

Student Preference for Opting Biology and Computer Science at Secondary Level

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Abstract: This study entitled student preferences for opting Biology & computer Education at secondary level was a descriptive survey type study. All the students enrolled in Islamabad Model Colleges of Boys and Girls (IMCB, IMCG) at S. S. C level in district Islamabad were the population of this study. A systematic random sampling was selected from all the IMCB & IMCG (total eight) presently offering biology and computer education. Two sections of grade 9th & 10th were selected randomly. A systematic random sample of students was selected by taking the students whose roll number was multiple of two. The objective of the study was to explore the factor's which effect student's preference for biology & computer science, & to find out the difference among the boys & girls preference. The data was collected through a questionnaire. Main findings of the study were as follows:- students awareness of the future prospects of the subject there self-interest, & to some extent parents influence & family trend are the major deciding factor in students choice of the subjects. However the view that biology is a girl subject & computer is a boy subject do not prevail among students not at least among male students hence it is not a deciding factor. Factors such as lack of computer lab facilities, difficulty in mathematical & theoretical aspects of computer education made students to decide against opting for the subject. While the descriptive nature of biology, cramming the classifications & terms, handling of animals & plants, are some of the major factors affecting students to decide against the choice of biology. It is recommended that less stress should be given to cramming in biology & the subject should be made more interesting & creative to enhance student in the subject while more facilities should be provided particularly in female schools for computer education. Computer should studied as a compulsory tool of education, rather as an elective subject.

Keywords: Secondary Education, Computer, Biology, Students

1. Introduction

Science is a process of thinking a means of acquiring new knowledge based upon scientific procedure and research [12]. All scientific fields are important, as they open the different faces of nature. [13]. stated "the information revolution of 20th century has been brought by advance in a computer technology. [9] has found that "computer Literacy is an awareness and its role in education cannot be denied. According to [2] biology is a science of life dealing with living organism and their interaction with environment. In the school of USA, Canada, and Australia access to computer and programing courses more often are available to male than female [11]. In Malta gender differences in achievement

can be related directly to the academic orientation [14]. In Philippines teachers do not believe that female can be scientists, they transmit gender stereotype about female intellectual inferiority in math and science [4]. This pattern can be seen in Africa, middle east and Asia, however in science many women take a more holistic integrationist approach [8]. they want to be connected to the object of study and to member of their research team [10]. White's 1986 meta-analysis found that "male in primary and high school have more attitude toward science that do female. In Pakistan however according to national educational policy (1979) the educational system is divided into four-tier system. 1. Primary 2. Secondary 3. College 4. University. The secondary education is an important stage of student's academic life because it provides a guideline to student towards their

professional life so the course should be as that helps the students toward their professional life. Secondary education is the deciding factor in a productive society. It is at this level that aptitude can be directed; logic and reasoning power can be encouraged & developed; & physical development of a child can acquire sufficient manual skill. [3]. The integration of technical and general education will equip secondary & college student for gainful employment, in industry, agriculture, business, home economics & education. In addition to providing them a programmed of general education.” [3]. In Pakistan at secondary level generally two streams are offered. Humanities Group Which is purely Arts group in which students opt Arts subject like Geography, Civics, History, Islamic studies, Home economics etc. along with compulsory subjects of English, Urdu, Islamite, Pak. Studies. However Science Group Before the introduction of computer at secondary levels the subjects of Physics, Chemistry, Biology and Math along with English, Urdu, Islamite, Pak. Studies. As a compulsory subjects were being offered. In other part of world like In India the National policy on Education (1968) accepted 10+2+3 i.e. 10 years of general education & 3 years of 1st degree course. In England the secondary education is provided b/w the age 11 and 18. School leaving age is 16. There are 3 types of schools in England. 1. Grammar School 2. Technical School 3. Secondary Modern School In west Germany, secondary education is compulsory up to grade 9/10. This stage is divided into 2 parts, namely, Secondary stage I (grades 5 or 7 to 10) & secondary stage II (grade 11 to 13) [1].

2. Procedure of the Study

2.1. Research Method

It was descriptive survey type research analytical research.

2.2. Statement of the Problem

The problem was, “Student preferences for opting biology & computer at secondary level.

2.3. Population

The population comprised all the model colleges of Boys and Girls where option of biology & computer is available for students of class IX & X.

2.4. Sample

It was purposive sample. The model colleges of Islamabad, which offer computer education & biology option, were taken as sample for the study. 4 model colleges of Boys & 4 model colleges of girls were included in the study. After this two sections out of 4 were selected randomly. Every student whose roll no. was multiple of 2 was selected.

2.5. Tools of Study

Two questionnaires were developed as a tool of research. One for the students of computer and one for the biology students. After preparing questionnaire it was administered to a group of male and female students of selected model colleges where option of Biology & Computer was available, for pilot study. The tool was improved on the basis of feedback received from pilot study. Initially it was decided that the questionnaire would be in English. But 1st pilot study revealed that, the students had difficulty in understanding English. Therefore the questionnaire was developed in Urdu & was improved after school pilot study.

2.6. Data Analysis

The data was collected through questionnaire from the students of model colleges. The data was collected personally & responses were 100%. The data collected through questionnaire was analyzed on %age basis

2.7. Objectives

The present study aimed to:

1. Explore the factors, which effect student's preference for biology & computer education.
2. Find out if there is any difference in boys & girls preferences.

2.8. Research Question

1. Do the previous merit, peer pressure, parents & teacher interference effect student's selection of elective subject?
2. Do the girls prefer biology & boys computer education?

2.9. Significance of the Study

The study aimed to explore the factors, which influence student's preferences for the subject of Biology & computer education. It was hoped that the finding would help to highlight the trends among male & female students. The information, it was hoped, would help to take such measures as would help the students to be more objective in their choice of subjects. It was also hoped that the present study would help to identify if more boys than girls opt for computer education & if the girls would also be encouraged to take computer education.

2.10. Delimitation

Due to availability of computer option in limited model colleges the study was delimited to 8 model colleges of boys & girls at secondary level in Islamabad.

3. Analysis of Data

3.1. Views of Students Who Opted for Computer

Table 1. Responses Regarding Reasons for Opting Computer Education.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Self Interest	59	49.1%	68	40.7%
Easy	08	6.6%	11	6.5%
Tutor Prospect	29	24.1%	27	16.16%
Easy To Understand	09	7.5%	26	15.5%
Future Prospect	13	10.8%	19	11.3%
Interest Suspect	02	1.6%	16	9.5%

Table 2. Responses Regarding Factors Involving Decision To Take Computer.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Self	93	71.5%	98	72.0%
Parents	29	22.3%	26	19.1%
Friends	04	3.0%	06	4.4%
Merit	04	3.0%	06	4.4%

Table 3. Responses Regarding Suitability of Computer Education for Girls & boys.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Suitable for Boys	29	24.1%	07	5.8%
Suitable for Girls	20	16.6%	22	17.5%
Equally Suitable	71	59.1%	92	76.6%

Table 4. Responses about the Profession of the Students Family Members.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Doctor	35	29.1%	20	16.2%
Engineer	45	37.5%	54	43.2%
Teacher	13	10.8%	22	17.8%
Computer trained	06	5%	11	8.9%
Business Man	09	7.5%	02	1.6%
Army	02	1.6%	12	9.7%
Government Servant	10	8.3%	02	1.6%

Table 5. Responses Regarding Reasons for Not Opting Biology.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Merit	04	3%	04	3
Lengthy Syllabus	05	30.8%	04	3.3
Trained Teachers	03	2.2	01	0.76
Crowded Classes	08	6.1	01	1.76
Laboratory Facilities	02	1.5	-	-
Lack Of Self Interest	73	55.7	83	63.3
Parents Role	09	6.8	08	6.11
Examination	11	8.39	10	7.6
Learning	12	9.1	09	6.8
Subject Suitability	04	3.0	11	8.39

Table 6. Responses Regarding Availability of Computer in Home.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Personal Computer	97	80.8	105	87.5
Lack of Personal Computer	23	19.1	15	12.5

Table 7. Responses Regarding Use of Computer.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Use Occasionally	28	23.3	35	29.1
Use Daily	63	52.5	70	58.3
Use Weekly	19	15.8	06	5
Use Monthly	10	8.3	04	3.3
Never Used	-	-	07	5.8

Table 8. Responses Regarding Marks Obtained in G.Sc & Math in 8th Class.

Statement	Frequency of responses (General Science marks in 8 th class (girls)	Frequency of responses (General .Science marks in 8 th class (boys)	Frequency of responses (math marks in 8 th class (girls)	Frequency of responses (math marks in 8 th class (boys)
40-50	15 12.5%	14 11.6%	7 5.8%	04 3.3%
51-60	31 25.8%	42 35%	13 10.8%	20 16.6%
61-70	39 32.5%	29 24.16%	39 32.5%	34 28.3%
71-80	11 9.1%	15 12.5%	43 35.8%	43 35.8%
81-90	14 11.6%	12 10%	8 6.6%	7 5.8%
91-100	10 8.3%	08 6.6%	10 8.3%	12 10%

Table 9. Responses Regarding the Various Aspects of the Subject Liked By the Students.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Graphics	25	20.8	1	0.83
Software	15	12.8	30	25
Games	27	22.5	6	5
Programming	37	30.8	43	35.8
Chatting	04	3.3	8	6.6
Hardware	7	8.3	7	5.8
Teacher	1	0.83	-	-
History of computer	1	0.83	-	-
Everything	4	3.3	8	6.6
Practical	-	-	17	14.1

Table 10. Responses Regarding the Various Aspects of the Subject Disliked.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Learning	09	7.5	29	24.1
Insect	06	5	-	-
Animal	-	-	3	2.5
Dissection	6	5	-	-
Plants	17	14.1	3	2.5
Diagrams	46	38.3	26	21.6
Diversity of life	21	17.5	9	7.5
All	3	2.5	14	11.6
Un-certain	12	10	26	21.6
Practical	-	-	10	8.3

Table 11. Responses Regarding Students Plan.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Engineer	38	31.6	50	41.3
Computer Engineer	34	28.3	36	29.7
M.C.S	28	23.3	5	4.1
C.S.S	2	1.6	-	-
Lawyer	-	-	-	-
Business Man	1	0.83	8	6.6
Teacher	4	3.3	4	3.3
Pilot	5	4.1	9	7.4
Doctor	6	5	4	3.3
Programmer	2	1.6	-	-
Un-Certain	-	-	5	4.1

Table 12. Responses Regarding Student Satisfaction For Their Decision To Opt For Subjects.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Satisfied	94	78.3	100	83.3
Not Satisfied	26	21.6	20	16.6

Table 13. Responses Regarding Student Purpose Of Use Of Computer.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
For Game	2	1.6	40	25.6
For Chatting	14	11.5	20	12.8
For Study	60	49.4	56	35.8
For Collect Information's	44	36.3	34	21.7
For Multi Purposes	1	0.8	6	3.8

3.2. Views of Students Who Opted For Biology

Table 14. Description Of Responses Regarding Reasons For Opting Biology Subject.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Self Interest	44	35.2	74	30.7
Easy	12	9.6	32	13.2
Tutor Prospect	40	32	42	17.4
Easy To Understand	11	8.8	33	13.6
Future Prospect	14	11.2	43	17.8
Interest Suspect	4	3.2	17	7

Table 15. Responses Regarding Decision For Opting Biology.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Self	74	58.7	94	55.9
Parents	45	35.7	56	33.3
Friends	4	3.1	8	4.7
Merit	3	2.3	10	5.9

Table 16. Responses Regarding Suitability Of Subject Biology For Girls & Boys.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Suitable for Boys	32	26.6	12	10
Suitable for Girls	2	1.6	13	10.8
Equally Suitable	86	71.6	95	79.1

Table 17. Responses Regarding Profession Of The Students Family Member.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Doctor	31	25	29	24.1
Engineer	26	20.9	30	25
Teacher	24	19.3	24	20
Computer trained	33	26.6	27	22.5
Business Man	5	4	5	4.1
Army	5	4	5	4.1

Table 18. Responses Regarding Reasons For Not Opting Computer Education.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Merit	2	1.5	3	1.49
Lengthy Syllabus	12	9	9	4.4
Trained Teachers	3	2.2	8	3.9
Crowded Classes	2	1.5	12	5.9
Laboratory Facilities	14	10.52	3	1.49
Lack Of Self Interest	63	47.36	75	37.3
Parents Role	18	13.5	30	14.9
Examination	7	5.2	25	12.4
Learning	6	4.5	11	5.47
Subject Suitability	6	4.5	25	12.4

Table 19. Responses Regarding Availability Of Personal Computer At Home.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Personal Computer	95	79.1	91	75.8
Lack of Personal Computer	25	20.8	29	24.1

Table 20. Responses Regarding Use of Computer.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Use Occasionally	52	43.3	51	42.5
Use Daily	34	28.3	34	28.3
Use Weekly	10	8.3	14	11.6
Use Monthly	10	8.3	4	3.3
Never Used	14	11.6	17	14.1

Table 21. Responses Regarding Marks Obtained in G.Sc & Math in 8th Class.

Statement	Frequency of responses of responses (General Science marks in 8 th class (girls)	Frequency of responses of responses (General Science marks in 8 th class (boys)	Frequency of responses (math marks in 8 th class (girls)	Frequency of responses (math marks in 8 th class (boys)
40-50	7 5.8%	9 7.5%	14 11.6%	11 9.1%
51-60	16 13.3%	27 22.5%	34 28.3%	41 34.1%
61-70	36 30%	24 20%	22 18.3%	30 25%
71-80	43 35.8%	39 32.5%	23 19.1%	27 22.5%
81-90	13 10.8%	18 15%	20 16.6%	7 5.8%
91-100	5 4.1%	3 2.51%	7 5.8%	3 2.5%

Table 22. Responses regarding various aspects of the subject liked by the students.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Learning	16	13	7	5.1
Animal	29	23.5	17	12.5
Plants	10	8.1	18	13.3
Diagrams	10	8.1	5	3.7
Diversity of life	20	16.2	49	36.2
All	30	24.3	18	13.3
Genetics	8	6.5	-	-
Information about human	-	-	21	15.5

Table 23. Responses Regarding Various Aspects Of The Subject Disliked By The Students.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Programming	5	4.1	20	16.6
Graphics	4	3.3	19	15.8
Software	-	-	14	11.6
Learning	30	25	12	10
Nothing	30	25	47	39.1
All	30	25	-	-
Virus	5	4.1	4	3.3
Math Work	16	13.3	4	3.3

Table 24. Responses Regarding Plans Of The Student.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Doctor	61	50.8	56	43.7
Engineer	12	10	39	30.4
Forces	-	-	13	10.1
Teacher	5	0.8	-	-
Pilot	1	0.8	3	2.3
Banker	1	0.8	2	1.5
M.Sc	7	5.8	7	5.8
Lawyer	2	1.6	-	-
Scientist	16	13.3	-	-
Uncertain	11	9.1	-	-
Good human	3	2.5	3	2.5
P.M	1	1.8	-	-
C.S.S	-	-	1	1.8
Business man	-	-	3	2.3
M.A English	-	-	1	0.8

Table 25. Responses Regarding Student Satisfaction For Their Decision To Opt For Subjects.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
Satisfied	110	91.6	111	92.5
Not Satisfied	10	8.3	9	7.5

Table 26. Responses Regarding Student Purpose Of Use Of Computer.

Statement	Frequency Of Responses (Girls)	%Age	Frequency Of Responses (Boys)	%Age
For Game	35	27.7	5	28.9
For Chatting	20	15.8	29	16.7
For Study	31	24.6	38	21.9
For Collect Information's	40	31.7	56	32.3

4. Findings

4.1. Views of Students on Computer Option

1. Majority of the student's boys & girls opted computer subject due to their self-interest. (49.1% girls & 40.7% boys).
2. A fairly high %age of both boys & girls thinks that the subject computer studies help them in future. (24.1% girls & 16.16% boys)
3. Most of the students (71.5% girls & 72% boys) opted biology subject, as their own decision.
4. Considerable %age (22.3% girls & 19.1% boys) stated that their parents were involved in their decision.
5. 17.5% boys & 16.6% girls think that the computer is suitable for girls also while 5.8% boys & 24.1% girls think that it is suitable for boys only. Majority of the students (59.1% girls & 76.6% boys) think that computer is equally suitable for boys & girls.
6. Family members of 37.5% of girls & 43.9% boys were engineer, while 29.1% girls & 16.2% boys in the medical profession, low percentage was found in other profession.
7. More than 50% boys & girls (55.7% girls & 63.3% boys) reported that they did not opt for biology because they did not like the subject. While a very small no. of students reported other factors such as lengthy syllabus, crowded classes, lack of facilities, the factor responsible for their not opting for biology.
8. Majority of the students (80.8% girls 87.5% boys) have personal computer while a small %age do not have computer in their homes (19.1% girls, 12.5% boys).
9. Majority of students (52.5% girls & 58.3% boys) use computer daily. A considerable %age use computer occasionally i.e. 23.3% girls & 29.1% boys. A small no. of students use computer weakly (15.8% girls & 5% boys) a monthly (8.3% girls & 3.3% boys).
10. A small no. of students obtained 80-100 % marks in general science in their middle school examination. A majority of the girls obtained 61-70% (32.5%) marks & boys obtained 51-60% marks (35%). 11.6% boys & 12.5% girls obtained less than 50% marks. majority of students obtained 71-80% marks in math.
11. Different students like different aspect of computers some like programming 30.8% girls & 35.8% boys

some like software 12.5% girls & 25% boys. 22.5% girls & 5% boys like games. 20.8% girls & only 0.83% boys like graphics.

12. Among the reasons reported for not opting biology, difficulty in drawing diagrams were reported by 38.3% girls & 21.6% boys, while rote learning required in biology was reported 24.1% boys & 7.5% girl as discouraging factor. While the factors such as dislike for animals, dissections, handling plants, practical work were reported by a small minority (less than 10%) are the factors due to which they rejected biology.
13. the majority of the students aspired to become engineers (31.6% girls & 41.3%) boys, computer engineers (28.3% girls & 29.7% boys). While 23.3% girls & 4.1% boys wanted to do Mcs, CSP officers, teaching, pilot etc. were reported by less than 10% students. Only 4.1% boys were uncertain about their future plans.
14. Majority of the students are satisfied with their decision of opting the subject computer studies. (78.3% girls & 83.3% boys) while 21.6% girls & 16.6% boys are not satisfied with their decision.
15. Considerable %age of boys & girls liked to chat on computer (11.5% girls & 12.8% boys). A high %age of students use computer for taking help in their studies (49.4% girls & 35.8% boys). Fairly high %age of students use computer for collecting information's about their studies (36.3% girls & 21.7% boys). low %age is recorded in case of those students who like to play games on computer. (11.5% girls & 12.8% boys). 0.8% girls & 3.8% boys use computer for addition & subtraction purposes.

4.2. Views of Students of Biology

1. Among the reasons for opting the subject, self-interest was the major reason for a majority of the students (35.2% boys & 30.7% girls), better future prospects was the next major factor, 11.2% girls & 17.8% boys reported this factor as a major factor. Less than 20% students reported possibility of obtaining better marks (9.6% girls & 13.2% boys) & biology being comparatively easy subject (8.8% girls & 13.6% boys) as the deciding factor.
2. Majority of the students decided to take biology due to their own interest (58.7% girls & 55.9% boys). (35.7%

girls & 33.3% boys) opted for it due to their parent's pressure while factors like merit & peer pressure were not reported as a deciding factor only by a small no. of students.

3. Majority of the students said that the subject biology was suitable for both boys & girls (71.6% girls & 79.1% boys). A fairly high %age of girls think the subject is suitable for girls (26.6%) while a small %age of boys considered its suitability for girls (10%). A low %age of girls (1.6%) & comparatively high %age of boys (10.8%) think that subject is suitable for boys.
4. Majority of parents are doctors (25% girls, 24.1% boys) a fairly high %age observed was engineer i.e. (20.9% girls & 25% boys). 19.3% girls & 20% boys reported that their parents were teachers. the no. of parents who were computer trained is also noticeable (26.6% girls, 22.5% boys) the other %ages are too low to be observed 4% each are businessman & Govt. service
5. 10.52% girls reported that they did not choose for computer because lab facilities were not available in their school. While a very small no. of boys 1.99% to be exact said so. A small no. of students considered the factors such as merits, lengthy syllabus, consideration of marks, interest in the subject & suitability for the subject as the deciding factors for not opting for computer education. A high %age is observed in case of those students who opted biology due to their self-interest. (47.36% girls & 37.3% boys).
6. Majority of students has their personal computer (79.1% girls, 75.8% boys). A comparatively low %age observed in case of those who do not have personal computer (20.8% girls, 24.1% boys).
7. Most of the students use computer occasionally (43.3% girls & 42.5% boys) a fairly high %age is observed in case of those who use computer regularly (28.3% each girl & boys). (8.3% girls, 11.6% boys) use it weekly while (8.3% & 3.3%) monthly. It is interesting to note that 11.6% girls & 14.1% boys do not use computer due to lack of interest.
8. 35.8% girls & 32.5% boys obtained 71-80% marks in general science at middle level & 30% girls & 20% boys obtained 60-70% marks 13.3% girls & 22.5% boys obtained 51-60% marks. A very small no. of students 90-100% marks (4.1% girls & 2.5% boys & 40-50% marks (5.8% girls & 15% boys). While in math majority of the students obtained 51-60% marks with a little %age obtained 81-100% marks.
9. a high %age of girls (24.3%) & comparatively low %age of boys (13.3% of boys) like every aspect of the subject. Interesting to note that (23.5% girls) like to handle animals while comparatively low %age (12.5%) of boys like to do so. A fairly high %age of boys like chapter related to biodiversity while only small %age of girls agreed with them. (36.2% boys & 16.2% girls).
10. 13% girls & 5.1% boys like the learning aspect of the subject, 8.1% girls & 13.3% boys like to handle plants.

8.1% girls & 3.7% boys like to diagram. 6.5% girls like the chapters related to the genetics. 15.5% boys think that they are interested to collect information about human beings.

11. (25% girls, 39.1% boys) could not pin point what they like most about the subject.
12. 25% girls & 10% boys think that it is difficult to learn the theory of the subject of computer education.
13. 25% girls do not like anything in the subject of computer education while 11.6% boys do not like software & 13.3% girls & 3.3% do not like mathematical work. 16.6% boys & 4.1% girls do not like programming do not like virus in the computer.
14. Majority of the students want to be doctor (50.8% girls & 43.7% boys) & engineer (30.4%) the %age in case of girls is low. (10%).
15. 10.1% boys want to join forces. 4.1% girls want to be teacher. Less than 10% students want to be pilot, join banking profession, and want to do M.sc to be good human, to be PM, CSP officer, to be businessman & to do M.A English respectively. 13.3% girls want to be scientist 9.1% girls are uncertain about their future.
16. A high %age of students is satisfied with their decision (91.6% girls, 92.5% boys).
17. A low %age was observed in case, which are not satisfied with their decision (8.3% girls & 7.5% boys).
18. Majority of the students who opted biology use computer for playing games (27.7% girls & 28.95% boys).
19. A high %age is observed in case of those who collect information from computer. (31.7% girls, 32.3% boys) low %age is observed (15.8% girls & 16.7% boys) in case of those who love to chat over computer.

5. Conclusions

Self-interest was the major factor in the student's decision for opting subject computer education. Majority of the students opted for the subject due to its better future prospects, as they think that the computer subject provides a guarantee for a better future for them.

Majority of the students decide for opting subject of computer by their own choice, which is an encouraging sign that at this age they are confident to take decision. Parent's influence also plays some role in the selection of the subject. The majority of students consider computer education is suitable for both boys & girls. It is interesting that the majority of the male students think that the subject is suitable for girls also, while the girls do not think so. The student who opted computer studies have mostly engineering family background, as most of the students have intention to be engineers & computer engineer's considerable %age of students wanted to be doctor instead of having computer subject at secondary level this shows the influence of parent's profession on the student.. The personal computer in the home of students is another cause for opting subject computer study. Daily use of computer is also a cause for

opting subject. Strong mathematical background was also a noticeable factor for opting computer subject. Although Programming is the most interesting aspect of the subject computer education, but it is interesting to note that only little % age wanted to be programmer. Chatting is the major factor which attracts boys for opting computer education at secondary level. Majority of the students use computer for the purpose of collecting information & seek help in their studies. Future prospects of the student are the major factor influencing student's choice of subject. The girls indicated that it is difficult to learn theoretical part and do mathematical work in the subject of computers.

Drawing & labeling of diagram, chapters related to biodiversity of life in the subject biology are the major problems for those students who did not opt biology. However fairly high %age of students could not decide that why did they leave the subject of biology, which clearly indicates involvement of parents in their decision. To be taken under consideration that biology is comparatively easy & fairly high grades can be obtained in the subject, these are also important factors in the choice of the subject. The parents of the students have considerable effect on the decision of the students for choice of subjects as Parent's profession also influences student's choice of the subject. A majority considers the subject biology is suitable for both male and female students. The students who opt for biology achieve high marks in general science as compare to mathematics at primary level. Girls take interest in biology at a larger level yet a small percentage of boys agree with them. Girls show interest in handling plants and animals while boys do not. Boys love to study the units related to biodiversity while girls do not. Considerable numbers of students of biology fail to justify that why they did not opt the subject computer. This clearly shows their lack of interest. Most of the students who opt biology under influence of parents are not clear about what field to choose in the future. Most of the students are satisfied with their decision for opting biology subject.

6. Recommendations

1. Lab. Facility for computer education should be improved specially in girl's school & colleges to attract more students in the subject.
2. Since computer is used by majority to seek help in studies therefore its used should be taught to all students rather than making it an elective subject.
3. Rote learning components in biology should be reduced & its relevance to real life should be highlighted to attract more students.

Appendix

1. Questionnaires for the Students of Computer
Name:
Class:
Institution Name:

Parent's profession:

Please tick according to your choice

1. I opted for computer because
 - a. I have interest in it
 - b. It is easy to make marks in it.
 - c. I want to join engineering/ computer profession.
 - d. Computer is easy as compare to biology.
 - e. I have better future opportunities in it.
 - f. I have interest in technical subject.
 - g. Any other reason -----
2. decision of taking computer subject was
 - a. My own
 - b. Of my parents
 - c. Of my friends.
 - d. Based on merit
 - e. Any other then please write -----
3. according to you the subject computer is suitable for
 - a. Girls.
 - b. Boys.
 - c. For both.
4. your family members are mostly
 - a. doctors
 - b. engineers
 - c. teachers
 - d. computer trained
 - e. any other -----
5. why you did not chose the subject biology
 - a. school did not offer
 - b. it's syllabus is too long
 - c. the school has lack of trained teachers
 - d. the classes are crowdy
 - e. lack of laboratory facilities
 - f. I do not have interest in it.
 - g. Parents did not allow me
 - h. It is difficult to take marks in it.
 - i. It content has to learn more.
 - j. This subject is not suitable for me.
 - k. If your answer is 'j' then tell reason-----
6. Do you have personal computer?
 - a. yes
 - b. no
7. How often you use computer?
 - a. daily
 - b. occasionally
 - c. weekly
 - d. monthly
 - e. never used

If your answer is 'd' then tell reason

- i. I do not have computer
 - ii. I have no internet in it.
 - iii. Any other reason
8. How many marks did you get in your 8th class in G.science & math?
 - a. G.Sc -----
 - b. Math -----
 8. What you like most in subject computer?
 9. What you dislike in the subject biology?

10. What you want to be in future?
11. Are you satisfied with your decision for opting subject biology if not then why -----
12. For what purpose you use computer?
- for playing games
 - for chatting
 - for taking help in study
 - for collecting information from internet
 - any other reason -----
2. Questionnaires for the Students of Biology
- Name:
- Class:
- Institution Name:
- Parent's profession:
- Please tick according to your choice
1. I opted for Biology because
- I have interest in it
 - It is easy to make marks in it.
 - I want to join medical profession
 - Biology is easy as compare to computer
 - I have better future opportunities in it.
 - I have interest in drawing
 - Any other reason -----
2. Decision of taking Biology subject was
- My own
 - Of my parents
 - Of my friends.
 - Based on merit
 - Any other then please write -----
3. According to you the subject biology is suitable for
- Girls.
 - Boys.
 - For both.
4. Your family members are mostly
- doctors
 - engineers
 - teachers
 - computer trained
 - any other -----
5. Why you did not chose the subject biology
- school did not offer
 - it's syllabus is too long
 - the school has lack of trained teachers
 - the classes are crowdy
 - lack of laboratory facilities
 - I do not have interest in it.
 - Parents did not allow me
 - It is difficult to take marks in it.
 - I do not like technical subjects
 - I am weak in mathematics since my start
 - This subject is not suitable for me.
 - If your answer is 'k' then tell reason -----
6. Do you have personal computer?
- yes
 - no
7. How often you use computer?
- daily

- occasionally
- weekly
- monthly
- never used

If your answer is 'd' then tell reason

- I do not have computer
 - I have no internet in it.
 - Any other reason
8. How many marks did you get in your 8th class in G.science & math?
- G.Sc -----
 - Math -----
9. What you like most in biology?
10. What you dislike in the subject biology?
11. What you want to be in future?
12. Are you satisfied with your decision for opting subject biology if not then why -----
13. For what purpose you use computer?
- for playing games
 - for chatting
 - for taking help in study
 - for collecting information from internet
 - any other reason -----

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