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## Academic Performance in Relation to Internet Usage and Self-Regulated Learning among Secondary School Students

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### ABSTRACT

The present study has been undertaken to study the Academic performance in relation to internet usage and self-regulated learning among secondary school students. The sample consists of sample of 100 boys and 100 girls was selected from PSEB & CBSE Schools of Amritsar District, with purposive and random sampling technique. The data was collected by using standardized scale of Internet Usage Scale (Saini and Dr. Kaur, 2017) and Self-Regulated Learning Scale (Gupta and Mehtani, 2017). The data obtained was analysed statistically with the help of Mean, SD, t-ratio and 'r' was used to arrive at the following findings: (i) There exists significant difference in internet usage among girls and boys of secondary schools belonging to commerce stream. (ii) There exists significant difference in internet usage among student of CBSE & PSEB Schools belonging to commerce stream. (iii) There exists significant difference in self-regulated learning among girls & boys of secondary schools belonging to commerce stream. (iv) There exists significant difference in self-regulated learning among students of CBSE & PSEB Schools belonging to commerce stream. (v) There exists relationship between internet usage and academic performance of secondary school students belonging to commerce stream. (vi) There exists relationship between self-regulated learning and academic performance of secondary school students belonging to commerce stream. (vi) There exists significant interaction effect of internet usage and self-regulated learning on academic performance of secondary school students belonging to commerce stream.

**Keywords:** Academic Achievement, Internet Usage, Self-Regulated Learning.

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### INTRODUCTION

The Internet swiftly entered the life of the humankind in the 20th century. The use of internet in education is increasing day-by-day. Internet provides infinite and easily accessible learning resources as well as fast communication. Internet is becoming more available in education as a learning tool, so internet users need certain competencies in order to make effective use of it. The growth is parallel to the future of our country, reflected through quality of the present education system. A good education system takes into account the scholastic as well as the social and physical aspects of an individual's life. Technology can be utilized to improve teaching and learning and help students to be successful. Education doesn't stop toward the finish of the school day. The walls of the classrooms are no longer a barrier as technology enables new ways of learning, communicating, and working collaboratively (Souter, 2017).

The role of the internet that allows access to the e-book, search information easily and assist students in completing the task will be significant in increasing student academic achievement. Internet is considered as an important source of transferring of information, in today's world internet indeed plays a vital role at all academic steps like teaching, research and learning, with the advancement of technology, a new form of knowledge production and distribution has occurred in the form of internet (Jibrin, 2017).

In today's competitive world, academic performance, self-regulated learning and internet can bring foremost change in their academic life. Today's digital generation is using internet for learning purpose as well as for leisure time activities. Therefore, it is expected that they develop self-regulated learning in using technology specially internet for learning purposes. Self-regulated learning plays important role in academics of learners, also self-regulation plays important role in internet use.

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### ACADEMIC PERFORMANCE

Academic performance means the knowledge and skills that students have mastered in a subject or a course. It's basically a measure of how well students have performed in the various assessment items set for them based on some educational criteria determined by professional educators. Through students' performance in the assessment items such as essays, tests, viva, and examinations, students' performance is determined in ranking as to the educational standards that they have reached — pass, credit, distinction, high distinction and so on. These educational standards may be recognized as satisfying the standards for admission for further studies in institutions domestically and internationally. (Lee, 2010).

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## INTERNET USAGE

The 21st century is an era of technological revolution. Due to the changes in the technology, the environment of today is changing as never before. Adolescents of today are well and easily exposed to vast, unlimited and most importantly censored information and are subject to high pressure because of ever increasing competition and expectations from their family and peers. In this dynamic environment, many of the adolescents are finding it difficult to adjust themselves and even sometimes succumb to the environmental pressure. There are four basic categories of internet usage by adolescents- The first category is the website, which provides documents or collection of documents for informational purposes. Email, the second category is a rapid form of electronic letter communication. The third category is chat room in which adolescents communicate with each other. The fourth category, newsgroup, which is like an electronic bulletin board (Hunley et al.2005). Though the internet is a useful source of information and channel for speedy communication, its abuse among the adolescents is of much concern. However, there is every possibility that the adolescents might use the internet for experimentation. While some use it to a limited extent, the others may be interested in information relating to violence, sexual content, adventures etc. The experimentation might sometimes lead to cybercrimes including the intrusion to others' data, plagiarism, using and spreading pornographic material and sending anonymous messages (Kumar, 2020).

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## SELF-REGULATED LEARNING

Self-regulated learning is an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior, guided and constrained by their goals and the contextual features in the environment. The self-regulated learners are distinguished by their systematic use of metacognitive, motivational and behavioral strategies and their responsiveness to feedback regarding the effectiveness of their learning and by their self-perception of academic accomplishment. (Pintrich, 2000). Self-regulated learning (SRL) is a cognitively inherent aspect of learning principally comprises of knowledge, beliefs and learned skills. Self-regulated learners are assumed to understand the impact of the environment on them during the acquisition process and know how to improve that environment through the use of various strategies (Schunk & Zimmerman, 1994).

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## EMERGENCE OF THE PROBLEM

As we live in a society where life-long learning is increasingly important and informal learning by the students' ability to learn independently and to improve his performance, the support is offered by the instructor to the students. Academic performance of a student is considered as an important indicator in the assessment of educational system. To learn, students use a variety of strategies to regulate certain cognitive, motivational and behavioural aspects as well as certain environmental characteristics. The use of internet in education helps the students to improve their knowledge anytime, anywhere and they can use different strategies to make their performance better than before. Internet usage in the educational process is increasing day by day. The potential of the Internet to offer individual learners increased freedom from the physical limitations of the real world. The Internet allows learning to take place on a many-to-many rather than one-to-many basis. Internet also provides students asynchronous education where they can reach any kind of information anytime and anywhere. It is the source of spreading information quickly to a large audience and of going beyond the limitation of time and space. Students can access teachers, resources, and assignments via the web whenever and wherever they have an internet connection. Assignments or studies given by teachers requiring students to use the Internet and the internet use of the students for educational purposes will also enable students to develop the skills.

The opportunities which the Internet can offer in the sphere of education, are really unique. Education has seen large changes due to the internet, including modifications to curriculum and differences in the way education is delivered. With the use of internet in learning process an individual can improve his academic performance as well as by self-regulation. Basically, self-regulation means to control the ability, behaviour, learnings according to the changing learning environment. As the pupil becomes more self-regulated, they will be able to monitor their own progress, independently reflecting on their work and the strategies they have used, setting goals for their further development. Learners with superior self-regulatory skills tend to be more motivated academically and demonstrate effective learning ability. Self-regulated learners should be able to select and be committed to goals for their learning. Now a days, the teaching-learning process has been changed with the evolution of internet in the field of education. Utilizing the internet in the education will improve student self-regulation in one's academic performance, as it is relatively easy to implement, low in cost, and can be useful across a wide range of subjects and online formats. Self-regulated learning appears to be important for learners in online learning environments that afford high levels of learner autonomy and low levels of teacher presence.

So, the present study will be conducted to study academic performance of higher secondary school students in relation to internet usage and self-regulated learning.

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## STATEMENT OF THE PROBLEM

ACADEMIC PERFORMANCE IN RELATION TO INTERNET USAGE AND SELF-REGULATED LEARNING AMONG SECONDARY SCHOOL STUDENTS

### OPERATIONAL DEFINITIONS OF THE TERM USED

#### ACADEMIC PERFORMANCE

Academic performance is the measurement of student achievement across various academic subjects It's the method that the school uses to evaluate how well the students' performance academically within the semester. In the present study the scores for the academic achievement will be the marks obtained by students in their previous standard that is aggregate scores of 10<sup>th</sup> class.

### **INTERNET USAGE**

Internet usage can be operationally defined as use of Internet applications such as email, search engine, instant messaging, social networking sites, online storage services, You-tube, wikis, blogs, bookmark, chatroom, and online learning resources by undergraduates for educational purpose including notes making, project work/assignment, doubt clearing, acquiring information about any subject, enriching general knowledge and communicating with teachers, experts and peers for learning purpose; which were measured by using rating scale. In the present study the Internet usage of the students will be the scores obtained by students on Internet usage scale developed by Saini and Kaur, 2017.

### **SELF-REGULATED LEARNING**

Self-regulated learning is an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behaviour, guided and constrained by their goals and the contextual features in the environment. In the present study the Self-regulated learning of the students will be the scores obtained by students on Self-regulated learning scale developed by Gupta and Mahtani, 2017.

### **DELIMITATION OF THE STUDY**

1. The present study was delimited to 200 secondary school students (100 boys and 100 girls) belonging to commerce stream.
2. The study was confined to the students of class XI of secondary schools of Amritsar District affiliated to CBSE & PSEB.

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### **OBJECTIVES OF THE STUDY**

The research had the following objectives for exploration

1. To study internet usage among secondary school students belonging to commerce stream with respect to gender.
2. To study internet usage among secondary school students belonging to commerce stream with respect to the type of school.
3. To study self-regulated learning among secondary school students belonging to commerce stream with respect to gender.
4. To study self-regulated learning among secondary school students belonging to commerce stream with respect to the type of the school.
5. To study the relationship between internet usage and academic performance of secondary school students belonging to commerce stream.
6. To study the relationship between self-regulated learning and academic performance of secondary school students belonging to commerce stream.
7. To study the interaction of internet usage and self-regulated learning on academic performance of secondary school students belonging to commerce stream.

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### **HYPOTHESES OF THE STUDY**

1. There exists no significant difference in internet usage among girls and boys of secondary schools belonging to commerce stream.
2. There exists no significant difference in internet usage among student of CBSE & PSEB Schools belonging to commerce stream.
3. There exists no significant difference in self-regulated learning among girls & boys of secondary schools belonging to commerce stream.
4. There exists no significant difference in self-regulated learning among students of CBSE & PSEB Schools belonging to commerce stream.
5. There exists no relationship between internet usage and academic performance of secondary school students belonging to commerce stream.
6. There exists no relationship between self-regulated learning and academic performance of secondary school students belonging to commerce stream.
7. There exists no significant interaction effect of internet usage and self-regulated learning on academic performance of secondary school students belonging to commerce stream.

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### **RESEARCH DESIGN OF THE STUDY**

The present study is descriptive in the sense that it aims at describing the nature and distributions of variables under study i.e., academic performance, internet usage and self-regulated learning. The survey research is one of the most important areas of measurement in applied social research. The broad area of survey research encompasses any measurement procedures that involve asking questions of respondents. The survey method gathered data from a relatively large number of cases at a particular time. It is not concerned with characteristics of individual as individuals. It is concerned with the statistics that results when data are abstracted from a number of individual cases. It is essentially cross-sectional. It involves a clearly defined problem and definite objectives. It requires expert and imaginative planning, careful analysis and interpretation of the data gathered, logical and skilful reporting of the findings.

### **SAMPLE OF THE STUDY**

For the investigation, In the present study a sample of 100 boys and 100 girls will be selected from PSEB & CBSE Schools of Amritsar District. The technique of random sampling was used

### **TOOLS USED**

The following standardized tests will be used:

1. Internet Usage Scale (Saini and Kaur, 2017).
2. Self-Regulated Learning Scale (Gupta and Mehtani, 2017).

**VERIFICATION OF HYPOTHESES**

**Hypothesis-1:** "There exists no significant difference in internet usage among girls and boys of secondary schools belonging to commerce stream."

For the comparison of internet usage among girls and boys of secondary schools belonging to commerce stream mean was computed.

**Analysis of descriptive statistics**

The number of boys and girls of commerce stream were subjected to descriptive statistics such as mean, SD, t-test and  $S_{ED}$ . The obtained scores of internet usage of both genders have been given in table 1.

**Table 1:**

**Showing mean score, standard deviation, standard error mean and t-value of internet usage among both genders**

	Gender	N	Mean	Std. Deviation	Std. Error Mean	t- value
Internet Usage Score	Girls	100	48.86	15.473	1.547	2.195
	Boys	100	53.59	14.995	1.500	

Tabular representation 1 shows the mean score of girls and boys is 48.86 and 53.59 respectively and S.D. of girls and boys is 15.473 and 14.995 respectively. The standard error of difference 2.155. The calculated t-value comes out to be 2.195, which is significant at 0.05 level of significance. Therefore, it can be interpreted that there exists a difference in internet usage among girls and boys of secondary schools belonging to commerce stream. Hence, the null hypothesis no.1 stating that "There exists no significant difference in internet usage among girls and boys of secondary schools belonging to commerce stream." stands rejected. These results are support by the study of "Gross, (2004). Adolescent Internet use: What we expect, what teens report."

**Hypothesis-2:** "There exists no significant difference in internet usage among student of CBSE & PSEB Schools belonging to commerce stream."

For the comparison of the internet usage among students of CBSE & PSEB schools belonging to commerce stream.

**Analysis of descriptive statistics**

The internet usage among students of CBSE & PSEB schools were subjected to descriptive statistics such as mean, SD and  $S_{ED}$ . The obtained scores of internet usage of both groups have been given in table 2:

**Table 2:**

**Showing mean, standard deviation, standard error mean score and t-value of internet usage among both the groups**

	Board	N	Mean	Std. Deviation	Std. Error Mean	t-value
Internet Usage Score	PSEB	100	48.90	15.589	1.559	2.157
	CBSE	100	53.55	14.887	1.489	

Tabular representation 2 shows that mean scores of the schools of CBSE & PSEB students is 53.55 and 48.90. and the standard deviation is 14.887 and 15.589. The standard error difference is 2.156. The calculated t-value comes out to be 2.157.

Hence, the null hypothesis no.2 stating that "There exists no significant difference in internet usage among student of CBSE & PSEB Schools belonging to commerce stream." stands rejected. A significant difference in internet usage among students of CBSE & PSEB is observed. The results above shown that while there is changing scenario students now a days are aware of the use of internet in their education field to get more guidance and improve their performance in their grades. Students of the boards use internet in their educational process effectively to get better results.

**Hypothesis-3:** "There exists no significant difference in self-regulated learning among girls & boys of secondary schools belonging to commerce stream."

For the comparison of self-regulated learning among girls and boys of secondary schools belonging to commerce stream were subjected to descriptive statistics such as mean, SD,  $S_{ED}$  and t-value. The obtained scores of self-regulated learning among both the gender have been given in table 3

**Table 3:**

**Showing mean score, standard deviation, standard error mean and t-value of the self-regulated learning among girls and boys of secondary schools.**

	Gender	N	Mean	Std. Deviation	Std. Error Mean	t-value
Self-Regulated Learning Score	Girls	100	175.31	14.463	1.446	.182
	Boys	100	174.74	27.837	2.784	

Tabular representation<sup>3</sup> shows that mean score of self-regulated learning among girls and boys of secondary school students of commerce stream is 175.31 and 174.74. The Standard deviation is 14.463 and 27.837. The Standard error mean score is 1.446 and 2.784. The standard error difference is 3.137. The calculated t-value comes out to be 0.182.

Hence, the null hypothesis no.3 stating that “There exists no significant difference in self-regulated learning among girls & boys of secondary schools belonging to commerce stream.” stands rejected. A significant difference in self-regulated learning among girls and boys of secondary school students is observed.

**Hypothesis-4:** “There exists no significant difference in self-regulated learning among students of CBSE & PSEB Schools belonging to commerce stream.”

For the comparison of self-regulated learning among students of CBSE & PSEB schools mean was computed on two groups (CBSE & PSEB school students).

#### Analysis of descriptive statistics

The self-regulated learning among students of CBSE & PSEB schools were subjected to descriptive statistics such as mean, SD and  $S_{ED}$ . The obtained scores of self-regulated learning students among CBSE & PSEB schools have been given in table 4

**TABLE 4:**

**Showing mean score, standard deviation, standard error mean and t-value of self-regulated learning with respect to type of school**

	Board	N	Mean	Std. Deviation	Std. Error Mean	t-value
Self-Regulated Learning Score	PSEB	100	177.21	13.805	1.380	1.400
	CBSE	100	172.84	28.001	2.800	

Tabular representation 4 shows that mean score of students of CBSE & PSEB for self-regulated learning is 172.84 and 177.21. The standard deviation is 28.001 and 13.805. The standard error difference is 3.122. The calculated t-value comes out to be 1.400.

Hence, the null hypothesis no. 4 states that “There exists no significant difference in self-regulated learning among students of CBSE & PSEB Schools belonging to commerce stream” stands rejected. A significant difference is observed in self-regulated learning among students of CBSE & PSEB schools. The above results shown that the students of both the boards are aware of the process that can help them to improve their performance in their educational field.

**Hypothesis-5:** “There exists no relationship between internet usage and academic performance of secondary school students belonging to commerce stream.”

For the relationship between internet usage and academic performance of secondary school students belonging to commerce stream Pearson’s correlation was computed.

**Table 5**  
**Showing the correlation between internet usage and academic performance**

		Academic Performance
Internet Usage Score	Pearson Correlation	.354**
	Sig. (2-tailed)	.000
	N	200

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

The table 5 reveals the result of coefficient or correlation between internet usage and academic performance of secondary school students belonging to commerce stream.

The coefficient of correlation between internet usage and academic performance of secondary school students comes out to be 0.354. It becomes vivid that there is significant positive relationship between the two variables i.e., internet usage and academic performance of secondary school students.

From carefully analysis of the result shown in the table 4.5 as well as statistical computation of 'r' value, we come to this conclusion that there exists a significant and positive relationship between internet usage and academic performance of secondary school students.

Hence, Hypothesis H<sub>5</sub> "There exists no relationship between internet usage and academic performance of secondary school students belonging to commerce stream" is rejected.

**Hypothesis-6:** "To study the relationship between self-regulated learning and academic performance of secondary school students belonging to commerce stream."

For the relationship between self-regulated learning and academic performance of secondary school students Pearson's correlation was computed.

**Table 6**  
**Showing the correlation between self-regulated learning and academic performance**

		Academic Performance
Self-Regulated Learning Score	Pearson Correlation	.686**
	Sig. (2-tailed)	.000
	N	200

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

The table6 reveals the result of coefficient of correlation of self-regulated learning and academic performance of secondary school students. The coefficient of correlation between self-regulated learning and academic performance of secondary school students comes out to be 0.686. It becomes vivid that there is significant positive relationship between the two variables i.e., self-regulated learning and academic performance.

From carefully analysis of the result shown in the table 4.6 as well as statistical computation of 'r' value, we come to this conclusion that there exists a significant and positive relationship between self-regulated learning and academic performance. The results are supported by the study of "of secondary, Visscher, Rikers, & Thommen, (2016). Self-regulated learning and academic performance in medical education."Therefore, Hypothesis H<sub>6</sub> "There exists no relationship between self-regulated learning and academic performance of secondary school students belonging to commerce stream." is rejected.

**Hypothesis-7:** "There exists no significant interaction effect of internet usage and self-regulated learning on academic performance of secondary school students belonging to commerce stream."

For the interaction effect of internet usage and self-regulated learning on academic performance of secondary school students belonging to commerce stream mean was computed.

### Analysis of descriptive analysis

The interaction effect of internet usage and self-regulated learning on academic performance of secondary school students belonging to commerce stream were subjected to sum of squares, mean squared and f-value. Analysis of variance was employed to study of interaction effects of independent variables of internet usage and self-regulated learning on the dependent variable of academic performance. These values have been shown in table 7.

**Table 7**  
**Showing the Analysis of Variance of Internet Usage (A), Self-regulated Learning (B) on academic performance**

Dependent Variable	Source of Variance	Sum of Square	df	Mean Square	F- value
Academic performance	Internet Usage(A)	204.255	2	102.127	9.698
	Self-regulated Learning (B)	1734.443	2	867.222	82.355
	Interaction (AXB)	38.583	4	9.646	.916
	Total	1147108.000	200		

Table 7 reveals that F-value for interaction effect of internet usage and self-regulated learning on academic performance of secondary school students belonging to commerce stream comes out to be 0.916, which is insignificant. Hence, the hypothesis 7, "There exists no significant interaction effect of internet usage and self-regulated learning on academic performance of secondary school students belonging to commerce stream." stands rejected.

## FINDINGS OF THE STUDY

1. There exists significant difference in internet usage among girls and boys of secondary schools belonging to commerce stream.
2. There exists significant difference in internet usage among student of CBSE & PSEB Schools belonging to commerce stream.
3. There exists significant difference in self-regulated learning among girls & boys of secondary schools belonging to commerce stream.
4. There exists significant difference in self-regulated learning among students of CBSE& PSEB Schools belonging to commerce stream.
5. There exists relationship between internet usage and academic performance of secondary school students belonging to commerce stream.
6. There exists relationship between self-regulated learning and academic performance of secondary school students belonging to commerce stream.
7. There exists significant interaction effect of internet usage and self-regulated learning on academic performance of secondary school students belonging to commerce stream.

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