates who drop out without completing the degree program is increasing due to some reasons [1].

As revealed by the past literature, this could happen due to the lack of some necessary skills required from students. Sometimes, the students will graduate without acquiring the necessary skills. This will lead to unemployment in the long run.

Few attempts were in the existing literature researches carried out to identify the skills required from students to be a successful graduate. This study further specifically focuses on identifying the important of communication skill which should be improved by the IT degree applicants to be a successful IT professional in the industry.

II. LITERATURE REVIEW

A. Information Technology

The term "Information Technology" can be defined in two aspects; in the broadest sense, the term information technology is often used to refer to all of computing. In academia, it refers to undergraduate degree programs that prepare students to meet the computer technology needs of business, government, healthcare, schools, and other kinds of organizations [2].

B. Information Technology Degree Applicants

Information Technology degree applicant is a person who is in the process of gaining IT related knowledge and improve the skills to be an IT professional.

C. Information Technology Professionals

Among the variety of definitions, an Information Technology professional can be defined as a member of a profession with the particular IT knowledge and skills necessary to perform the professional role to provide IT related output.

IT professionals must practice and participate collaboratively with other professionals. Governance, regulations, culture are only a few of the environmental aspects of Information Technology work. Professionals need to actively participate in the local and global discussions which impact and concern the practice of Information Technology.

D. Competencies

Michael Armstrong (2006) defines the competencies as "It's what people need to be to perform a job well", Mirabile, 1995: 13 defines "Knowledge, skills, abilities, and behaviors required for successful performance of job duties" and Blancero, Boroski, and Dyer, 1996: 387 define Knowledge, skills, abilities and other attributes required to perform desired future behavior." Though these are having some differences, all these definitions share common elements too. They must be observable and measureable [3].

E. Skills

An individual's ability to do something well can be defined as a skill of that person.

F. Skills of Information Technology Degree Applicants

Skills of individuals differ from person to person based on the area specialized. Since this research focuses on teaching and

learning, the learning skills need to be taken into consideration [4]. The learning skills are;

- Physical skills requiring practice and repetition to get things done.
- Memorizing facts and information, adapting new ideas and systems.
- Ordering, prioritizing and planning, which refer to the degree to which a role holder has any responsibility for and flexibility in determining the way a particular activity is performed, diagnosing, analyzing and problem solving, with or without help.
- Interpreting or using written manuals and other sources of information such as diagrams or charts.
- Complex procedures or sequences of activity that is memorized or followed with the aid of written materials such as manuals.

G. Communication Skills of Information Technology Professionals

There are some skills which are absolutely essential for every educated Information Technology professional. Information Technology professionals commit to professional excellence and ethics, and to the values and principles of the profession. Skills and values that enable practitioners to work effectively and contribute positively to their organizations, clients and profession. These skills range from being strong communicators, to demonstrating the values- add of their contributions, to remaining flexible and positive in an ever changing environment [5], [6].

III. OBJECTIVES

Studying the importance of the communication skills to become a successful IT professional was the main objective of this research study. In order to achieve it, several steps have been identified to perform. The first step was identification of the communication skills of IT degree applicants. Next step was identification of graduate IT professionals who perform well in their companies (role models) and their communication skills of job specialization. Third, was an identification of the communication skills of role models when they started the degree program and the final step was an identification of the communication skill level gap between the IT professionals as undergraduates and the degree applicants. These four steps were successfully guided in concluding the importance of communication skills to be a successful graduate.

IV. METHODOLOGY

This research identifies the communication skills needed from the IT degree applicants to be a successful IT professional in the industry. Therefore, the research area consists of two main parties; IT degree applicants and IT professionals. To gather data according to the qualitative approach, interviews and questioners were conducted. Data about communication skills of the IT degree applicants of an institute and the communication skills of the graduate IT professionals of the same institute have been gathered in identifying their communication skills as professionals and that's the expected communication skill level of the degree applicants when they graduate after four years. There were around 276 of IT degree applicants selected as the sample size and the sample size of

graduate IT professionals was 100. The communication skill level was measured with respective to fluency; talking and writing in English, participation for the group discussions with members and understands ability of English.

Identified the communication skills of IT professionals when they were undergraduates using questionnaires. As they possess this skill, they have become established, competent top class professionals in their companies. If the IT degree applicants could practice these competencies and improve them, they could be able to reach to a position where the role models are in. Lecturers of IT institutes and some of the IT professionals were interviewed in getting their ideas or comments of the necessity of communication skills and what the industry is expecting from the undergraduates as communication skills in performing their job roles.

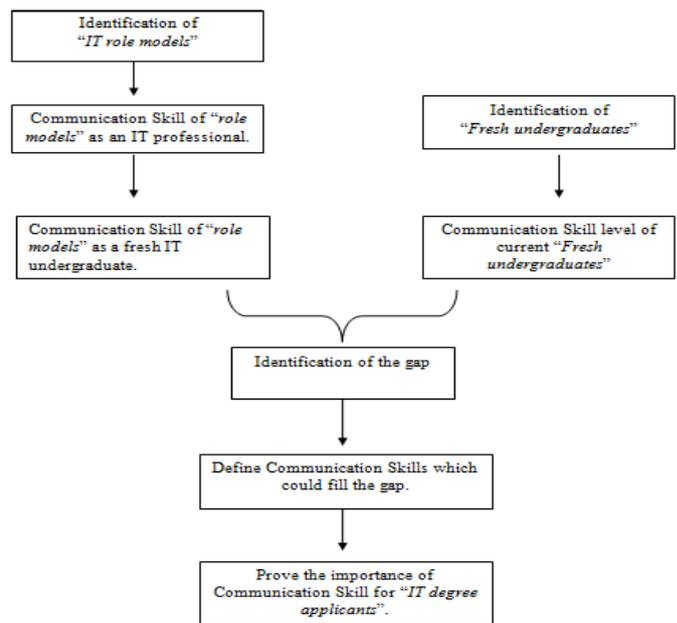


Fig1: Modeling the Research

V. RESULTS AND DISCUSSION

According to the statistical method- inferential analysis and average and percentage, the communication skill level of the IT degree applicants were measured. From the results of the analysis, it could be found as communication skills of applicants correlated with the fluency, participation for the group discussions and understand ability factors. Then the analysis extends to find which factors affect the communication skills most. The regression is significant with the 99% level of confidence (see figure 2). It can be seen that only the fluency and the understand ability – refer internet affects the communication skills with 95% level of confidence.

17% of the IT degree applicants agreed to talk with others in English language and 72% of them were using browsing

A. Identification of the skill levels of IT degree applicants

The research results revealed that the fluency/ talking with the others in English language is very poor. Not only reading, speaking and writing of English is very much essential for an IT professional. Therefore, communication skills of them need to be improved.

B. Identification of the Skill Levels of IT professionals when they started the Degree Program.

Model		Coefficients ^a					Correlations		
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Zero-order	Partial	Part
B	Std. Error	Beta							
1	(Constant)	.765	.230		3.323	.001			
	Fluency	.325	.081	.240	3.996	.000	.269	.241	.236
	Understandability	.419	.160	.159	2.615	.009	.185	.160	.154
	Participation	.276	.223	.074	1.241	.216	.061	.077	.073

a. Dependent Variable: communication skills

		Correlations						
		Reading	Fluency	Recall Time	Participation	Understandability	communication skills	
Spearman's rho	Reading	Correlation Coefficient	1.000	-.066	-.060	-.064	-.162**	.097
		Sig. (2-tailed)		.276	.319	.303	.007	.108
		N	276	275	273	264	276	276
Fluency		Correlation Coefficient	-.066	1.000	.106	.053	-.160**	.406**
		Sig. (2-tailed)	.276		.081	.391	.008	.000
		N	275	275	272	263	275	275
Recall Time		Correlation Coefficient	-.060	.106	1.000	-.095	-.160**	-.006
		Sig. (2-tailed)	.319	.081		.126	.008	.927
		N	273	272	273	261	273	273
Participation		Correlation Coefficient	-.064	.053	-.095	1.000	-.138*	.174**
		Sig. (2-tailed)	.303	.391	.126		.025	.005
		N	264	263	261	264	264	264
Understandability		Correlation Coefficient	-.162**	-.160**	-.160**	-.138*	1.000	.251**
		Sig. (2-tailed)	.007	.008	.008	.025		.000
		N	276	275	273	264	276	276
communication skills		Correlation Coefficient	.097	.406**	-.006	.174**	.251**	1.000
		Sig. (2-tailed)	.108	.000	.927	.005	.000	
		N	276	275	273	264	276	276

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Fig 2: Correlation analysis of the communication skills of IT degree applicants

. Here, the communication skill of the IT professionals were measured when they were studying as undergraduates. The purpose of measuring this was, to identify the importance of communication skills and motivate them to improve them to be good IT professionals. In that case, the communication skill of degree applicants and the results were generated by this section. Therefore, the same skill framework is used for the IT degree applicants. According to the results of the analysis of role models data, it can be stated that all the components of skills category exceed 50%, which implies that they were academically and personally good at the time they were doing academic activities.

A. Identification of the Skill Level Gap between the IT degree Applicants and IT professionals when they were Undergraduate

IT professionals were the best students of the institute and they have completed the degree successfully and presently perform well in their respective companies. In order to be a role model or to complete the degree program successfully, current students could improve as the academic level of IT professionals. Therefore, the skill levels of IT professionals when they were studying and the skill levels of degree applicants could be compared and communication skills including speaking/ presentation in English and writing in English must be improved by IT degree applicants.

VII. CONCLUSION

Based on the results found, it can be clearly seen the importance of communication skill of IT degree applicants should possess was absent in them. Information Technology professional will find his/ her career paths more successful if one's possesses good communication skills. In presenting the software product that have been developed for the client organization, writing well-commented computer codes (someone else can figure out how the program works), writing memos to management about how a project is progressing, or

writing articles for professional and trade publications; IT professionals must have good communication skills.

Therefore, they should be groomed to good communicators through the degree program in the form of different kinds of written assignments and presentations. There exists a shortage of the communication skills of the present degree applicants compared to the communication skills of the undergraduate level competency of the IT professionals. By filling the gap, current undergraduates will be able to become role models by improving these skills.

It is a rare luxury for a computer professional to be able to work on only one project, or one problem, at a time. It is far more common to be required to work on several different things projects at once, often with similar deadlines. To handle this situation, computer professionals must be able to communicate with their team members and handle different types of clients. So, it's having a high need of communication skills. Therefore, by improving the communication skills, IT degree applicants will be able to be a skilful project team leader in the future.

According to the results obtained in the research analysis, it has been proven that the improvement of communication skills that will excel IT undergraduates as successful IT professionals.

VIII. REFERENCES

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