Effects of E-Learning Media on Social Skills Enhancement of Secondary Level Students

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Abstarct

This surey study was *study was aimed to investigate the effects of e-learning media on social skills enhancement of secondary level science students.the study was aimed to evaluate the effects of e-learning media on social skills enhancement of male and female science students, and to find out the differences between the impact of e-learning media on social skills enhancement of male and female science students. Statistical tools Chi- square test was used for the study. Study revealed that the use of e-learning media by students in their daily life had a significantly positive impact on majority of social skills enhancement of male and female science students. Analysis of the differences of the social skills enhancement between male and female students showed that most of the social skills of male students were significantly enhanced than the female students, whereas in some of the social skills female students showed significant improvement than the male students. Furthermore, in few social skills, indistinguishable enhancement was found between male and female students. It is concluded that majority of the social skills of male and female were enhanced by using E-learning media. It was also revealed that in majority of the social skills enhancement, male students were significantly better than the female by using e-learning media.*

Keywords: Effects, E-Learning media, Secondary level students, Social Skills, Social Skills Enhancement.

Introduction

The advancement in information technology and their suitable use in daily life and especially in learning have contributed significantly in different fields of life. The use of e-learning media in the field of education has become a standard. The use of educational

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technology for learning purpose motivates learners and teachers active, concentrated and involves them in learning process; to build and enhance knowledge, to construct and develop skills of problem solving, and to find out variety of solutions (Ozmen, 2008). The integration of e-learning media in the educational discipline has wonderful potentials to provide the best possible outcomes equally for both the teachers and trainees in the teaching and learning process (Isman, Baytekin, Balkan, Horzum & Kiyici, 2002).

Related Studies

In educational process, modern technologies have been used in the form of educational technology. Among these innovations, one is the emergence of e-learning media that assist the e-learning concept, which contributes a key role in all fields of life. E-learning media have many impacts in the daily life of students including students' social adjustment in the environment and society. Social skills comprises of many socially suitable and acceptable behaviours which facilitate a person to enter interpersonal relationships and deal with others in a befitting manners. Social skills can be taught, practiced and learned through different means. Studies on cognitive enhancement and social skills development have already been conducted, but they do not specifically focus on secondary level male and female students (Anders & Bostrom, 2006). Another study reveals that e-learning media is contributing tremendously in enhancing social skills of the students. But on the other hands, a few researchers criticize computer-mediated based communities in a way that they are unable to foster substantive and genuine personal relationships and unable to create legitimate social bonding. Research study argues that online groups are a new type of social occupancy (Rheingold, 1999). According to Mayer (2001), theory of E-learning explains the principles of cognitive science of useful multimedia based learning using educational training aids. Olojo (2012) discussed that e-learning media is a vast and flourishing market with a huge potential in education and social adjustment. In his empirical research conducted from the year 1996 till year 2008, he concluded that learners using e-learning technology / media achieved better results in different skills than the students who did not use e-learning media.

In the past great emphasis were given on preparing trainers and learners as knowledgeable, skilled problems solver, makers of decision, and team workers having good logical skills of problems recognizers, so as to enhance cognitive performance and social skills in the real life. Studies conducted by (Perez-Prado and Thirunarayanan, 2002) also revealed that learners can benefit from technology improved shared learning methods and the interactive learning

process. Moreover, Roschelle, Pea, Hoadley, Gordin, & Means (2000) classified four basic features of how technology can augment both what and how students be taught in the classroom. These four essentials are; active involvement, taking part in groups, regular interaction and feedback, and lastly connections to real-world perspective. Results of one study revealed that KG children were on task 90% of the time when they were on the computer (Bergin, Ford, & Hess, 1993).

Computers also offer regular and repeated motivation (Parette, Hourcade, & Heiple, 2000). Computers let students to work autonomously at their own choice and speed (Parette et al., 2000). Scaffolding is very essential in enhancing skills and software programs often give widespread scaffolding of learning. With the computer, children can participate in virtual games and manipulate variables that might not be possible in the real world. Researchers found that using a computer with supporting scheme elevate children's abilities more than using only the computer (Clements, 1994; Haugland & Shade, 1994). Polly (2011) described that technology has been revealed positive influence learner learning when learners discover technology based tasks that all together require them to use HOTS (higher order thinking skills) such as analysing, synthesising or evaluating information or creating new illustrations of knowledge. Majority of e-learning designs that are regarded as good learning tradition appear to share the same principles of design that stem from a constructivist viewpoint of learning. Van Vliet & Burgess and Fernback and Thomspon (2002) stated that communities have the basics of social interaction, a common value system, and a joint symbol system. The said three basics underlie much of the research study into E- learning communities. Thomson, Straubhaar & Bolyard (1998) agreed other researchers' apprehension of the value of electronic communities that learning through online is more likely to build social isolation than connectivity.

Proof reveals that use of e-learning tools can raise student independence and self-regulated learning for certain students. Learners presume better responsibility for their own learning when they use tools of ICT, functioning more independently and successfully. E-learning tools provide students assignments better suited to individual requirements and make it easier to arrange their own learning, through the use of digital portfolios. Peer-based learning has distinctive features that recommends substitute to formal instruction (Mizuko, 2008). Different reviewed studies explain that impacts of ICT on the development of competency particularly, team work, self-regulating learning and skills of higher order thinking that are not yet recognised by many education systems". Research studies on the

usefulness of technology on students' performance and achievement. In the year, 2001, research study of eMINTS (enhancing Missouri's instructional networked teaching strategies) program, a state based technology integration initiative, described that eMINTS students constantly obtained high scores on the Missouri Assessment Program (MAP) than non-eMINTS students. eMINTS (2005) test results maintain to prove that, on the majority state tests, learners registered in eMINTS classrooms obtained higher results than students joined in non-eMINTS classrooms and that low-income and special education students in eMINTS classes generally score higher than their non-eMINTS colleagues.

There are a lot of studies which have addressed gender differences in aggression (Cillessen & Mayeux, 2004). A higher level of physical and overt/direct aggression has been demonstrated for boys, while a higher level of relational/indirect aggression is typical for girls. Learners can benefit from technology improved shared learning methods and the interactive learning process. Moreover, Roschelle, Pea, Hoadley, Gordin, & Means (2000) classified four basic features of how technology can augment both what and how students be taught in the classroom. These four essentials are; active involvement, taking part in groups, regular interaction and feedback, and lastly connections to real-world perspective. There is an agreement by the researchers that both students and teachers experience that use of ICT significantly gives student inspiration and commitment in learning. The useful use of multimedia can raise student's stimulus by positively persuading motivation factors and resultantly enhance cognitive and social skills of learners. Keller's (1987, p. 3) used the multimedia device for study purpose. His model presented a synthesis of motivational influences from behavioural contingency design and organization; cognitive accounting of person capabilities, skills and awareness; and the anticipation value theory of motivation usually functional in the context of social learning theory. Keller thought this input as adding the heart to general understanding of the nature of the learner. Keller's ARCS model of motivation involves four factors. These are named as (a) Attention, (b) Relevance, (c) Confidence and (d) Satisfaction. Case research by Khuram (2015) discovered the teachers' views on the application of visual tools like animation videos, pictures, films and projectors as a tool of motivation in increasing the attention of students in literary texts reading.

Study carried out by Deepak (2011) revealed that female students got better grades than male students in the whole test review. In Turkey, a research study was conducted and revealed that a small size of female learners got admission in university with smaller scores. But, once they got admission in the university, they performed well in their studies and did

better than their male students. Ajobeje (2012) exposed that male learners achieved better grades than their female classmates in the subject of economics for the year 2006-2010 examination sessions of senior secondary schools. Luigi Guiso (2008) stated that a research study conducted on cross country has shown that there are no systematic gender differences in average / mean test scores.

Michelon (2006) pointed out that there are differences in cognitive abilities of male and female. The main ambiguity is that whether males or females do better in a variety of cognitive activities. The findings were established to be conflicting. These cognitive features are dissimilar in males and females. Gender diversity in cognition, or intellectual skills, are broadly recognized in the recent scientific literature. Genetic and inherent differences in mixture with surroundings and civilization have resulted in the cognitive differences between men and women. In general, females demonstrate advantages in verbal fluency, perceptual speed, correctness and fine motor skills. While males do better than females in spatial, functioning memory and numerical aptitude.

One more impact found by researchers is improving family interaction. Various systems of school launch a portal of e-learning so that parents can entrance to trail assignments, homework and correspond with staff and teachers, offering occasions for increased awareness and talk of assignments/homework, progress of student etc. Furthermore, when students use computers at home, they are able to study freely in the drawing room with family members instead of studying in a separate room. This provides better visibility to parents about school assignments and open new opportunities for talks.

The use of electronic gadgets influences cognitive and academic skills as well as form social interactions and development of students. Interactions of students and relatives, parents and additional friends, one apparent effect was the frequent reverse of the conventional parent and students' link with the computer sense students taking on the responsibility of teacher to the parent. It have observed that youngsters are more expected to assist their parents with computers than parents are to help out their children with boys unjustifiably assisting their fathers and girls improperly serving their mothers. Moreover, several have assumed that the fairness in online communications amongst user of computer of all ages lean to corrode power composition, with the consequences that children will be less admit of parental authority. Research pointed out that playing moderate games have small social effect on learners. However apprehensions have been raised about playing games excessively, particularly when the games include aggression. Research proposes that playing inhuman

computer games can raise aggressive behavior students in new situations. Wellman (1996) writes that utilizing computers to speak with others is gradually more accepted activity, mainly among young girls. Young often build social friends online through the different options nowadays accessible on the Internet. Study proposes that the social outcomes of such computer use may depend, in part, on whether these online social links are with family and friends, or with unfamiliar person and friends.

Study conducted by Hitchcock, Dowrick and Prater (2003) completed a literature review of 18 studies, suggesting that self-modeling video can be applied effectively to help learners communication, behaviour and academic achievements in educational environment. It was found that TV shows and movies have the abilities to affect behaviour, attitude, emotional experiences, and conduct pattern of children. So these tools have the potentials to provide observational learning opportunities to develop and progress. In another review it was described that virtual reality like computer provides a human computer interaction in which users are actively participating within a computer three dimensional virtual world (Riva, 2004). The application of virtual reality appears to hold potential for enhancing the acquisition, maintenance and generalization of the social skills from the formal classroom to informal natural settings. Different researches conducted on the role of CAI on the interest and retention of students (Ali, 2012), effects of CAL on the achievement and problem solving skills of students. (Atif, 2014, p.272), effects of computer based learning on students attitude and achievements. Different researches conducted on the impact of technology, ICT and e-learning media and cognitive and social skills enhancement revealed that the amount of time students are spending on the e-learning tools for teaching learning purpose at classrooms and in homes have raised queries regarding how the use of e-learning technology can make a difference in students social skills enhancement. A study revealed that at secondary level, girls use computer for the play purpose 5 hours a week and boys use the same for 13 hours a week. Literatures on cognitive research suggest that using learning tools and media enhance students' capability to read and visualize imagery in three dimensional spaces and trail various images concurrently. The inadequate evidences accessible also indicate that use of e-learning media is connected to somewhat better social skills enhancement in the form of they behave in the routine life. Whereas other findings about the effects of technology on students' social development are more mixed, and some evidence indicates that the application of e-learning technology has a harmful impact on students' friendships and family relations. In addition some studies showed that extensive use of the

Internet may be connected to increase in isolation and sadness. Some serious findings are that involving in aggressive computer games may increase violent behaviors and that the use of computers may distort a learner capability to differentiate real life from simulation. On the other hand use of e-learning tools, enhances students communication skills, skills for learning, problem solving skills, global friendship, awareness about the other society and increase social enhancement of the students. The researchers concluded that more systematic research study is desirable, but the research will never be perfect. The research would help in these mentioned areas to help students, parents, community, and policy makers to exploit the positive effects and to curtail the harmful effects of e-learning media on students' lives.

Statement of the Problem

In our daily life increased accessibility and use of e-learning media at schools and homes by the young students is observed by us. However, still it is not clear whether e-Learning media is really helpful in enhancing social skills of students or not. Therefore, kkeeping in view the above discussions and vital role of e-learning media in education in general and in the process of teaching learning in particular, the present study was conducted to investigate the effects of e-Learning media on social skills enhancement of science students studying at secondary level.

Objectives of the Study

The objectives of the study were:

1. To investigate the effectiveness of E-Learning media on the development of social skills of male science students at secondary level.
2. To discover the effects of E-Learning media on the social skills development of female science students at secondary level.
3. To evaluate the differences between the effects of E-Learning media on social skills development of male science students and female science students at secondary level

Hypotheses of the Study

Considering the research objectives and comprehensive study of research literatures on the effects of e-learning media on social skills enhancement, the following hypotheses that are stated in null form were developed and tested:-

$H_0 1$: There is no significant effect of e-learning media on social skills enhancement of male science students exposed to e-learning media at secondary level.

$H_0$2: There is no significant effect of e-learning media on social skills enhancement of female science students exposed to e-learning media at secondary level.

$H_0$3: There is no significant difference between the social skills enhancement of male science and female science students exposed to e-Learning media at secondary level.

Methodology of The Study

To evaluate the effects of e-learning media on social skills enhancement of secondary level students, descriptive / survey based study (Students' self reported survey of and teachers' observational survey of their respective students) was carried out.

Population of the Study

Population of the study was taken from Province of KPK

- Male and female students of science group of the secondary level classes.
- Male and female science teachers of the secondary level classes.
- Total 11212 male and female students of secondary level enrolled in science group of class-9 and their respective 315 science teachers.

Sample of the Study

Purposive sampling was use for the coolecting of data and two schools one from Peshawar and other from Nowshera was chosen. However, first of all the sample 320 students were individually surveyed. After that, total 80 students were selected (40 male and 40 female) equally from districts Peshawar and Nowshera on the basis that the sample students were using e-learning media almost always or often in their daily life during school and home. Similarly the sample 08 science teachers selected as research assistants for the purpose to conduct students' survey and teachers' observational survey of their respective students.

Instruments of the Study

The following research tools were used for the present study:-

a) An initial survey was conducted on total 320 sample students to segregate / select the sample students; who were using e-learning media almost always or often in their daily life.
b) Two other surveys questionnaires / social skills rating checklists were prepared for the purpose to measure the effects of E-Learning media on social skills enhancement of students.
   (i) One was students self report survey
   (ii) Second was teachers' observational survey of respective students.

Data Analysis

Total responses of social skills rating checklist of students' survey and teachers' observational survey were calculated. SPSS version 17 was used for the analysis of the data. Also hypotheses were tested at significance level alpha: $\alpha = 0.05$. For testing hypothesis, Chi Square test was applied, calculated, analyzed and interpreted the data. Chi- square test was used to compare frequency patterns. Therefore significance of difference between the male science students and female science students were found by applying Chi-square test. Looking at the collected data conclusions to be made that:

a. What is the general pattern of responses of students about social skills enhancement?
b. Are there any gender differences between male and female students social skills enhancement?

Data analysis and interpretation of Students' survey and Teachers survey are explained in the following tables and its details in subsequent paragraphs.

AA	:	Almost always	OFT	:	Often
ST	:	Sometimes	AN	:	Almost never

(I) Relationship Building Skill

Table 1: *Opinion about Relationship Building*

S No / Statement	Students Responses	Level of Agreement				Df	Table value	χ^2
		AA	**OFT**	**ST**	**AN**			
1. Make friends easily	40 Male	6	22	11	1	3	7.815	24.20
	40 Female	6	13	18	3	3	7.815	13.80
2. If makes a mistake or hurt a friend' feelings, asks for apology	40 Male	15	20	4	1	3	7.815	24.20
	40 Female	15	19	4	2	3	7.815	20.60
3. Disagrees with others without fighting or arguing	40 Male	5	17	14	4	3	7.815	12.60
	40 Female	4	19	13	4	3	7.815	16.20
4. Gives time to other people	40 Male	14	17	8	1	3	7.815	15.00
	40 Female	8	23	6	3	3	7.815	23.80
5. Invites friends to join social gatherings	40 Male	5	16	15	4	3	7.815	12.20
	40 Female	9	18	10	3	3	7.815	11.40
6. Avoids teasing others	40 Male	22	12	4	2	3	7.815	24.80
	40 Female	13	23	3	1	3	7.815	30.80

* Significance level : $\alpha = 0.05$, Degree of freedom: df = 3, Chi Squares(Cal value) : χ^2

(I) Relationship Building Skill

Table 2*: Opinion about Relationship Building*

Statement	Teachers Observation	Level of Agreement				Df	Table value	χ^2
		AA	**OFT**	**ST**	**AN**			
1. Make friends easily	40 Male	6	25	8	1	3	7.815	32.60
	40 Female	5	22	12	1	3	7.815	25.40
2. If makes a mistake or hurt friends' feelings, asks for apology easily	40 Male	14	22	3	1	3	7.815	29.00
	40 Female	14	21	4	1	3	7.815	25.40
3. Disagrees with others without fighting or arguing	40 Male	4	23	12	1	3	7.815	29.00
	40 Female	5	25	8	2	3	7.815	31.80
4. Gives time to other people	40 Male	9	22	8	1	3	7.815	23.00
	40 Female	5	25	9	1	3	7.815	33.20
5.Invites friends to join social gatherings	40 Male	9	23	7	1	3	7.815	26.00
	40 Female	10	9	19	2	3	7.815	14.00
6. Avoids teasing others	40 Male	21	16	2	1	3	7.815	30.00
	40 Female	23	14	2	1	3	7.815	33.00

* Significance level : $\alpha = 0.05$, Degree of freedom: df = 3, Chi Squares(Cal value) : χ^2

(II) Emotional Management Skills

Table 3: *Opinion about Emotional Management*

S No / Statements	Students Responses	Level of Agreement				Df	Table value	χ^2
		AA	**OFT**	**ST**	**AN**			
1. Recognizes likes and dislikes	40 Male	9	19	11	1	3	7.815	16.40
	40 Female	14	15	8	3	3	7.815	9.40
2. Identifies emotions of others	40 Male	14	17	8	1	3	7.815	15.00
	40 Female	12	18	5	5	3	7.815	11.80
3.Expresses care and sympathy towards friends	40 Male	25	11	3	1	3	7.815	35.60
	40 Female	26	11	2	1	3	7.815	40.40
4.Refrains from violent behaviours towards friends	40 Male	16	15	6	3	3	7.815	12.60
	40 Female	16	16	4	2	3	7.815	20.00

5. Does not exhibit intense fears and phobias	40 Male	17	17	5	1	3	7.815	20.20
	40 Female	13	13	3	7	3	7.815	11.60
6.Agrees with friends easily	40 Male	8	21	10	1	3	7.815	20.60
	40 Female	6	16	16	2	3	7.815	15.20

* Significance level : α = 0.05, Degree of freedom: df = 3, Chi Squares(Cal value) : χ^2

(II) Emotional Management Skill

Table 4: *Opinion about Emotional Management*

Statement	Teachers Observation	Level of Agreement				Df	Table value	χ^2
		AA	**OFT**	**ST**	**AN**			
1. Recognizes likes and dislikes	40 Male	10	24	5	1	3	7.815	30.20
	40 Female	8	20	11	1	3	7.815	18.60
2. Identifies emotions of others	40 Male	5	18	5	2	3	7.815	17.80
	40 Female	14	12	13	1	3	7.815	11.00
3.Expresses care and sympathy towards friends	40 Male	17	20	2	1	3	7.815	29.40
	40 Female	15	22	2	1	3	7.815	31.00
4. Refrains from violent behaviours towards friends	40 Male	9	22	8	1	3	7.815	23.00
	40 Female	11	26	2	1	3	7.815	40.20
5. Does not exhibit intense fears and phobias	40 Male	22	11	5	2	3	7.815	23.40
	40 Female	11	19	9	1	3	7.815	16.40
6. Agrees with friends easily	40 Male	5	26	8	1	3	7.815	36.00
	40 Female	8	26	4	2	3	7.815	36.00

* Significance level : α = 0.05, Degree of freedom: df = 3, Chi Squares(Cal value) : χ^2

(III) Self Regulation Skills

Table 5: *Opinion about Self-Regulation*

Statement	Students Responses	Level of Agreement				Df	Table value	χ^2
		AA	**OFT**	**ST**	**AN**			
1. Allows others to comfort if upset or agitated	40 Male	12	24	3	1	3	7.815	33.00
	40 Female	13	21	5	1	3	7.815	23.60

2. Adjusts himself/herself when in tension or upset	40 Male	8	24	7	1	3	7.815	29.00
	40 Female	10	22	7	1	3	7.815	23.40
3. Accepts losing at a game without becoming upset / angry	40 Male	16	6	11	7	3	7.815	5.00
	40 Female	10	16	9	5	3	7.815	6.20
4.Lives life in befitting manners	40 Male	23	11	5	1	3	7.815	27.60
	40 Female	10	22	5	3	3	7.815	21.80
5. Accept "No" of others in a polite way	40 Male	11	15	12	2	3	7.815	9.40
	40 Female	8	14	16	2	3	7.815	12.00
6. Able to end conversations appropriately	40 Male	11	17	10	2	3	7.815	11.40
	40 Female	13	14	7	4	3	7.815	9.00

* Significance level : α = 0.05, Degree of freedom: df = 3, Chi Squares(Cal value) : χ^2

(III)Self Regulation Skills

Table 6: *Opinion about Self-Regulation Skills*

Statement	Teachers Observation	Level of Agreement				Df	Table value	χ^2
		AA	**OFT**	**ST**	**AN**			
1. Allows others to comfort if upset or agitated	40 Male	6	28	5	1	3	7.815	44.00
	40 Female	8	27	2	3	3	7.815	40.60
2. Adjusts himself when in tension or upset	40 Male	4	29	5	2	3	7.815	48.00
	40 Female	2	25	12	1	3	7.815	37.40
3.Accepts losing at a game without becoming upset/angry	40 Male	9	17	13	1	3	7.815	14.00
	40 Female	7	19	12	2	3	7.815	15.80
4.Lives life in befitting manners	40 Male	15	20	4	1	3	7.815	24.20
	40 Female	14	18	4	4	3	7.815	15.20
5. Accept "No" of others in a polite way	40 Male	9	22	8	1	3	7.815	23.00
	40 Female	8	24	6	2	3	7.815	28.00
6.Able to end conversations appropriately	40 Male	9	20	10	1	3	7.815	18.20
	40 Female	10	19	10	1	3	7.815	16.20

* Significance level : α = 0.05, Degree of freedom: df = 3, Chi Squares(Cal value) : χ^2

(IV) Skills for Learning

Table 7: *Opinion about Skills for Learning*

Statement	Students Responses	Level of Agreement				Df	Table value	χ^2
		AA	**OFT**	**ST**	**AN**			
1.Wants to improve upon their learning skills	40 Male	27	9	3	1	3	7.815	42.00
	40 Female	27	8	3	2	3	7.815	40.60
2. Concentrates on the study material	40 Male	17	10	9	4	3	7.815	8.60
	40 Female	15	16	8	1	3	7.815	14.60
3. Gives more time to study and do homework on time	40 Male	7	11	18	4	3	7.815	11.00
	40 Female	10	9	18	3	3	7.815	11.40
4. Follows the teachers' instructions	40 Male	22	13	4	1	3	7.815	27.00
	40 Female	27	8	4	1	3	7.815	41.00
5.Remembers the study items for long time	40 Male	23	11	5	1	3	7.815	27.60
	40 Female	10	22	7	1	3	7.815	23.40
6.Presents the study contents effectively	40 Male	11	18	10	1	3	7.815	14.60
	40 Female	9	18	11	1	3	7.815	13.00

* Significance level : $\alpha = 0.05$, Degree of freedom: df = 3, Chi Squares(Cal value) : χ^2

(IV) Skills for Learning

Table 8: *Opinion about Skills for Learning*

Statement	**Teachers Observation**	**Level of Agreement**				**Df**	**Table value**	χ^2
		AA	**OFT**	**ST**	**AN**			
1. Wants to improve upon learning skills	40 Male	26	7	6	1	3	7.815	36.20
	40 Female	23	14	2	1	3	7.815	33.00
2. Concentrates on the study material	40 Male	14	19	6	1	3	7.815	19.40
	40 Female	15	21	3	1	3	7.815	27.60
3. Gives more time to study and do home work on time	40 Male	5	8	22	5	3	7.815	19.80
	40 Female	5	23	11	1	3	7.815	27.60
4.Follows the teachers' instructions	40 Male	16	20	3	1	3	7.815	26.60
	40 Female	23	14	2	1	3	7.815	33.00

5.Remembers the study items for long time	40 Male	5	20	14	1	3	7.815	22.20
	40 Female	7	19	11	2	3	7.815	17.40
6.Presents the study contents effectively	40 Male	10	18	10	2	3	7.815	12.80
	40 Female	13	14	12	1	3	7.815	11.00

* Significance level : α = 0.05, Degree of freedom: df = 3, Chi Squares(Cal value) : χ^2

(V) Verbal Conversation Skill

Table 9: *Opinion about Verbal Conversation*

Statement	**Students Responses**	**Level of Agreement**				**Df**	**Table value**	χ^2
		AA	**OFT**	**ST**	**AN**			
1. Starts conversation when it is appropriate to do so	40 Male	18	14	7	1	3	7.815	17.00
	40 Female	13	17	7	3	3	7.815	11.60
2. Introduces him / herself to someone who is new	40 Male	8	20	6	6	3	7.815	13.60
	40 Female	6	14	17	3	3	7.815	13.00
3.Introduces people to each other	40 Male	2	16	18	4	3	7.815	20.00
	40 Female	7	15	15	3	3	7.815	10.80
4.Makes a variety of comments, related to the topic during conversation	40 Male	20	9	8	3	3	7.815	15.40
	40 Female	22	7	8	3	3	7.815	20.60
5. Ask and respond to "Wh" Questions i.e "what/why/when/who/whom/where	40 Male	21	10	4	5	3	7.815	18.20
	40 Female	21	11	6	2	3	7.815	20.60
6.Finishes conversations appropriately	40 Male	10	21	7	2	3	7.815	19.40
	40 Female	7	23	4	6	3	7.815	23.00

* Significance level : α = 0.05, Degree of freedom: df = 3, Chi Squares(Cal value) : χ^2

(V) Verbal Conversation Skills

Table 10: *Opinion about Verbal Conversation Skills*

Statement	**Teachers Observation**	**Level of Agreement**				**Df**	**Table value**	χ^2
		AA	**OFT**	**ST**	**AN**			
1. Starts conversation when it is appropriate to do so	40 Male	11	21	7	01	3	7.815	21.20
	40 Female	14	19	6	1	3	7.815	19.40

2. Introduces him/herself to someone who is new	40 Male	7	22	10	1	3	7.815	23.40
	40 Female	7	22	9	2	3	7.815	21.80
3.Introduces people to each other	40 Male	5	24	9	2	3	7.815	28.60
	40 Female	7	21	11	1	3	7.815	21.20
4.Makes a variety of comments, related to the topic during conversation	40 Male	5	15	16	4	3	7.815	12.20
	40 Female	17	13	7	3	3	7.815	11.60
5. Ask and respond to "Wh" Questions i.e "what/why/when/who/ whom/where	40 Male	15	17	7	1	3	7.815	16.40
	40 Female	16	17	6	1	3	7.815	18.20
6.Finishes conversations appropriately	40 Male	3	23	13	1	3	7.815	30.80
	40 Female	7	25	7	1	3	7.815	32.40

* Significance level : α = 0.05, Degree of freedom: df = 3, Chi Squares(Cal value) : χ^2

(VI) Non-Verbal Conversation Skill

Table 11: *Opinion about Non-verbal Conversation*

Statement	**Students Responses**	**Level of Agreement**				**Df**	**Table value**	χ^2
		AA	**OFT**	**ST**	**AN**			
1. Maintains appropriate familiarity in conversation to peers	40 Male	10	23	5	2	3	7.815	25.80
	40 Female	9	17	12	2	3	7.815	11.80
2. Adjusts body towards the speaker	40 Male	13	23	3	1	3	7.815	30.80
	40 Female	14	18	6	2	3	7.815	16.00
3.Uses a nice tone of voice in classroom discussions	40 Male	20	12	7	1	3	7.815	19.40
	40 Female	11	15	13	1	3	7.815	11.60
4.Understands the body language/facial expressions of others	40 Male	12	18	8	2	3	7.815	13.60
	40 Female	18	13	5	4	3	7.815	13.40
5. Waits to speak in conversation	40 Male	13	22	3	2	3	7.815	26.60
	40 Female	16	16	6	2	3	7.815	15.20
6.Uses proper facial expression and body language in discussions	40 Male	17	16	5	2	3	7.815	17.40
	40 Female	9	19	9	3	3	7.815	13.20

* Significance level : α = 0.05, Degree of freedom: df = 3, Chi Squares(Cal value) : χ^2

(VI) Non-Verbal Conversation Skills

Table 12: *Opinion about non-verbal conversation skill*

Statement	Teachers Observation	Level of Agreement				Df	Table value	χ^2
		AA	OFT	ST	AN			
1. Maintains appropriate familiarity in conversation to peers	40 Male	7	27	5	1	3	7.815	40.40
	40 Female	11	23	5	1	3	7.815	27.60
2. Adjusts body towards the speaker	40 Male	12	22	3	3	3	7.815	24.60
	40 Female	15	20	4	1	3	7.815	24.00
3.Uses a nice tone of voice in classroom discussions	40 Male	12	17	7	4	3	7.815	9.80
	40 Female	15	16	8	1	3	7.815	14.60
4.Understands the body language and facial expressions of others	40 Male	15	18	5	2	3	7.815	17.80
	40 Female	15	15	7	3	3	7.815	10.80
5. Waits to speak in conversation	40 Male	12	22	5	1	3	7.815	25.40
	40 Female	10	22	7	1	3	7.815	23.40
6.Uses proper facial expression and body language in discussions	40 Male	7	22	8	3	3	7.815	20.60
	40 Female	7	17	15	1	3	7.815	16.40

* Significance level : $\alpha = 0.05$, Degree of freedom: df = 3, Chi Squares(Cal value) : χ^2

(VII) Sharing Materials Skill

Table 13: *Opinion about Sharing Material Skill*

Statement	Students Responses	Level of Agreement				Df	Table value	χ^2
		AA	OFT	ST	AN			
1. Shares material with others in a polite way	40 Male	16	20	3	1	3	7.815	26.60
	40 Female	19	14	4	3	3	7.815	18.20
2. Do not hesitate to share materials with colleagues	40 Male	10	16	13	1	3	7.815	12.60
	40 Female	15	14	8	3	3	7.815	9.00
3.Helps friends/classmates in sharing material	40 Male	13	21	5	1	3	7.815	23.60
	40 Female	15	17	6	2	3	7.815	15.40
4.Shares food items with friends	40 Male	19	12	8	1	3	7.815	17.00
	40 Female	13	10	12	5	3	7.815	13.60

5. Asks friends for help in study affairs	40 Male	16	15	6	3	3	7.815	12.60
	40 Female	20	10	7	3	3	7.815	15.80
6. Helps weak and needy classmates / friends in sharing study solutions	40 Male	17	21	1	1	3	7.815	33.20
	40 Female	9	18	9	4	3	7.815	10.20

* Significance level : α = 0.05, Degree of freedom: df = 3, Chi Squares(Cal value) : χ^2

(VII) Sharing Materials Skill

Table 14: *Opinion about sharing material skills*

Statement	**Teachers Observation**	**Level of Agreement**				**Df**	**Table value**	χ^2
		AA	**OFT**	**ST**	**AN**			
1. Shares material with others in a polite way	40 Male	17	20	2	1	3	7.815	29.40
	40 Female	16	18	5	1	3	7.815	20.60
2. Does not hesitate to share materials with colleagues	40 Male	13	23	3	1	3	7.815	30.80
	40 Female	11	23	4	2	3	7.815	27.00
3.Helps friends/classmates in sharing material	40 Male	7	27	5	1	3	7.815	40.40
	40 Female	10	24	5	1	3	7.815	30.00
4.Shares food items with friends"	40 Male	9	10	8	3	3	7.815	13.40
	40 Female	9	17	10	4	3	7.815	8.60
5. Asks friends for help in study affairs	40 Male	12	19	8	1	3	7.815	17.00
	40 Female	11	27	7	1	3	7.815	21.20
6.Helps weak and needy classmates/friends in sharing study solutions	40 Male	12	23	4	1	3	7.815	29.00
	40 Female	16	14	6	4	3	7.815	10.40

* Significance level : α = 0.05, Degree of freedom: df = 3, Chi Squares(Cal value) : χ^2

(VIII) Skill to Compliments Others

Table 15: *Opinion about Compliment Others*

Statement	**Students Responses**	**Level of Agreement**				**Df**	**Table value**	χ^2
		AA	**OFT**	**ST**	**AN**			
1. Appropriately receives compliments	40 Male	13	18	3	6	3	7.815	13.80
	40 Female	7	17	12	4	3	7.815	9.80
2. Makes an apology	40 Male	13	18	7	2	3	7.815	14.60

independently	40 Female	7	14	16	3	3	7.815	11.00
3.Greets people warmly	40 Male	21	15	3	1	3	7.815	27.60
	40 Female	1	11	13	2	3	7.815	9.00
4.Asks for a favour politely and say thank you in return	40 Male	19	17	2	2	3	7.815	25.80
	40 Female	20	17	1	2	3	7.815	29.40
5. Gives compliments to class fellows/peers	40 Male	18	10	11	1	3	7.815	14.60
	40 Female	18	14	5	3	3	7.815	15.40
6.Pays regards to elders	40 Male	28	9	2	1	3	7.815	47.00
	40 Female	27	9	3	1	3	7.815	42.00

* Significance level : α = 0.05, Degree of freedom: df = 3, Chi Squares(Cal value) : χ^2

(VIII) Compliment Others

Table 16: *Opinion about compliments others skill*

Statement	**Teachers Observation**	**Level of Agreement**				**Df**	**Table value**	χ^2
		AA	**OFT**	**ST**	**AN**			
1. Appropriately receives compliments	40 Male	10	22	7	1	3	7.815	23.40
	40 Female	7	21	11	1	3	7.815	21.20
2. Makes an apology independently	40 Male	9	22	18	1	3	7.815	23.00
	40 Female	10	21	8	1	3	7.815	20.60
3.Greets people warmly	40 Male	13	17	9	1	3	7.815	14.00
	40 Female	9	14	14	2	3	7.815	10.00
4.Asks for a favour politely and say thank you in return	40 Male	18	15	4	3	3	7.815	17.00
	40 Female	11	25	3	1	3	7.815	35.00
5. Gives compliments to class fellows/peers	40 Male	11	23	5	1	3	7.815	27.60
	40 Female	15	21	2	2	3	7.815	27.40
6.Pays regards to elders	40 Male	32	5	2	1	3	7.815	65.40
	40 Female	29	6	4	1	3	7.815	49.40

* Significance level : α = 0.05, Degree of freedom: df = 3, Chi Squares(Cal value) : χ^2

Findings

Findings of the Students and Teachers' Survey

The findings are based on the data / opinions given by sample students and teachers observations of their students that both the male and female students were using e-learning

media almost always or often for teaching learning purpose in their daily life. Therefore, the following findings were made on the basis of students' survey and teachers' observational survey.

(I) Opinion about Relationship Building Skills

1. Students survey showed that majority of the male students who are using e-learning media almost always or often in their daily life have good relationship building skills whereas majority of the female students who are using e-learning media almost always or often in their daily life also have good relationship building skills. Furthermore, by comparing the Chi squares of both the male and female students for all six statements of the said table (Table 1), it showed that there was no significant difference between the relationship building skills enhancement of male science and female science students exposed to e-learning media.

Moreover, Teachers' survey by observing students also revealed that majority of male students who are using e-learning media almost always or often in their daily life have good relationship building skills whereas majority of the female students who are using e-learning media almost always or often in their daily life also have good relationship building skills. Furthermore, by comparing the Chi squares of both the male and female students for all six statements of the said table (Table 2), it showed that there was no significant difference between the relationships building skills enhancement of male science and female science students exposed to e-learning media.

(II) Opinion about Emotional Management

2. Students survey showed that majority of the male students who are using e-learning media almost always or often in their daily life have good emotional management skills whereas, majority of female students who are using e-learning media almost always or often in their daily life also have good emotional management skills. By comparing the Chi squares of both the male and female students for all six statements of the said table (Table 3), it was showed that the male students exposed to e-learning media have better emotional management skills than the female students who exposed to e-learning media.

Moreover, Teachers' survey also showed that majority of male students who are using e-learning media almost always or often in their daily life have good emotional management skills whereas majority of female students who are using e-learning media almost always or often in their daily life also have good emotional management skills. By comparing the Chi squares of both the male and female students for all six statements of the said table (Table 4),

it showed that the male students exposed to e-learning media have better emotional management skills than the female students who exposed to e-learning media.

(III) Opinion about Self Regulation

3. Students survey showed that majority of male students who are using e-learning media almost always or often in their daily life have good self regulation skills whereas majority of female students also have good self regulation skills. By comparing the chi squares of both male and female students for all six statements of the said table (Table 5); it was found that male students exposed to e-learning media have better self-regulation skills than the female students who exposed to e-learning media.

Moreover, Teachers' survey showed that majority of male students who are using e-learning media almost always or often in their daily life have good self-regulation skills whereas majority of female students also have good self-regulation skills. By comparing the chi squares of both male and female students for all six statements of the said table (Table 6); it was revealed that male students exposed to e-learning media have better self-regulation skills than the female students who exposed to e-learning media.

(IV) Opinion about Skills for Learning

4. Students survey showed that majority of male students who are using e-learning media almost always or often in their daily life have good skills for learning whereas, majority of female students also have good skills for learning. Comparing the chi squares of both male and female students for all six statements (7), it showed there was no significant difference between the skills for learning enhancement of male science and female science students exposed to e-learning media.

Moreover, Teachers' survey also showed that majority of male students who are using e-learning media almost always or often in their daily life have good skills for learningwhereas, majority of female students also have good skills for learning. By comparing the Chi squares of both male and female students for all six statements (8), it showed that there was no significant difference between the skills for learning enhancement of male science and female science students exposed to e-learning media.

(V) Opinion about Verbal Conversational Skills

5. Students survey explained that majority of male students who are using e-learning media almost always or often in their daily life have good verbal conversation skills whereas

majority of female students also have good verbal conversation skills. By comparing Chi squares of both male and female students for all six statements (9), it was found that there was no significant difference between the verbal conversation skills enhancement of male science and female science students exposed to e-learning media.

Moreover, Teachers' survey explained that majority of male students who are using e-learning media almost always or often in their daily life have good verbal conversation skills whereas majority of female students also have good verbal conversation skills. However, by comparing Chi squares of both male and female students for all six statements of the table (10), it was revealed that male students exposed to e-learning media have better verbal conversational skills than the female students who exposed to e-learning media.

(VI) Opinion about Non-Verbal Conversation

6. Students survey revealed that majority of male students who are using e-learning media almost always or often in their daily life have good non verbal conversation skills whereas majority of female students also have good nonverbal conversation skills. By comparing the chi squares of both male and female in all six statements of the said table (Table 11), it was found that comparatively male students exposed to e-learning media have better nonverbal conversation skills than the female students who exposed to e-learning media.

Moreover, Teachers' survey also showed that majority of male students who are using e-learning media almost always or often in their daily life have good nonverbal conversation skills whereas majority of female students also have good nonverbal conversation skills. By comparing the chi squares of both male and female in all six statements of the said table (Table 12); it was found that comparatively male students exposed to e-learning media have better nonverbal conversation skills than the female students who exposed to e-learning media**.**

(VII) Opinion about Sharing Materials

7. Students survey showed that majority of male students who are using e-learning media almost always or often in their daily life have good skills of sharing materials with others whereas majority of female students who are using e-learning media almost always or often in their daily life have good skills of sharing materials with others. By comparing the chi squares of both the male and female in all six statement of the said table (Table 13), it was found that comparatively male students have good skills of sharing materials than the female students who exposed to e-learning media

Moreover, Teachers' survey revealed that majority of male students who are using e-learning media almost always or often in their daily life have good skills of sharing materials with others (Table 14 S. No.1 to 6) whereas majority of female students who are using e-learning media almost always or often in their daily life have good skills of sharing materials with others (Table 14 S.No.1 to 6). By comparing the Chi squares of both the male and female in all six statements of the said table (Table 14); it was found that comparatively male students have good skills of sharing materials than the female students who exposed to e-learning media.

(VIII) Opinion about Complimenting Others

8. Students survey revealed that majority of male students who are using e-learning media almost always or often in their daily life have good skills of complimenting others (Table 15 S. No.1 to 6) whereas, majority of female students also have good skills of complimenting others (Table 15 S.No.1 to 6). By comparing chi squares of both male and female students for all six statements of the said table (Table 15), it was found that male students exposed to e-learning media have better skills of complimenting others than the female students who exposed to e-learning media.

Moreover, Teachers' survey also showed that majority of male students who are using e-learning media almost always or often in their daily life have good skills of complimenting others whereas, majority of female students also have good skills of complimenting others. By comparing the Chi squares of both male and female students for all six statements of the said table (Table 16), it was found that male students exposed to e-learning media have better skills of complimenting others than the female students who exposed to e-learning media.

Discussion

The present study has explored how the social skills of science students are developed by using e-learning media. In the study under discussions, effects of e-learning media on social skills' enhancement of science students, the findings and results of research tools including students' self report survey and teachers observational survey revealed that there were significant effects on majority of the social skills enhancement of male science students exposed to e-learning media almost always or often in their daily life. Therefore hypothesis: **$H_0$1** of research study was rejected, because significant effects of e-learning media on most of the social skills enhancement of male students were found. Further it was also revealed that there were significant effects on the majority of social skills enhancement of female science

students exposed to e-learning media almost always or often in their daily life. Therefore hypothesis: **$H_0$2** of research study was also rejected, because significant effects of e-learning media on most of the social skills enhancement of female students were found. Therefore, the results of study of descriptive / survey study confirmed the previous literatures / researches views that were the views that technology, computer, e-learning media and ICT tools affect students' different social skills and resultantly enhance their social skills in one way or in other.

Furthermore, the findings / results of the study also reveals that there were some social skills in which male students were dominant and in some social skills enhancement female students were better than the male students. Also the study explored that there is not worth mentioning differences between some of the social skills enhancement of male and female students exposed to e-learning media in their daily life. But as a whole majority of the social skills enhancement of male students were higher than the female students. Therefore hypothesis: **$H_0$3** of research study was accepted, because significant differences of effects of e-learning media on most of the social skills enhancement of male and female students were found. So it is also not surprising that the effect of e-learning media on social skills enhancement of boys and girls was either was same or in some social skills difference was found. The reason for expected result was that, other research studies / literatures on the development of social skills of male and female students also suggests various mixed results. Furthermore, teachers' observational survey conducted by research assistants / class teachers of observing social skills enhancement of respective students explored the same as was revealed by the students' survey discussed above. So it is also important for the researcher to infer that the results of the present study collected through research instruments including students' survey and teachers' observational surveys were nearly the same and identical. This evidence also provides the reliability and validity of present research findings / results in case of e-learning media and its impact on students' social skills development. Keeping in view the relationships and dissimilarities in the findings of the different research studies conducted before this present study in the same disciplines of e-learning media and its impacts, it can easily said the present study may be made. Therefore, it is needed to explore in detail that what specific social skills relate to e-learning media and, also what type of e-learning media is more useful for learning success and enhancement of social skills. Later it observes, if there is any proof of cause and effects.

On the other hand, there is a greater issue which was observed. Even if particular areas of e-learning media and social skills were known to relate skills development and social adjustment. Moreover, it was exposed that there are some elements of cause and effects, then there is the question whether such skills be developed and measured. It is quite possible that students simply grow their different skills with age, knowledge, experience, environment, interaction with others and learning by doing.

The study here suggested that the students exposed to e-learning media obtained better grades than the students taught by traditional way of teaching. The analysis showed that this was caused by the different positive features of e-learning resources and students cognitive performance. The reseacher tried his best to control different variables affecting the persent study, however it is not hundred percent possible in the limted time and limited available resources for the researcher. However, the previous studies elaborted in the literature also second the findings of the present study undre discussion. Of course, this study only involved science students of specific age and one subject of physics at one level and limited schools.

Only two main statistical tools were used for analysing the research data. For data collection of study,reseracher made students and teachers surveys were used. Data was analysed using chi test of the samples. But later on it was felt that there was a need to explore more, and that some more suitable and advanced research tools may be devised for measurement of social skills enhancement. Because the surveys were devised very carefully and were validated through expert of the relevant field. However, doors for improvement are always opened. The results revealed some specific e-learning media characteristics which are directly related to social skills development. It was argued that it is realistic to presume cause and effects. The basic question is whether these social skills are innate in some students or whether such skills can be enhanced and developed, and,if so, how?.

This study has revealed the very complex nature of e-learning, e-learning media and social skills development. The literature review has often presented e-learning media, social skills enhancement in different ways and in defined terms. But this study presents a welcome solution to such unfounded simplicity. It is hard to argue that e-learning media is a key element in causing greater students success in terms of social skills development. However, in today modern world of emerging innovations in teaching learning process, it is clear that e-learning should be the integral part of the learning process.

Conclusion

It was also revealed from both the students' survey and teachers' observational survey of the study that e-learning media have the significant / positive effects on majority of the social skills' enhancement of both the male and female science students at secondary level. It was concluded that majority of the social skills of male and female were enhanced by using E-learning media. Also as a whole, it was concluded that in majority of the social skills enhancement, male students were significantly better than the female students by using e-learning media in their daily life.

Study Recommendations

On the basis of the study, it is recommended that Government should enhance the financial aids and related facilities of E- Learning and its infrastructures at secondary level.

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