

Students' Perception on Learning of Computer Basics through SUITS

Shanmuga Priya.P.M¹, Monika.M², Parthasarathy.K³

Department of E & Tc Engineering

¹Assistant Professor, Department of Civil Engineering, B.S. Abdur Rahman Crescent University (Deemed), Vandalur, Chennai - 600048

²Research Scholar, Department of Management Studies, Urumu Dhanalakshmi College, Kattur, Tiruchirappalli

³(Chair - School of Skill Development and Entrepreneurship), Professor & Director, Institute of Entrepreneurship and Career Development, Bharathidasan University, Khajamalai Campus, Tiruchirappalli

Abstract-Technical education is a term applied to schools, institutions, and educational programs that specialize in the skilled trades, and career and vocational preparation of students for career involving applied science and modern technology. It emphasizes the understanding and practical application of basic principles of computer science. The aim of the study to investigate the demographic profile and their responses of learning computer basics through SUITS and also to find out the difference, variance and relationships between these variables. For this, seven hypotheses were developed in light of hypothetical information by literature survey. This research is done by using students' perception on learning of computer basics through SUITS. The participant group of the research consists of 246 school students. This study concluded that there is no significant difference between gender of the respondents and their responses on learning of computer basics. And another finding reported that there is no significant difference between system availability of the respondents at their home and their responses on learning of computer basics, except teaching and learning methods.

Keywords-Perception, Computer Basics, SUITS.

I. INTRODUCTION

Today, the individual qualities needed by humanities and societies have changed. The changes and developments in education, science and technology establish the main reason for this situation. One of the most important outcomes of development attractive place in technology is the computer as well. As to the computer, on the one hand, it transforms into a more functional structure enthused by science and technology, while on the other hand it provides speed and other contributions to the development of science. The computer has begun to be used in industrial, medical, banking, military, agriculture, and every other area of life in technology world. One of the most important usages of computer areas is education sector. The technical education programme plays an important role in increasing the students' skills and knowledge and also reducing the youth unemployment. It is one of the

challenges today hindering the modernization of the technology world. School-University-Industry-Tie-up-Scheme (SUITS) aim at developing students' comprehensive ability of computer key applications, creative thinking and operational skills. Students get the strong foundation to become a software programmer / IT Professional and enriched technical knowledge in more practical way.

II. LITERATURE SURVEY

Parthasarathy et.al., (2017), studied on, the perception of the students on vocational skill development programme in computer education. They pointed that programme is the process of learning experience which involves knowledge, skills and abilities to students in order to bring about a permanent change of those qualities in them. A good programme at correct time enhances the technical skills and knowledge of the students. Vocational skill development programme also enhances learning new things and improves skills of the students. Hence, the results concluded that, there are significant inter-relationships among the perception of the students on the skill development field of Information Technology in the study area.

Dongqing Wang, Hou Han, et.al., (2015), studied that, the area of a problem solving oriented intelligent tutoring system to improve students' acquisition of basic computer skills. Personalization and intelligent tutor are two key factors in the research on learning environment. Intelligent Tutoring System (ITS), which can imitate the human teachers' actions to implement one-tone personalized teaching to some extent, is an effective tool for training the ability of problem solving. This research firstly discusses the concepts and methods of designing problem solving oriented ITS, and then progresses the current intelligent tutoring based on the stretched model of ITS. The result shows that students in intelligent tutoring group experience better learning effectiveness than those in the control group. It is found to be effective in improving the learning efficiency of students with low-level prior knowledge.

Ya-Ling Wu and Jia-Jen-Hu, (2015), studied that, an increasing number of junior high school students have been studying in technical education programs rather than general programs in Taiwan. Thus, this study aims to investigate the skill learning attitudes, satisfaction of curriculum, and vocational self concept among junior high school students of technical education programs as well as the relationships between these variables. Data were analyzed by statistical methods, including t-test, one-way ANOVA, Pearson's product-moment correlation, and multiple stepwise regression analysis. The following are the results of this study: 1. The junior high school students of technical education programs held positive skill learning attitudes while their skill learning motivation was not strong. 2. Most of the junior high school students of technical education programs were satisfied with the curriculum of technical education programs. 3. The junior high school students of technical education programs had moderately high level of vocational self concept. 4. Skill learning attitudes and satisfaction of curriculum significantly predicted vocational self-concept.

Mustafa Metin et.al., (2012), studied that, computer courses in primary education are to teach information technology use skills in the light of modern technological developments in Turkey. The aim of the study is to develop a scale to uncover of primary students' basic computer use performances (BCUPS). A scale has been developed to measure the basic computer use performance skills. Objectives carried out at what level has a great importance in primary education. From this point, a performance scale should be prepared in detecting encounter difficulties after discovering basic computer skills connected with computer courses. By utilizing this scale it can be easily revealed in which topic students have deficiencies. The finding shows that reliability coefficient calculated by croanbach-alpha is 0.9705. It is believed the BCUPS will be filled the gap in the literature related to detect basic computer performance skills. Followed by the additional validation studies; the BCUPS will serve as a valuable tool for both instructors and researchers to assess students' basic computer skills.

III. OBJECTIVES OF THE STUDY

- To find out the socio-economic profile of the respondents of the study.
- To investigate the significant difference between demographic profile (Gender, availability of system and usage of system) and dimensions contributing the learning of computer basics among the respondents.
- To find out the variance between demographic profile (standard, student residence and Parents'

education qualification) and dimensions contributing the learning of computer basics among the respondents.

- To find out the Karl Pearson's coefficient relationship between the dependent variables of learning of computer basics through SUITS.

IV. HYPOTHESES OF THE STUDY

1. There is no significant difference between gender of the respondents and their responses on learning of computer basics.
2. There is no significant difference between system availability of the respondents at their home and their responses on learning of computer basics.
3. There is no significant difference between system usage of the respondents at their home and their responses on learning of computer basics.
4. There is no variance among the standard and their responses on learning of computer basics in the study area.
5. There is no variance among the student residence and their responses on learning of computer basics in the study area.
6. There is no variance among the parents' educational qualification and their responses on learning of computer basics in the study area.
7. There is no significant relationship between the number of dependency of the respondent and their responses on learning basics computer in the study area.

V. RESEARCH METHODOLOGY

Descriptive research is used to describe the learning of computer basics through SUITS scheme. Convenience stratified sampling is the sampling method used to gather the responses of the respondents of the study area. Structured questionnaire for the survey was framed by the authors. The rating scale encircled with five point Likert scale namely strongly agree, agree, neutral, disagree and strongly agree. A total of 16,929 students were studying Certificate in Basic Computer (CCB) in during the academic year 2016-17. The researchers collected only one individual from the each school. 246 respondents are the sample population of this study. The responses are analyzed in SPSS 20.0 software. Data were analyzed by t-test, one-way ANOVA and Karl Pearson's coefficient correlation.

VI. ANALYSIS AND INTERPRETATION

Table 1: Demographic profile of the respondents

S.No	Demographic Profile	Particulars	No. of respondents	Percentage
1	Gender	Boys	85	34.6
		Girls	161	65.4
2	Standard	5 th	228	92.7
		6 th	11	4.5
		7 th	7	2.8
3	Residential Background	Rural	157	63.8
		Urban	82	33.3
		Tribal	7	2.8
4	Parents Educational Background	Illiterate	22	8.9
		Up to HSC	98	39.8
		UG	93	37.8
		PG& Above	33	13.4
5	System Availability	Yes	134	54.5
		No	112	45.5
6	Usage of System	Yes	132	53.7
		No	114	46.3

- Gender: Out of 246 students sample from enrolled schools, there were 85 boys (34.6%) and 161 (65.4%) girls. The population of girls outnumbered the boys.
- Standard: Out of 246 students, those who were the standard of 5th were 228 (92.7%), 6th standard were 11(4.5%) and 7th standard were 7(2.8%). The majority constituted the students sample doing 5th standard in computer basics.
- Residential Background: There were 157 (63.8%) students residing in rural area, 82 (33.3%) were urban area and 7 (2.8%) were tribal. Students residing in the rural area formed the majority in the sample population.
- Parents Educational Background: There were 22 (8.9%) students had un-educated parents, 98 (39.8%) parents were studied Up to HSC, 93 (37.8%) parents were studied Under Graduate and 33 (13.4%) students were from PG & above parents. Majority of student parents were studied Up to HSC.
- System Availability: There were 134 (54.5%) students belonging to having system and 112 (45.5%) students do not have a system. The majority of the students having system.
- Usage of System: There were 132 (53.7%) students are system users and remaining 114 (46.3%) students did not use system. The majority of students are system users.

Hypothesis - 1: There is no significant difference between gender of the respondents and their responses on learning of computer basics

Table 2: T-test showing the Differences between the Gender and their responses of the Learning of Computer Basics

Learning of Computer Basics through SUITS		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Career Development	Equal variances assumed	4.791	.030	2.581	244	.010 (*Sig)
	Equal variances not assumed			2.462	150.6	.015
Opinion on SUITS	Equal variances assumed	.209	.648	-.798	244	.426
	Equal variances not assumed			-.817	181.79	.415
Teaching-Learning Method	Equal variances assumed	.627	.429	.982	244	.327
	Equal variances not assumed			1.037	193.37	.301

Table 2 reveals that, Levene's test on students' responses on career development (F=4.791), respondents' perception about SUITS (F=0.209) and students' perception on teaching and learning method (F=0.627). Therefore, we use the t-value and two-tail significance for unequal variance estimates to determine whether the five levels (strongly agree, agree, neutral, disagree and strongly disagree) of students' perception on learning of computer basics by the education sectors differences exists among two group of gender. The two-tail significance for the gender indicates p<0.05 on students perception in technical education programme on career development (t=0.010).

It is concluded that there are no significant difference between gender of the respondents and their responses on learning of computer basics, except career development. Hence, the formulated null hypothesis-1 is accepted and overall concluded that “there are no significant difference between the gender of the respondents and their responses on technical education programme” in the study area.

Hypothesis - 2: There is no significant difference between system availability of the respondents at their home and their responses on learning of computer basics.

Table 3: T-test showing the Differences between the Availability of System and their responses of the learning of computer basics through SUITS

Learning of Computer Basics through SUITS		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Career Development	Equal variances assumed	2.621	.107	-.198	244	.843
	Equal variances not assumed			-.196	225.441	.845
Opinion on SUITS	Equal variances assumed	2.581	.109	.722	244	.471
	Equal variances not assumed			.713	221.207	.477
Teaching - Learning Method	Equal variances assumed	4.083	.044	2.240	244	.026 (*Sig)
	Equal variances not assumed			2.195	209.819	.029

Table 3 reveals that, Levene’s test on respondents’ responses on career development (F=2.621), students’ perception about SUITS (F=2.581) and students’ perception on teaching and learning method (F=4.083). Therefore, we use the t-value and two-tail significance for unequal variance estimates to determine whether the five levels (strongly agree, agree, neutral, disagree and strongly disagree) of students’ perception on technical education programme by the education sectors differences exists among two group of system availability at their home. The two-tail significance for the gender indicates $p < 0.05$ on students perception in technical education programme on teaching and learning method ($t=0.026$).

It is concluded that there are no significant difference between system availability of the respondents at their home

and their responses on technical education programme, except teaching and learning method. Hence, the formulated null hypothesis-2 is accepted and overall concluded that “there are no significant difference between the system availability of the respondents at their home and their responses on learning of computer basics through SUITS” in the study area.

Hypothesis - 3: There is no significant difference between system usage of the respondents at their home and their responses on learning of computer basics through SUITS.

Table 4: T-test showing the Differences between the Usage of System and their responses of the learning of computer basics through SUITS

Usage of System Vs Learning of Computer Basics through SUITS		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Career Development	Equal variances assumed	3.589	.059	.450	244	.653
	Equal variances not assumed			.444	222.102	.657
Opinion on SUITS	Equal variances assumed	7.246	.008	2.468	244	.014 (*Sig)
	Equal variances not assumed			2.431	217.933	.016
Teaching - Learning Method	Equal variances assumed	1.574	.211	2.234	244	.026 (*Sig)
	Equal variances not assumed			2.229	236.254	.027

Table 4 reveals that, Levene’s test on respondents’ perception on career development (F=3.589), students’ perception about SUITS (F=7.246) and students’ perception on teaching and learning method (F=1.574). Therefore, we use the t-value and two-tail significance for unequal variance estimates to determine whether the five levels (strongly agree, agree, neutral, disagree and strongly disagree) of students’ perception on technical education programme by the education sectors differences exists among two group of system usage at their home. The two-tail significance for the gender indicates $p < 0.05$ on students perception in technical education

programme on career development (t=0.014) and students perception in technical education programme on teaching and learning method (t=0.026).

It is concluded that there is significant difference between system usage of the respondents at their home and their responses on technical education programme, except career development. Hence, the formulated null hypothesis-3 is rejected and overall concluded that “there is significant difference between the system usage of the respondents at their home and their responses on learning of computer basics through SUITS” in the study area.

Hypothesis - 4: There is no variance among the standard and their responses on learning of computer basics through SUITS in the study area.

Table 5: ANOVA showing the variance among the Standard and their responses on learning of computer basics through SUITS of the Respondents

Standard Vs Learning of Computer Basics through SUITS		Sum of Squares	df	Mean Square	F	Sig.
Career Development	Between Groups	47.638	2	23.819	4.425	.013 (*Sig)
	Within Groups	1308.102	243	5.383		
	Total	1355.740	245			
Opinion on SUITS	Between Groups	25.930	2	12.965	2.998	.052 (*Sig)
	Within Groups	1050.823	243	4.324		
	Total	1076.752	245			
Teaching - Learning Method	Between Groups	107.221	2	53.611	8.536	.000 (*Sig)
	Within Groups	1526.080	243	6.280		
	Total	1633.301	245			

Table 5 shows that the significant level of the dependent variables of the study are less than 0.05. Hence it is concluded that there is significant variance among the standard and the students’ perception on learning of computer basics. Hence the hypothesis-4 is rejected.

Hypothesis - 5: There is no variance among the student residence and their responses on learning of computer basics through SUITS in the study area.

Table 6: ANOVA showing the variance among the Student Residence and their responses on learning of computer basics through SUITS of the Respondents

Student Residence Vs Learning of Computer Basics through SUITS		Sum of Squares	df	Mean Square	F	Sig.
Career Development	Between Groups	12.843	2	6.421	1.162	.315
	Within Groups	1342.897	243	5.526		
	Total	1355.740	245			
Opinion on SUITS	Between Groups	43.995	2	21.998	5.176	.006 (*Sig)
	Within Groups	1032.757	243	4.250		
	Total	1076.752	245			
Teaching - Learning Method	Between Groups	24.455	2	12.228	1.847	.160
	Within Groups	1608.846	243	6.621		
	Total	1633.301	245			

dependent variables of the study are greater than 0.05. Hence it is concluded that there are no significant variance among the student residence and the students’ perception on learning of computer basics, except opinion on SUITS. Hence the hypothesis - 5 is accepted.

Hypothesis - 6: There is no variance among the parents’ educational qualification and their responses on learning of computer basics through SUITS in the study area.

Table 7: ANOVA showing the Variance among the Parents’ Educational Qualification and their responses on learning of computer basics of the Respondents

Parents’ Educational Qualification Vs Learning of Computer Basics through SUITS		Sum of Squares	df	Mean Square	F	Sig.
Career Development	Between Groups	7.419	3	2.473	.444	.722
	Within Groups	1348.321	242	5.572		
	Total	1355.740	245			
Opinion on SUITS	Between Groups	9.607	3	3.202	.726	.537
	Within Groups	1067.145	242	4.410		
	Total	1076.752	245			
Teaching - Learning Method	Between Groups	35.653	3	11.884	1.800	.148
	Within Groups	1597.648	242	6.602		
	Total	1633.301	245			

Table 7 shows that the significant level of the dependent variables of the study are greater than 0.05. Hence it is concluded that there are no significant variance among the parents’ educational qualification and the students’ responses on learning of computer basics through SUITS. Hence the hypothesis - 6 is accepted.

Hypothesis - 7: There is no significant relationship between the number of dependency of the respondent and their responses about learning of computer basics in the study area.

Table 8: Karl Pearson's coefficient relationship between no. of dependency of the respondent and their responses on learning of computer basics

Learning of Computer Basics through SUITS		Career Development	Opinion on SUITS	Teaching-Learning Method
Career Development	Pearson Correlation	1	.461**	.421**
	Sig. (2-tailed)		.000	.000
	N		246	246
Opinion on SUITS	Pearson Correlation	.461**	1	.433**
	Sig. (2-tailed)	.000		.000
	N	246		246
Teaching-Learning Method	Pearson Correlation	.421**	.433**	1
	Sig. (2-tailed)	.000	.000	
	N	246	246	

The correlations table displays Pearson correlation coefficients, significance values, and the number of cases with non-missing values (N). The values of the correlation coefficient range from -1 to 1. The sign of the correlation coefficient indicates the direction of the relationship (positive or negative). The absolute value of the correlation coefficient indicates the strength, with larger absolute values indicating stronger relationships. The correlation coefficients on the main diagonal are always 1, because each variable has a perfect positive linear relationship with itself.

The above table shows that there is significant relationship between no. of dependency of the respondents and their responses on learning of computer basics through SUITS. Hence, the calculated value is less than table value ($p < 0.01$). So the research hypothesis is accepted and the null hypothesis is rejected.

VII. HYPOTHESES RELATED FINDINGS OF THE STUDY

- ✓ There is no significant difference between gender of the respondents and their responses on learning of computer basics, except *career development*. Hence, the hypothesis - 1 is accepted.
- ✓ There is no significant difference between system availability of the respondents at their home and their responses on learning of computer basics, except *teaching and learning method*. Hence, the hypothesis - 2 is accepted.
- ✓ There is significant difference between system usage of the respondents at their home and their responses on learning of computer basics, except *career development*. Hence, the hypothesis - 3 is rejected.

- ✓ There is significant variance among the standard and their responses on learning of computer basics. Hence the hypothesis - 4 is rejected.
- ✓ There are no significant variance among the student residence and their responses on learning of computer basics, except *opinion on SUITS*. Hence the hypothesis - 5 is accepted.
- ✓ There are no significant variance among the parents' educational qualification and their responses on learning of computer basics. Hence the hypothesis - 6 is accepted.
- ✓ There is significant relationship between no. of dependency of the respondents and their responses on learning of computer basics. Hence, the calculated value is less than table value ($p < 0.01$). So the research hypothesis is accepted and the null hypothesis - 7 is rejected.

VIII. CONCLUSION

The present study evaluated the learning of computer basics of the respondents through SUITS conducted in schools of Tamil Nadu and Pondicherry by IECD, Bharathidasan University. The SUITS, helps to develop their career development, technical skills and knowledge updating in their most wanted programming in the field of IT. The hypotheses related a finding shows that there is no significant difference between gender and system availability of the respondents and their responses on learning of computer basics. There are no significant variance among the student residence and parents' educational qualification and the students' perception on learning of computer basics. There is significant relationship between no. of dependency of the respondents and their responses on learning of computer basics. All the gender of student's had given a uniform (positive) opinion. The overall conclusion drawn from this study was that, the personal variables of the respondents viz; usage of system in home, standard (class), residence of students and parents education qualification, are influence overall responses on learning of computer basics through SUITS.

REFERENCES

- [1] Candy, L., (1997). Computers and creativity support: knowledge, visualization and collaboration. Knowledge-Based Systems, Vol.10, No.1, pp.3-13.
- [2] Dongqing Wang, Hou Han, Zehui Zhan, Jun Xu, Quanbo Liu, Guangjie Ren., (2015), A problem solving oriented intelligent tutoring system to improve students' acquisition of basic computer skills, Computers & Education, Vol.81, pp.102-112.
- [3] Hussain.S, Hanaysha.J, and Ibrahim.M.S., (2016), Industry View on Academic Programme Development:

- An Empirical Study, *Procedia - Social and Behavioral Sciences*, Vol.219, pp.316–323.
- [4] Mustafa Metin, Salih Birisci, Kerem Coskun, Ali Kolomuc., (2012), A study on developing “Basic Computer Use Performance Scale (BCUPS)” for Primary Students, *Procedia - Social and Behavioral Sciences*, Vol.46, pp1771–1775.
- [5] Parthasarathy K, Aswini P.M. and Jayadurga R., (2017), Strategic Evaluation of Skill Development Programmes among Academic Heads, *International Journal for Scientific Research & Development*, Vol. 4, No.1, pp.484-489
- [6] Parthasarathy.K, Aswini P.M. and Monika.M., (2017), Students’ Perceptions on Vocational Education Programme, *International Journal of Advance Research in Computer Science and Management Studies*, Vol.5, No.4, pp.54-62.
- [7] Parthasarathy.K, Monika.M, and Aswini P.M., (2017), Study on Principal’s Perception on Skill Development Programmes in School Education, *Asian Journal of Research in Business Economics and Management*, Vol.7, No.5, pp.112-123.
- [8] Push.A, and Ananthram.S., (2006), Exploring the antecedents and outcomes of career development initiatives: Empirical evidence from Singaporean employees, *Research and Practice in Human Resource Management*, Vol.14, No.1, pp.112-142
- [9] Ya-Ling Wu and Jia-Jen-Hu., (2015), Skill learning attitudes, satisfaction of curriculum, and vocational self-concept among junior high school students of technical education programs, *Procedia - Social and Behavioral Sciences*, Vol.174, pp.2862-2866.