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Computer Self-Efficacy of Secondary School Students with respect to Select Variables

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Abstract:- The purpose of this study is to investigate Computer Self-Efficacy of Secondary School Students of Tiruchirappalli District in terms of Type of School Management, Type of School, Locale of the School, Medium of Instruction, Type of Staying, Birth Order, Gender, Community, Type of Family, Fathers' Educational Qualifications, Mothers' Educational Qualification, Fathers' Occupation, Mothers' Occupation, Having Computer in Home and Hours of Using Computer at Home. This is a descriptive field survey. The study group of the research comprised of totally 1853 students who were selected randomly from the schools of Tiruchirappalli District. The Student Computer Self-Efficacy Scale (SCSES) developed and validated by Leela Bernath and Dr.S.Vincent De Paul (2015) was selected for measuring the Computer Self-Efficacy of the students. The data were analyzed by using 't' test and 'F test. Computer-Self-Efficacy scores of Secondary School Students are determined as in Low level. Except Type of Staying, Birth Order and Type of Family, Secondary School Students of Tiruchirappalli District differ significantly in their Computer Self-Efficacy in all the select variables. Educational implications of the study are discussed.

Keywords: *Computer Self-Efficacy, Secondary School Students, Demographic Variables*

I. INTRODUCTION

Everybody aware that the 21st century is known as 'Knowledge era' which is defined by 'an economy in which the production, distribution and use of knowledge is the main driver of growth, wealth creation, and employment across all industries' (Andrews, 2004). In the present Knowledge Age, students should be trained to do things with the knowledge namely 'Know what' kinds of knowledge, to use it to create new knowledge. It is aware that Knowledge Age worker-citizens need to be able to locate, assess, and represent new information quickly; They need to be able to communicate this to others, and to be able to work productively in collaborations with others; They need to be adaptable, creative and innovative, and to be able to understand things at a 'systems' or big picture' level; Most importantly, they need to be to think and learn for themselves, sometimes with the help of external authorities and/or systems of rules, but, more often, without this help. Information and Communication Technology enables the worker- citizens to go along with the Knowledge – Age, since it provides all sorts of learning environments for the aspects to be achieved such as locating, assessing, representing new information, communicating, working in collaboratively. All most all ICT gadgets are being operated with the help of Computers. Recent advances in computer technology and the flow of personal computers, productivity software, multimedia, and network resources have improved the development and implementation of new and innovative teaching strategies. Hence the future citizens namely the present learners should know the skills of operating Computer that is they should have optimum level of Computer literacy, Computer Attitude, Computer Efficacy etc.

II. NEED FOR THE STUDY

Individuals' judgment of to what extent they use their competencies they have in line with their objectives was conceptualized as 'Self- Efficacy Belief by Bandura (1977). Self-efficacy belief is defined as individuals' judgment of their capacity to organize activities and actions to show a certain performance and of their capacities to realize them in a successful way (Bandura, 1986). Adapted from the self-efficacy concept, computer self-efficacy is the extent of an individual's perceived ability to use a computer. Computer self-efficacy concerns one's own perception of the ability to use a computer in order to successfully perform a particular task(Murphy, Coover & Owen, 1989). Computer self-efficacy is defined as a measure of how confident computer users are with their ability to understand, use, and apply computer knowledge and skills (Delcourt & Kinzie, 1993). They reported that individuals who have high computer self-efficacy will feel

competent in using different computer hardware and software. However, a low computer self-efficacy leads to the belief that individuals will encounter difficulty in using computers hardware and software. Özder, Konedralı and Sabancıgil (2010) define self-efficacy perception as the perception in one's capabilities to perform an activity. Computer self-efficacy perception is defined as the degree to which an individual see himself/herself as adequate to use computer (Compeau & Higgins, 1995).The convergence of a variety of technological, instructional, and pedagogical developments in recent times have altered the outcomes of classroom processes. (Bonk & King, 1998; Marina, 2001). Various studies have strongly advocated that technology integration in the learning process, develops the skills required for 21st century (Butzin, 2000; Reiser, 2001: Hopson, Simms, & Knezek, 2002). Ertmer, Addison, Lane, Ross and Woods (1999) suggested that educators with higher computer self-efficacy are likely to be more enthusiastic to use technology in their classrooms than those with lower levels of self-efficacy. Similarly the outcomes of learning in the classroom are largely relay on the computer self-efficacy of the learners Busch (1995) have reported that high computer self-efficacy and lower computer anxiety levels could be important factors in helping people learn computer skills and use computers. A few studies have been reported among secondary school students. Hence the present study was carried out.

III. OBJECTIVES OF THE STUDY

The objectives of the present study are:. To find out the level of Computer Self-Efficacy of Secondary School Students of Tiruchirappalli District. To find out whether there exists, any significant difference in the Computer Self-Efficacy of Secondary School Students of Tiruchirappalli District with respect to the Institutional variables viz., Type of School Management, Type of School, Locale of the School, Medium of Instruction and Type of Staying. To find out whether there exists, any significant difference in the Computer Self-Efficacy of Secondary School Students of Tiruchirappalli District with respect to the Biological variables viz., Birth Order and Gender. To find out whether there exists, any significant difference in the Computer Self-Efficacy of Secondary School Students of Tiruchirappalli District with respect to the Social variables viz., Community, Type of Family, Fathers' Educational Qualification Mothers' Educational Qualification. To find out whether there exists any significant difference in the Computer Self-Efficacy of Secondary School Students of Tiruchirappalli District with respect to the Economical variables viz., Fathers' Occupation, Mothers' Occupation. There exists no significant difference in the Computer Self-Efficacy of Secondary School Students of Tiruchirappalli District with respect to the Technological variables viz., Having Computer, Hours of using Computer

IV. HYPOTHESES OF THE STUDY

To achieve the above objectives the following hypotheses have been framed.

 The Computer Self -Efficacy of Secondary School Students of Tiruchirappalli District is low.

 There exists no significant difference in the Computer Self-Efficacy of Secondary School Students of Tiruchirappalli District with respect to the following Institutional variables viz., Type of School Management, Type of School, Locale of the School, Medium of Instruction and Type of Staying.

 There exists no significant difference in the Computer-Self-Efficacy of Secondary School Students of Tiruchirappalli District with respect to the following Biological variables viz., Birth Order and Gender.

 There exists no significant difference in the Computer Self-Efficacy of Secondary School Students of Tiruchirappalli District with respect to the following Social variables viz., Community, Type of Family, Fathers' Educational Qualification Mothers' Educational Qualification.

 There exists no significant difference in the Computer Self-Efficacy of Secondary School Students of Tiruchirappalli District with respect to the following Economical variables viz., Fathers' Occupation, Mothers' occupation

 There exists no significant difference in the Computer Self-Efficacy of Secondary School Students of Tiruchirappalli District with respect to the following Technological variables viz., Having Computer, Hours of using Computer

V. METHODOLOGY IN BRIEF

In the present study survey method was followed. This study is limited to the X Standard Students of Tiruchirappalli District of Tamil Nadu only.

5.1 Sample

In Tiruchirappalli District, at X Standard, 39649 students studied during 2015-16. Among these students, 1853 students were selected randomly from the schools of Tiruchirappalli District. They were divided into various sub groups on the basis of institutional and students' variables. Hence the sample for the present study is 1853.

5.2 Tool

The Student Computer Self-Efficacy Scale (SCSES) developed and validated by Leela Bernath and Dr.S.Vincent De Paul (2015) was selected for measuring the Computer Self-Efficacy of the students. It was designed with the 65 valid items. This tool has six dimensions ranging from General Computer Efficacy to Computer in Classroom Process Efficacy. This scale is a Likert Type five point scale (Always, Often, Sometimes, Rarely and Never). All the 65 are positive items, the scoring is '5', '4', '3', '2', and '1' for 'Always', 'Often', 'Sometimes,'Rarely' and 'Never' respectively. The maximum possible score is 260 and the minimum is 0.The highest score indicates the existence of high Computer Self-Efficacy among trainees. The Cronbach alpha value for the whole items is 0.992 and for each factor it varies from 0.954 to0.963.

V. ANALYSIS & INTERPRETATION

The data were analyzed by using 't' test and 'F test.6.1 Computer Self-Efficacy of Secondary School Students of Tiruchirappalli. The minimum, maximum, mean and Standard Deviation (SD) obtained for the six Dimensions of Computer Self-Efficacy Scale are presented in the Table 1.

Table 1 : Mean & SD of Computer Self-Efficacy of Secondary School Students of Tiruchirappalli District

Dimensions	N	Minimum	Maximum	Mean	Std. Deviation	Mean Percentage
General Computer Efficacy	1853	0.00	44.00	9.15	12.93	20.8053
Word Processing Efficacy	1853	0.00	44.00	8.66	12.71	19.6720
Spreadsheets / Excel Efficacy	1853	0.00	44.00	7.88	11.89	17.9034
PowerPoint Presentation Efficacy	1853	0.00	44.00	8.36	12.44	19.0011
Internet Efficacy	1853	0.00	44.00	8.84	12.85	20.0927
Computer in Classroom Process Efficacy	1853	0.00	40.00	8.07	11.52	20.1835
Computer Self-Efficacy	1853	0.00	260.00	50.96	72.51	19.6009

The mean and standard deviation of the Computer Self-Efficacy of the students have been found to be 50.96 and 72.51 respectively (Table 1). The maximum Computer Self-Efficacy score that could be obtained is 260. The maximum score teacher trainees obtained in the present study has been 260 and the minimum 0. The mean score 50.96 (19.60%) is far below 50% of the maximum score. So, it may be concluded that Computer Self-Efficacy of Secondary School Students is rather very low. The SD, 72.51, indicates that there is a slight wide dispersion of scores.

Dimension-wise analysis of the Computer Self-Efficacy also shows that their Computer Self-Efficacy is relatively very low in all the six Dimensions (Table.1). Among the dimensions, students are relatively good in the Dimension, 'General Computer Self-Efficacy' with the mean score of 9.15 &12.93 and students are relatively poor in the Dimension 'Spreadsheets / Excel Efficacy' with the mean score of 7.88 and 11.89.The mean scores of the dimensions of Students Computer Self-Efficacy are in the order of 'Spreadsheets / Excel Efficacy' (7.88), 'Computer in Classroom Process Efficacy' (8.07), PowerPoint Presentation Efficacy' (8.36), 'Word Processing Efficacy' (8.66), 'Internet Efficacy' (8.84) and 'General Computer Efficacy'(9.15).. So it may be concluded that students of Tiruchirappalli District generally have low Computer Self-Efficacy. Dimension-wise analyses also support the general conclusion.

Table 2 : Test of Significance:- Difference in Computer Self-Efficacy between the Students of Tiruchirappalli District having High level of Computer Self-Efficacy and having Low level of Computer Self-Efficacy

Levels of Computer Self-Efficacy	N	Mean	Standard Deviation	t	df	Significant Level
Low	1490	20.09	37.41	73.392	1851	0.01
High	363	177.67	33.52			

The Table 2 shows that the calculated t value 73.392 is greater than the table value 2.578 for df = 1851 at 0.01 level of significance. Hence the null hypothesis that there is no significant difference in Computer Self-Efficacy between Students having High level of Computer Self-Efficacy and having Low level of Computer Self-Efficacy of Tiruchirappalli District is rejected at 0.01 level of significance.

6.2 Testing the significance of difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Type of Management of the School

Table 3 : ANOVA Summary

Sources	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	987840.256	2	493920.128	104.429	0.01
Within Groups	8750011.099	1850	4729.736		
Total	9737851.356	1852			

The Table 3 shows that the calculated 'F' value 104.429 is greater than the table value 4.617 for df (2, 1850) and hence the null hypothesis there exists no significant difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Type of Management of the School is rejected at 0.01 levels of significance. Further analysis was done. The results are given in the Table 4.

Table 4 : Test of Significance:- Difference in Computer Self-Efficacy between the Students of Tiruchirappalli District who studied in Government Schools, Government Aided Private Schools and Unaided Private Schools

Type of School Management	N	Mean	Standard Deviation	t	df	Significant Level
Government	754	32.90	57.29	5.840	1613*	0.01
Government Aided Private	879	51.93	74.26			
Government	754	32.90	57.29	13.018	285*	0.01
Unaided Private	220	109.00	81.00			
Government Aided Private	879	51.93	74.26	10.005	1097	0.01
Unaided Private	220	109.00	81.00			

*Equal variance not assumed

The Table 4 shows that the calculated t values 5.840, 13.018 and 10.005 are greater than the table values 2.579, 2.593, 2.580 for df = 1613, 285, 1097 respectively at 0.01 level of significance. Hence the null hypotheses that there is no significant difference in Computer Self-Efficacy between Students of Tiruchirappalli District who studied in Government Schools & Government Aided Private Schools, Government Schools & Unaided Private Schools, and Government Aided Private Schools & Unaided Private Schools are rejected at 0.01level of significance.

6.3 Testing the significance of difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Type of School

Table 5 : ANOVA Summary

Sources	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	646330.358	2	323165.179	65.760	0.01
Within Groups	9091520.997	1850	4914.336		
Total	9737851.356	1852			

The Table 5 shows that the calculated 'F' value 65.760 is greater than the table value 4.617 for df (2, 1850) and hence the null hypothesis there exists no significant difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Type of School is rejected at 0.01 levels of significance. Further analysis was done. The results are given in the Table 6.

Table 6 : Test of Significance:- Difference in Computer Self-Efficacy between the Students of Tiruchirappalli District who studied in Boys Schools, Girls' Schools and Coeducational Schools

Type of School	N	Mean	Standard Deviation	t	df	Significant Level
Boys	373	87.69	83.22	7.418	712*	0.01
Girls'	396	47.21	66.61			
Boys	373	87.69	83.22	10.091	543*	0.01
Coeducational	1084	39.69	66.31			
Girls'	396	47.21	66.61	1.929	1478	NS at 0.05
Coeducational	1084	39.69	66.31			

*Equal variance not assumed

The table 6 shows that the calculated t values 7.418 and 10.091 are greater than the table values 2.583, 2.585 for df = 712, 543 respectively at 0.01 level of significance. Hence the null hypotheses that there is no significant difference in Computer Self-Efficacy between the Students of Tiruchirappalli District who studied in Boys Schools & Girls' Schools and Boys Schools & Coeducational Schools are rejected at 0.01 level of significance. The table 6 also shows that the calculated t value1.929 is less than the table value 1.962 for df = 1478 at 0.05 level of significance. Hence the null hypothesis that there is no significant difference in Computer Self-Efficacy between students of Tiruchirappalli District who studied in Girls' Schools & Coeducational Schools is accepted at 0.05 level of significance

6.4 Testing the significance of difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Locale of School

Table 7 : Locale of School – ANOVA Summary

Sources	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	425120.902	3	141706.967	28.135	0.01
Within Groups	9312730.454	1849	5036.631		
Total	9737851.356	1852			

The Table 7 shows that the calculated 'F' value 28.135 is greater than the table value 3.792 for df (3, 1849) and hence the null hypothesis there exists no significant difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Locale of School is rejected at 0.01 levels of significance. Further Post Hoc test was carried out. The results are given in the Table 8.

Table 8 : Post Hoc Tests - Locale of School – Homogeneous Subsets

Computer Self-Efficacy				
	Locale of School	N	Subset for alpha = 0.05	
			1	2
Duncan[a,b]	Municipal	47	35.5957	
	Village Panchayat	994	37.6982	
	Corporation	774		67.8463
	Town Panchayat	38		73.0263
	Sig.		0.851	0.644
Means for groups in homogeneous subsets are displayed.				
a. Uses Harmonic Mean Sample Size = 80.176.				
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.				

The Table 8 indicates that Locale of Schools is secluded into two sub-sets. As it can be seen, the Computer Self-Efficacy of Municipal Area and Village Panchayat Area are at the same subset and indicating that there is no significance difference between them (p=0.851). Similarly the same can be observed in relation to Locale of the School, Corporation Area and Town Panchayat Area and indicating that there is no significance difference between them (p=0.644). The Computer Self-Efficacy of Municipal Area / Village Panchayat Area is significantly different from the Computer Self-Efficacy of Corporation Area and Town Panchayat Area. It is interpreted from the above finding that the Secondary School Students of Tiruchirappalli District differ in their Computer Self-Efficacy with respect to the variable Locale of School. Secondary School Students of Town Panchayat Area of Tiruchrappalli District have high level of Computer Self-Efficacy than the students of other Areas of Tiruchirappalli District.

6.5 Testing the significance of difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Medium of Instruction

Table 9 : Test of Significance:- Difference in Computer Self-Efficacy between Tamil Medium Students and English Medium Students of Tiruchirappalli District

Medium of Instruction	N	Mean	Standard Deviation	t	df	Significant Level
Tamil	1452	35.21	61.21	16.688	532*	0.01
English	401	108.00	81.20			

*Equal variance not assumed

The Table 9 shows that the calculated t values 16.688 is greater than the table value 2.585 for df = 532 at 0.01 level of significance. Hence the null hypothesis that there is no significant difference in Computer Self-Efficacy between Tamil Medium Students and English Medium Students of Tiruchirappalli District is rejected at 0.01 level of significance.

6.6 Testing the significance of difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Type of Staying

Table 10 : Test of Significance:- Difference in Computer Self-Efficacy between Days Scholars and Hostlers of Tiruchirappalli District

Type of Staying	N	Mean	Standard Deviation	t	df	Significant Level
Days Scholars	1721	51.61	73.04	1.549	157*	NS at 0.05
Hostlers	132	42.45	64.86			

*Equal variance not assumed

The Table 10 shows that the calculated t values 1.549 is less than the table value 2.608 for df = 157 at 0.05 level of significance. Hence the null hypothesis that there is no significant difference in Computer Self-Efficacy between Days Scholars and Hostlers of Tiruchirappalli District is accepted at 0.05 level of significance.

6.7 Testing the significance of difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Birth Order

Table 11: Birth Order – ANOVA Summary

Sources	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	30586.989	2	15293.494	2.915	NS at 0.05
Within Groups	9707264.367	1850	5247.170		
Total	9737851.356	1852			

The Table 11 shows that the calculated 'F' value 2.915 is less than the table value 3.00 for df (2, 1850) and hence the null hypothesis there exists no significant difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Birth Order is accepted at 0.05 levels of significance. It is interpreted from the above finding that the Secondary School Students of Tiruchirappalli District do not differ in their Computer Self-Efficacy with respect to the variable Birth Order.

6.8 Testing the significance of difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Gender

Table 13 : Test of Significance:- Difference in Computer Self-Efficacy between the Boys and Girls of Tiruchirappalli District

Gender	N	Mean	Standard Deviation	t	df	Significant Level
Male	919	66.65	79.43	9.439	1725*	0.01
Female	934	35.52	61.23			

*Equal variance not assumed

The Table 13 shows that the calculated t values 9.439 is greater than the table value 2.579 for df = 1725 at 0.01 level of significance. Hence the null hypothesis that there is no significant difference in Computer Self-Efficacy between Boys and Girls of Tiruchirappalli District is rejected at 0.01 level of significance.

6.9 Testing the significance of difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Community

Table 14 : Community – ANOVA Summary

Sources	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	381411.723	5	76282.345	15.058	0.01
Within Groups	9356439.633	1847	5065.750		
Total	9737851.356	1852			

The Table 14 shows that the calculated 'F' value 15.058 is greater than the table value 3.027 for df (5, 1847) and hence the null hypothesis there exists no significant difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Community is rejected at 0.01 levels of significance. Further Post Hoc test was carried out. The results are given in the Table 15.

Table 15 : Post Hoc Tests - Community – Homogeneous Subsets

Computer Self-Efficacy					
	Community	N	Subset for alpha = 0.05		
			1	2	3
Duncan[a,b]	DNC	141	18.7305		
	SC	329		44.0912	
	ST	20		46.2000	
	MBC	323		48.1393	
	BC	979		55.4004	
	FC	61			107.8033
	Sig.		1.000	0.385	1.000
Means for groups in homogeneous subsets are displayed.					
a. Uses Harmonic Mean Sample Size = 74.402.					
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.					

The Table 15 indicates that Community is secluded into three sub-sets. As it can be seen, the Computer Self-Efficacy of Forward Caste (FC) is at the same subset. Similarly the same can be observed for Students of Denotified Class (DNC) and is also at the same subset. As it can be seen, the Computer Self-Efficacy of Scheduled Caste (SC), Scheduled Tribe (ST), Backward Class (BC) and Most Backward Class (MBC) are at the same subset and indicating that there is no significance difference between them (p=0.385). The Computer Self-Efficacy of the Students of Denotified Class (DNC) is significantly different from the Computer Self-Efficacy of the students of Scheduled Caste (SC), Scheduled Tribe (ST), Most Backward Class (MBC), Backward Class (BC) and Forward Caste. The Computer Self-Efficacy of Scheduled Caste (SC) / Scheduled Tribe (ST) / Most Backward Class (MBC) / Backward Class (BC) is significantly different from the Forward Caste (FC). It is interpreted from the above finding that the Secondary School Students of Tiruchirappalli District differ in their Computer Self-Efficacy with respect to the variable Community. Secondary School Students of Forward Caste of Tiruchirappalli District have high level of Computer Self-Efficacy than the students of other Castes of Tiruchirappalli District.

6.10 Testing the significance of difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Type of Family

Table 16 : Type of Family – ANOVA Summary

Sources	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6621.441	2	3310.720	0.629	NS at 0.05
Within Groups	9731229.915	1850	5260.124		
Total	9737851.356	1852			

The Table 16 shows that the calculated 'F' value 0.629 is less than the table value 3.00 for df (2, 1850) and hence the null hypothesis there exists no significant difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Type of Family is accepted at 0.05 levels of significance. It is interpreted from the above finding that the Secondary School Students of Tiruchirappalli District do not differ in their Computer Self-Efficacy with respect to the variable Type of Family.

6.11 Testing the significance of difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Fathers' Educational Qualification

Table 17 : Fathers' Educational Qualification – ANOVA Summary

Sources	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1119996.596	2	559998.298	120.215	0.01
Within Groups	8617854.759	1850	4658.300		
Total	9737851.356	1852			

The Table 17 shows that the calculated 'F' value 120.215 is greater than the table value 4.616 for df (2, 1850) and hence the null hypothesis there exists no significant difference in Computer Self-Efficacy among the

Students of Tiruchirappalli District with respect to the variable Fathers' Educational Qualification is rejected at 0.01 levels of significance. Further Post Hoc test was carried out. The results are given in the Table 18.

Table 18 : Post Hoc Tests - Fathers' Educational Qualification – Homogeneous Subsets

Computer Self-Efficacy					
	Fathers' Qualification	N	Subset for alpha = 0.05		
			1	2	3
Duncan[a,b]	SSLC Graduates & Below	1332	36.5781		
	HSC Graduates	275		72.2436	
	Degree Graduates & Above	246			105.0569
	Sig.		1.000	1.000	1.000
Means for groups in homogeneous subsets are displayed.					
a. Uses Harmonic Mean Sample Size = 354.939.					
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.					

The Table 18 indicates that Fathers' Educational Qualification is secluded into three sub-sets. As it can be seen, the Computer Self-Efficacy of Students whose Fathers are SSLC Graduates & Below is at the same subset. Similarly the same can be observed for Students whose Fathers are HSC Graduates and Students whose Fathers are Degree Graduates & Above and each is at the same subset. The Computer Self-Efficacy of the Students whose Fathers are SSLC Graduates & Below is significantly different from the Computer Self-Efficacy of the Students whose Fathers are HSC Graduates and Students whose Fathers are Degree Graduates & Above.. The Computer Self-Efficacy of the Students whose Fathers are HSC Graduates is significantly different from the Computer Self-Efficacy of the Students whose Fathers are Degree Graduates & Above. It is interpreted from the above finding that the Secondary School Students of Tiruchirappalli District differ in their Computer Self-Efficacy with respect to the variable Fathers' Educational Qualification. Secondary School Students whose Fathers are Degree Graduates & Above have high level of Computer Self-Efficacy than the Students whose Fathers are HSC Graduates and SSLC Graduates & Below of Tiruchirappalli District.

6.12 Testing the significance of difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Mothers' Educational Qualification

Table 19 : Mothers' Educational Qualification – ANOVA Summary

Sources	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	832252.750	2	416126.375	86.444	0.01
Within Groups	8905598.605	1850	4813.837		
Total	9737851.356	1852			

The Table 19 shows that the calculated 'F' value 86.444 is greater than the table value 4.616 for df (2, 1850) and hence the null hypothesis there exists no significant difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Mothers' Educational Qualification is rejected at 0.01 levels of significance. Further Post Hoc test was carried out. The results are given in the Table 20.

Table 20: Post Hoc Tests - Mothers' Educational Qualification – Homogeneous Subsets

Computer Self-Efficacy					
	Mothers' Qualification	N	Subset for alpha = 0.05		
			1	2	3
Duncan[a,b]	SSLC Graduates & Below	1372	39.5386		
	HSC Graduates	271		68.3948	
	Degree Graduates & Above	210			103.1000
	Sig.		1.000	1.000	1.000
Means for groups in homogeneous subsets are displayed.					
a. Uses Harmonic Mean Sample Size = 326.769.					
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.					

The Table 20 indicates that Mothers' Educational Qualification is secluded into three sub-sets. As it can be seen, the Computer Self-Efficacy of Students whose Mothers are SSLC Graduates & Below is at the same subset. Similarly the same can be observed for Students whose Mothers HSC Graduates and Students whose Mothers are Degree Graduates & Above and each is at the same subset. The Computer Self-Efficacy of the Students whose Mothers are SSLC Graduates & Below is significantly different from the Computer Self-

Efficacy of the Students whose Mothers are HSC Graduates and Students whose Mothers are Degree Graduates & Above. The Computer Self-Efficacy of the Students whose Mothers are HSC Graduates is significantly different from the Computer Self-Efficacy of the Students whose Mothers are Degree Graduates & Above. It is interpreted from the above finding that the Secondary School Students of Tiruchirappalli District differ in their Computer Self-Efficacy with respect to the variable Mothers' Educational Qualification. Secondary School Students whose Mothers are Degree Graduates & Above have high level of Computer Self-Efficacy than the students whose Mothers are HSC Graduates and SSLC Graduates & Below of Tiruchirappalli District.

6.13 Testing the significance of difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Fathers' Occupation

Table 21 : Fathers' Occupation – ANOVA Summary

Sources	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	534191.399	3	178063.800	35.773	0.01
Within Groups	9203659.957	1849	4977.642		
Total	9737851.356	1852			

The Table 21 shows that the calculated 'F' value 35.773 is greater than the table value 3.792 for df (3, 1849) and hence the null hypothesis there exists no significant difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Fathers' Occupation is rejected at 0.01 levels of significance. Further Post Hoc test was carried out. The results are given in the Table 22.

Table 22 : Post Hoc Tests - Fathers' Occupation – Homogeneous Subsets

Computer Self-Efficacy						
	Father Occupation	N	Subset for alpha = 0.05			
			1	2	3	4
Duncan[a,b]	Daily Wages (Cooly)	226	17.1681			
	Farmers	835		44.3353		
	Professionals	414			62.7440	
	Business People	378				72.9021
	Sig.		1.000	1.000	1.000	1.000
Means for groups in homogeneous subsets are displayed.						
a. Uses Harmonic Mean Sample Size = 374.415.						
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.						

The Table 22 indicates that Fathers' Occupation is secluded into four sub-sets. As it can be seen, the Computer Self-Efficacy of Students whose Fathers are Daily Wages (Cooly) is at the same subset. Similarly the same can be observed for Students whose Fathers are Farmers, Professionals and Business People and each is at the same subset. The Computer Self-Efficacy of the Students whose Fathers are Daily Wages (Cooly) is significantly different from the Computer Self-Efficacy of the Students whose Fathers are Farmers, Professionals and Business People. The Computer Self-Efficacy of the Students whose Fathers are Farmers, is significantly different from the Computer Self-Efficacy of the Students whose Fathers are Professionals and Business People. The Computer Self-Efficacy of the Students whose Fathers are Professionals, is significantly different from the Computer Self-Efficacy of the Students whose Fathers are Business People. It is interpreted from the above finding that the Secondary School Students of Tiruchirappalli District differ in their Computer Self-Efficacy with respect to the variable Fathers' Occupation. Secondary School Students whose Fathers are Business People have high level of Computer Self-Efficacy than the Students whose Fathers are Professionals, Farmers, and Daily Wages (Cooly) of Tiruchirappalli District.

6.14 Testing the significance of difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Mothers' Occupation

Table 23 : Mothers' Occupation – ANOVA Summary

Sources	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	211439.798	3	70479.933	13.680	0.01
Within Groups	9526411.557	1849	5152.197		
Total	9737851.356	1852			

The Table 23 shows that the calculated 'F' value 13.680 is greater than the table value 3.792 for df (3, 1849) and hence the null hypothesis there exists no significant difference in Computer Self-Efficacy among the

Students of Tiruchirappalli District with respect to the variable Mothers' Occupation is rejected at 0.01 levels of significance. Further Post Hoc test was carried out. The results are given in the Table 24.

Table 24 : Post Hoc Tests - Mothers' Occupation – Homogeneous Subsets

Computer Self-Efficacy				
	Mother Occupation	N	Subset for alpha = 0.05	
			1	2
Duncan[a,b]	Daily Wages (Cooly)	182	20.5385	
	Farmers	1355		52.6480
	Business People	115		55.6696
	Professional	201		64.4527
	Sig.		1.000	0.120
Means for groups in homogeneous subsets are displayed.				
a. Uses Harmonic Mean Sample Size = 200.972.				
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.				

The Table 24 indicates that Mothers' Occupation is secluded into two sub-sets. As it can be seen, the Computer Self-Efficacy of Students whose Mothers are Daily Wages (Cooly) is at the same subset. As it can be seen, the Computer Self-Efficacy of Students whose Mothers are Farmers, Business People and Professionals are at the same subset and indicating that there is no significance difference between them (p=0.120). The Computer Self-Efficacy of the Students whose Mothers are Daily Wages (Cooly) is significantly different from the Computer Self-Efficacy of the Students whose Mothers are Farmers, Business People and Professionals. It is interpreted from the above finding that the Secondary School Students of Tiruchirappalli District differ in their Computer Self-Efficacy with respect to the variable Mothers' Occupation. Secondary School Students whose Mothers are Professionals have high level of Computer Self-Efficacy than the Students whose Mothers are Business People, Farmers and Daily Wages (Cooly) of Tiruchirappalli District.

6.15 Testing the significance of difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Having Computer in Home

Table 25 : Test of Significance:- Difference in Computer Self-Efficacy between Students of Tiruchirappalli District who are having Computer in Home and not having Computer in Home

Having Computer	N	Mean	Standard Deviation	t	df	Significant Level
Yes	654	104.89	78.52	24.730	926*	0.01
No	1199	21.55	48.10			

*Equal variance not assumed

The Table 25 shows that the calculated t values 24.730 is greater than the table value 2.581 for df = 926 at 0.01 level of significance. Hence the null hypothesis that there is no significant difference in Computer Self-Efficacy between Students of Tiruchirappalli District who are having Computer in Home and not having Computer in home is rejected at 0.01 level of significance.

6.16 Testing the significance of difference in Computer Self-Efficacy among the Students of Tiruchirappalli District with respect to the variable Hours of Using Computer in Home

Table 27 : Test of Significance:- Difference in Computer Self-Efficacy between the Students of Tiruchirappalli District who are using Computer More than One Hour and One Hour & Less than One Hour

Hours of using Computer	N	Mean	Standard Deviation	t	df	Significant Level
Less than and Equal to One Hour	470	99.53	74.25	2.617	292*	0.01
More than One Hour	184	118.60	87.25			

*Equal variance not assumed

The Table 27 shows that the calculated t values 2.617 is greater than the table value 2.593 for df = 292 at 0.01 level of significance. Hence the null hypothesis that there is no significant difference in Computer Self-Efficacy between Students of Tiruchirappalli District who are Using Computer More than One Hour and Students who are Using Computer One Hour & Less than One Hour is rejected at 0.01 level of significance.

VI. RESULTS AND DISCUSSION

The present study reveals that Computer Self-Efficacy of Secondary School Students of Tiruchirappalli District is at a low level. Similar findings have been reported by the McIlroy, Sadler, & Boojawon (2007). However Kutluca (2009) found that Computer Self-Efficacy perceptions of elementary school students were at a good level; Whitley (1997) found that pupils in Higher Secondary Education had a more Computer Self-Efficacy. Tuti, 2005; Uzun, Ekici & Sağlam, 2010 concluded that Computer Self-efficacy perceptions of the elementary school students were at a moderate level.

The present study also reveals that there exists significant difference in Computer Self-Efficacy among the Secondary School Students of Tiruchirappalli District with respect to the following variables Type of School Management, Type of School, Locale of the School, Medium of Instruction, Gender, Community, Fathers' Educational Qualifications, Mothers' Educational Qualification, Fathers' Occupation, Mothers' Occupation, Having Computer in Home and Hours of Using Computer. Students of Unaided Private Schools have the highest level of Computer Efficacy than the students of Government Aided Private Schools and Government Schools of Tiruchirappalli District. This finding is contrary to the findings of Thangarasu, (2011). Students differ in their Computer Self-Efficacy with respect to the variable Type of School. This finding is contrary to the findings of Dufrene *et.al.*, 2011; Thangarasu, 2011. The Students differ in their Computer Self-Efficacy with respect to the variable Locale of the School. Significant difference in Computer Self-Efficacy with respect to the variable Locale of the School has also been reported by Vinaitheerthan & Jomy Johnson, 2009; Mallika, 2013. Students of English Medium have more Computer Self-Efficacy than Tamil Medium Students. This result shows parallelism with the result of the research that was conducted by Mallika (2013). Males have more Computer Self-Efficacy than that of the Females. This finding is similar to that of previous studies of Chen,1986; Miura, 1987; Carlson & Grabowski, 1992; Torkzadeh & Koufter, 1994; Busch, 1995; Comber *et al.*, 1997; Ramalingam & Wiedenbeck, 1998; Cassidy & Eachus, 2001; Mumtaz, 2001; Durndell & Haag, 2002; Işıksal & Aşkar, 2003; Cheong *et al.*, 2004; Hsu & Huang, 2006; Anderson and Maninger, 2007; Ekici & Uzun, 2007; Vekiri & Chronaki, 2008; Pamuk & Peker,2009; Vinaitheerthan & Johnson, 2009; Topkaya, 2010; Uzun, Ekici & Sağlam, 2010; Halder & Chaudhuri, 2011: Simek, 2011; Chen, 2012; Nina , 2012; Gecer, 2013; Kaplan, 2013. This findings is contrary to findings of Algan, 2006; Ekici and Berkant, 2007; Berkant and Efendioğlu, 2010; Thangarasu, 2011; Mallika, 2013 in which Females have more Computer Self-Efficacy and to the findings of Torkzadeh, Pflughoeft & Hall, 1999; Chao, 2001; Smith, 2001; Akkoyun, 2003; Johnson & Wardlow, 2004; Olalere, 2005; Sam, Othman and Nordin, 2005; Seferoğlu, 2005; Tuti, 2005; Imhof *et al.*, 2007; Özçelik and Kurt, 2007; Özden et al., 2007; Adebowale *et al.*, 2009; Imer and Yürekli, 2009; Kutluca, 2009; Gulten, 2011; in which Males and Females have equal levels of Computer Self-Efficacy. This study shows students differ in their Computer Self-Efficacy with respect to their community. The Educational Qualification and Occupation of the Parents' have direct relationship with Students' Computer Self-Efficacy. This result shows parallelism with the result of the research that was conducted by Kutluca, 2009; Uzun, Ekici and Sağlam, 2010; DuFrene *et al.*, 2011, Geçer, 2013. The present study reveals that the students having Computer in Home have recorded a higher level of Computer Self-Efficacy than students not having Computer in Home. This finding is similar to that of previous studies by Hill, Smith & Mann,1987; Torkzadeh & Koufterous, 1994; Houle, 1996; Karsten & Roth, 1998; Hakverdi *et al.*, 2007; Chen, 2012; Gecer, 2013. Similar to other studies Torkzadeh & Koufterous, 1994; Karsten & Roth, 1998; Aşkar & Umay, 2001; Tuti, 2005; Anderson and Maninger, 2007; Bovée *et al.*, 2007; Hakverdi *et al.*, 2007; Özçelik & Kurt, 2007; Çetin, 2008, Drent & Meelissen, 2008; Uzun, Ekici & Sağlam, 2010; Geçer, 2013, this study also shows that Students differ in their Computer Self-Efficacy with respect to variable Hours of Using Computer.

VIII CONCLUSION

The present study was conducted to study the Computer Self-Efficacy of Secondary School Students of Tiruchirappalli District with respect to the variables Type of School Management, Type of School, Locale of the School, Medium of Instruction, Type of Staying, Birth order, Gender, Community, Type of Family, Fathers' Educational Qualifications, Mothers' Educational Qualification, Fathers' Occupation, Mothers' Occupation, Having Computer in Home and Hours of Using Computer at Home. Except Type of Staying, Birth Order and Type of Family, Secondary School Students of Tiruchirappalli District differ significantly in their Computer Self-Efficacy in all the select variables. The students of Unaided Private Schools have recorded highest Computer Self-Efficacy than students of Government Aided Private Schools and Government Schools. This may be due to the availability of excellent Computer facilities available in the Unaided Private Schools. This clearly implies that there is an urgent need to equip all Government Schools with adequate numbers of Computers for classroom transactions. The students of Boys Schools have secured highest achievement than the students of Girls Schools and Co-Educational Schools. This may be due to the fact that Boys have more access to use Computer than Girls. Hence easy access to Computers for Girls should be made by supplying adequate number of Computers to Girls Schools. The Students of Town Panchayat Area have recorded highest Computer

Self-Efficacy than students of Corporation, Village Panchayat Area and Municipality Area. Though Municipal Area has more access to Computer for students, the students of Municipal Area have the relatively least Computer Self-Efficacy. Hence the reasons for such a low level of Computer Self-Efficacy of Municipal Area students should be probed. English Medium has recorded a higher level of Computer Self-Efficacy than students of Tamil Medium. This may be due to the more opportunities available for the utilization of Computer in the English Medium Schools. The Boys have scored significantly higher than the Girls of Tiruchirappalli District. This evinces that conducive environment for utilization of Computers by Girls should be created in Schools for reducing Gender digital gap. The Students of Forward Community have got more Computer Self-Efficacy than others especially the Denotified Communities. Students whose parents are more educated have recorded highest Computer Self-Efficacy. This may be due to the parental care on providing educational opportunities at Home. The wards of Professionals / Business People have scored the highest Computer Self-Efficacy than the wards of Farmers and Daily Wages (Cooly). Hence special computer literacy improvement programme may be conducted in school after school hours to the wards of Farmers and Daily Wages (Cooly). Students having Computer in Home and using more than one hour have recorded a higher level of Computer Self-Efficacy than Students not using Computer in Home. This finding reveals that using Computer enhances Computer Self-Efficacy since more time on task may logically translate into a higher level of perceived ability. Hence in Schools steps may be taken to provide Computers with all kinds of application Software right from Office automation to Media Developing Software which in turn develop the 21st Century skills which are needed to have effective 21st Century citizens.

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