CHAPTER IV

ANALYSIS & INTERPRETATION OF DATA

- INTRODUCTION
- ANALYSIS OF DATA FOR OBJECTIVE 1
- ANALYSIS OF DATA FOR OBJECTIVE 2
- ANALYSIS OF DATA FOR OBJECTIVE 3
- ANALYSIS OF DATA FOR OBJECTIVE 4
- ANALYSIS OF DATA FOR OBJECTIVE 5
- ANALYSIS OF DATA FOR OBJECTIVE 6
- ANALYSIS OF DATA FOR OBJECTIVE 7
- ANALYSIS OF DATA FOR OBJECTIVE 8
- ANALYSIS OF DATA FOR OBJECTIVE 9
- DISCUSSION

CHAPTER IV

ANALYSIS & INTERPRETATION OF DATA

4.0 INTRODUCTION

This is a survey type study which is undertaken to study the status of Computer Education institutions as a whole and comparatively with respect to many aspects such as, contribution of different types of Computer Education institutions in the market, such as, subsidised and self financed courses offering institutions, courses offered by them, infrastructure and other facilities of these institutions, their teaching learning methodology, problems faced by these institutions, qualification, experience and salary of teaching faculties etc. To achieve the objectives of the present study, data were collected with the help of questionnaire, interview and observation. Data were analysed mainly with the help of frequency, average and percentage. As it is mainly a qualitative study no complicated statistical techniques are used for data analysis. Analysed data are presented in tables followed by description and discussion. Objective wise analysed data is presented in the following tables.

4.1 ANALYSIS OF DATA FOR OBJECTIVE 1

Objective 1: "To Study the Development in Establishment of Computer Education institutions in Baroda District of Gujarat". To achieve the stated objective data were collected with the help of a questionnaire. Data were analysed using frequency, average and percentage. The analysis of data for this objective is presented in the table 4.1 to table 4.4 which is analyzed and discussed as follow.

Table 4.1 : Frequency wise, Percentage wise and Year of Establishment wise Distribution of Computer Education Institutions.

Year of Establishment	Frequency	Percentage
1986-1990	02	05.00
1991-1995	03	07.50
1996-2000	20	50.00
2001-2004	15	37.50
Total	40	100.00

Table 4.1 depicted that the expansion of Computer Education institutions was 5 percent, 7.50 percent, 50 percent and 37.50 percent during the period of 1986-1990, 1991-1995, 1996-2000 and 2001-2004 respectively The same table also showed that during the period of 1986 and 1995 the expansion of Computer Education institutions was slow as only 12.5 percent of the institutions were established during this decade. A large number i.e. 50 percent of the total institutions established during 1996 and 2000. It showed the rapid expansion of Computer Education in the Baroda district in this five years. It was also noticed that there was slow pace of expansion i.e. 37.50 percent during the next years i.e. 2001 to 2004.

It leads to the conclusion that expansion of Computer Education in Baroda district was slow in first ten years i.e. during 1986 to 1995, it was highest during next five years i.e. during 1996 to 2000. Then the pace of expansion was found slow afterward i.e. during 2001 to 2004.

Table 4.2: Frequency wise and Percentage wise Distribution of Different Types of Computer Education Institutions

Types of Institutions	Frequency	Percentage
Franchisee	15	37.50
Self managed with self designed courses	12	30.00
Self managed but runs courses of other bodies	03	07.50
Study centres of universities	04	10.00
Affiliated Colleges	02	05.00
DOEACC certified institutions	02	05.00
University Department	01	02.50
ITI	01	02.50
TOTAL	40	100.00

Table 4.2 exhibited that 37.50 percent, 30 percent, 7.50 percent and 10 percent institutions were franchise institutions, self managed with self designed courses, Self managed but runs courses of other bodies and study centres of universities respectively. The same table also exhibited that 5 percent, 5 percent, 2.50 percent and 2.50 percent institutions were affiliated colleges, DOEACC certified institutions, university department and ITI institutions respectively.

It leads to the conclusion that franchise institutions and Self managed institutions had equal contribution in the field of number of Computer Education institutions i.e. 37.50 percent in each, whereas, from the rest 25 percent institutions, 17.50 percent institutions were concerned with university as it consisted of university study centres, affiliated college to university, and university department imparting Computer Education. The rest 7.50 percent institutions consisted DOEACC certified institutions and Computer Education imparted through ITIs.

Table 4.3 :Category wise, Frequency wise and Percentage wise Distribution of Computer Education Institutions.

Category of the Institutions	Frequency	Percentage
Government Recognised	10	25.00
Franchisee institutions	15	37.50
Self managed private institutions	15	37.50
Total	40	100 00

The Table 4.3 depicted that 25 percent institutions were Government recognised. 37.50 percent institutions were franchisee institutions and rest 37.50 percent institutions were Self managed private institutions.

It leads to conclude that 75 percent of total number of institutions were found to be private and the rest 25 percent institutions found to be were government recognised institutions. It means that private institutions were thrice of number of government recognised institutions.

Table 4.4: Frequency wise and Percentage wise Distribution of Different Types (Financial Affiliation) of Computer Education Institutions.

Type of the Institution (Financial Affiliation)	Frequency	Percentage
Subsidised institutions	02	05
Self financed institutions	38	95
Total	40	100

Table 4.4 revealed that majority (95 percent) of the computer training institutions were self financed and only a few (5 percent) institutions were subsidised course offering institutions which is very low in comparison to self financed institutions. This picture is very disappointing as there is little scope of education for economically poor but intelligent students.

In Baroda district of Gujarat, Computer Education institutions started establishing since 1986. The initiative was taken by a private franchise institution, Aptech Ltd. in 1986 and later on other institutions came up gradually. Although it is worth mentioning that first government institution commenced in the year 1990 by ITI in the district before this institution there was no role of government institutions in this area of education at all.

4.2 ANALYSIS OF DATA FOR OBJECTIVE 2

Objective 2, "To Study the Norms, Rules, Directives, Ordinance, etc. Applicable for the Development of Computer Education in Baroda District of Gujarat". To achieve objective 2 data were collected by contacting various Computer Education institutions, and from internet which are analysed and discussed in succeeding paragraphs.

Computer Education is being imparted in Baroda district of Gujarat by government recognised and private bodies. It was started in eighties by some private computer training agencies, such as, Aptech Computer Education, NIIT etc. Later it was followed by other bodies like University Departments, DOEACC Certified institutions, self managed private institutions. Till 1995, the growth of Computer Education institutions was slow. During the years 1995 and 2000 the growth of Computer Education institutions was at its highest level. But after 2000 A.D. the growth of Computer Education in the district started declining. Till the date the growth of Computer Education is in the lowest step of the ladder. At this juncture when Computer Education is not in healthy state, many questions arise about the present status of computer training agencies. Education at the district is subject to centre government and state government. As far as the education of Gujarat state is concerned, central government and state government both have their roles. In framing policy of education both central government and state government play their roles.

For the development of Computer Education in the district both central government and state government have developed some sort of policies. At present it is considered to analyse the policies, plans, directives and ordinances of both central as well as state government to derive the implication of those on the growth and development of Computer Education in the district, which is presented in the following paragraphs.

In tenth five year plan (2002-2007), Information Technology (IT) policy is given importance. It has been envisioned in the document that for the development of Information Technology sector, there is need to develop Computer Education. The objectives of IT policy of central government have put emphasis on the development of Computer Education. Following are the objectives of the IT policy as mentioned in the tenth five year plan.

1. **Ensuring the sustained growth of software and IT-enabled services and increase India's share in the global IT market as well as expanding the domestic market.**

2. Putting in place a policy framework to make India a major force in the hardware manufacturing sector.

3. Greater use of IT in governance.

4. Bridging the digital divide.

5. Promoting the development of software in Indian languages and

6. **Improving the quality of manpower, skills and research and development in the sector.**

From the given list of objectives of tenth five year plan, objective 6 highlights the need of Computer Education to improve the quality of the man power. Even objective 1 focuses for sustained growth of software and IT-enabled services and to increase India's share in the global IT market as well as expanding the domestic market; which can't be realised without contribution of Computer Education. Apart from this it can be said that Computer Education has the role to play in realising all the objectives of IT policy. Hence in order to realise the objectives of IT policy of the government, state government has given due importance to Computer Education in the state with the help of private participation. Computer Education is to prepare human resource in the field of IT, without which no development in software and hardware is possible. To realise the objectives of IT policy of central government,

strategy for software development, hardware development and Human Resource development has been drafted.

4.2.1 Strategy of Central Government for Human Resources Development

In order to achieve sustained growth in the IT sector and maintain India's competitive edge in the field, high quality professionals in adequate numbers are required. **According to a McKinsey- NASSCOM study, India would require 2.2 million IT professionals by 2008 – 1.1 million in the hardcore IT sector and an equal number for IT-enabled services. The country needs to ensure the right mix of technical, business and functional skills in the workforce to meet the needs of individual business segments and customer markets. Educational and training institutions need to match the demands of the industry. The major initiatives required in this regard are mentioned as follow.**

- Continuous upgradation of standards at the **school** level with emphasis on Physics, Mathematics and English.

- Make microelectronics and biology the new focus areas in tertiary education.

- **Updating the syllabus** of computer engineering, electronics and IT in various technical institutions in line with the demands of the industry. **The curriculum in other branches of engineering should also be reoriented and broad based to include IT subjects.**

- **Postgraduate engineering education and innovative research in IT are imperative** in order to maintain quality and facing new challenges in this dynamic sector.

- **Ensuring a continuous upgrading of teaching faculties and introduction of teaching aids like computers, access to Internet, videos etc.**

- **Augmenting and upgrading facilities** in existing RECs and engineering colleges under deemed universities to Indian Institute of Technology (IIT) level so that the country has at least **100 such institutions** by the end of the Tenth Plan to meet the requirements of quality manpower.

- Recognizing, without further delay, the 'C' **level** course of the Department of Electronics Accredited Computer Courses (DOEACC) as equivalent to **M.Tech.** in computer engineering for all purposes.

To realise the aims and objectives of strategy of Central Government for Human Resource Development, task force has given following recommendations on HRD in IT (2001) policy.

4.2.1.1 *Recommendations of the Task Force on HRD in IT (2001) Policy*

Task force on HRD in IT (2001) policy recommended the following points for the development of IT and Computer Education.

- Creating information on IT manpower.

- Promoting initiatives in HRD in IT with focus on bridging the digital divide, innovation in pedagogy etc.

- **Monitoring the intake and out-turn of IT professionals by institutes with the objective to double intake by 2001-02 and triple it by 2003.**

- **Setting up of exclusive IT institutes, improving their quality, infrastructure and promoting networking.**

- **Launching an IT faculty development initiative.**

- **Evolving curriculum and courseware of IT institutes.**

- **Promoting technology-mediated IT education using a web-based and multimedia approach.**

- Improving connectivity.

- **Promoting postgraduate education and research.**

- Facilitating interface with the IT industry.

- Sharing investments between the central/ state governments and industry.

In the mentioned recommendation of HRD on IT (2001) focus is thrown on doubling and tripling the intake to produce IT professionals, setting up of exclusive IT institutes, improving their quality, infrastructure and promoting networking, launching an IT faculty development initiative, evolving curriculum and courseware of IT institutes, promoting technology- mediated IT education using a web-based and multimedia approach, promoting postgraduate education and research.

Following the policy of central government, state government has drafted it's IT policy which is given below.

4.2.2 IT Policy of Government of Gujarat

To promote IT in state and to fulfill the objectives of Centre government related to IT, state government drafted a policy of IT with the resolution, "The state government considers Information Technology as a Thrust area for development of the state of Gujarat. The government is keen to spread its culture all over the state which will bring about a knowledge based society over the next decade." The state government also framed the following objectives to achieve the goals of IT policy.

- Over all IT growth in the state of Gujarat.

- To create enormous new employment opportunities in the state,

- To train and develop skilled manpower in IT.

- To facilitate Information outlets at the doorsteps of the common man.

- To make Government - Citizen interface more effectively, efficiently and transparent.

4.2.2.1 *Policy of Private Sector Participation*

As information technology is likely to emerge as a major infrastructure for the State, participation of private sector is extremely important, both from the point view of attracting additional resources and introducing sufficient competition so that the focus on customer is not missed out in any case. Private sector would participate in (1) creation of 'information corridor, (2) in setting up of information kiosks and (3) provision of services for creating of database oriented services.

Private participation is encouraged for global, national and regional agencies, under state IT policy, to work in setting of high-tech cities, IT training and educational institutes and economic turn will create enormous job opportunities and economic development of state. IT secretariat will evolve suitable policy for private - public participation in this area.

4.2.2.2 *Policy on Education*

IT seeks to create a knowledge based society and education is the very basic for creating such a superstructure. In fact the very success of IT initiatives whether in the government or in the industry or at homes would largely depend upon the extent to which our educational system caters to the need of trained which our educational system caters to the need of trained manpower as well as bring down the fear of

technology. IT policy of Government of Gujarat recommended the following points related to education for the development of IT in the state.

- Compulsory Computer Education would be introduced in all the schools from class V onwards.

- Provide internet connectivity to all schools in the state by 2001 A.D. This would be subject to availability of Internet connectivity in that area.

- Creation of state library networks.

- Setting up of Gujarat Institute of Information Technology which would supply quality manpower for hardware and software development.

- Promotion of Gujarati on computer. This would be achieved by setting up of dedicated time bound projects, which would develop suitable technologies to enable greater usage of Gujarati on computer.

4.2.2.3 *Policy on IT Industry*

IT thrust in the public service essentially assume existence of a very strong IT industry in the state. It is the endeavor of the state government to help create new job opportunities for the youth of the state in this sunrise industry. It would only be possible when there is extensive use of computer for the public services, in businesses and in homes. Location of strong IT industry in the state would also give a fillip to export of IT related services and products.

IT plan submitted by National Task Force has targeted one PC per 50 persons by 2008 A.D. State Government shall endeavor that this target is achieved by the year 2005 AD.

State government had also planned to take the help of private agencies imparting Computer Education to impart training to state government employees.

State government documents like, Minutes of the Empowered Committee dated 18.01.99, G.R. of IT Div. G.A.D. NO: ITP-1099-434-ITD dated 6.5.99, G.R. of I.T. Div. G.A.D. NO: ITP- 1098-127-ITD dated 10.10.98, and report of the Expert Committee dated 8.7.99 have given details about the training of state government employees in Computer Education. Initially twelve agencies were selected and empanelled for imparting computer training to the state government employees. Like, Aptech, LCC, NIIT, Informatics, C-DAC, Pentasoft, CMC, ET & T, TATA Infotech, Boston Education & Software Technologies Ltd., Karrox Technology, SSI Ltd. Apart

from these agencies 21 more computer agencies were identified district wise in Gujarat for imparting Computer Education. They were Academy for Computer Training Pvt. Ltd., Career Infotech, CMS Computer Institute, CIC-CCIT, Quasar Software & Solutions, Net Vision Web Technology, Gujarat Law Society, All India Institute of Local Self Governent, Softrack Technology Export Ltd., Softocom Infosys (I) Pvt. Ltd., Computer Eye, Ko-Expo Consultancy, Serio Infotech (P) Ltd., Gujarat Infotech (P) Ltd., Harish Infotech Pvt. Ltd., Infosystem International, Eagle Institute, System Plus, Taj Infosys, Ace Software Exports Ltd., and Xsis Power System.

In addition to this, the institutions having DOEACC (Department of Electronics Accreditation of Computer Courses) or IETE (Institute of Electronics and Telecommunication Engineers) accreditation will be considered for imparting training to government employees with prior permission of Information Technology Division, General Administration Department, Government of Gujarat, Gandhinagar.

State government has given significance to private participation in IT education in it's IT policy. As per the policy of state government, participation of private sector is extremely important, both from the point view of attracting additional resources and introducing sufficient competition so that the focus on customer is not missed out in any case. In addition as mentioned earlier, certain private computer training agencies are identified too for computer training to government employees.

As an outcome of the IT policy of the government, Computer Education has taken shape under that umbrella in varied colours in the state and district. There are various type of agencies which are imparting Computer Education in the districts, some of them are government recognised agencies like, university departments and it's affiliated institutions, DOEACC certified institutions etc. whereas the contribution of private sector can't be overlooked, it includes franchisee institutions of renowned computer training agencies like NIIT, Aptech, SSI etc and self managed private institutions.

But here the million dollar question arises is whether there are norms or criteria or guidelines under whom these institutions have taken shape ? what are those norms, criteria, guidelines ? who have given them ? etc.. Before coming to the answer of this question, it is worth mentioning that except self managed private institutions, all other type of institutions have taken shape under certain norms,

criteria or guidelines. Those are presented category wise here and copies of those are attached in the Appendix 5 to 10

4.2.3 Norms, Criteria and Guidelines of Universities

Universities are imparting Computer Education though university departments. Certain universities were imparting Computer Education through affiliating college and study centres. Universities were imparting UGC recognised courses like BCA, PGDCA, MCA, B.Sc.(IT), M.Sc.(IT) etc. through their study centres and affiliated colleges. In Baroda district of Gujarat following universities were imparting Computer Education courses through university departments, affiliated colleges and study centres registered by the concerned university.

1. South Gujarat University, Surat affiliated Takshila BCA College, Takshshila Vidyapeeth Sansthan, Baroda.

2. Gujarat University, Ahmedabad affiliated Pipadia BCA College, Sanskar Trust, Pipadia.

3. M.S. University of Baroda, Vadodara (Applied Mathematics Department)

4. MakhanLal Chaturvedi R.P. University, Bhopal affiliated BigByte Computer Education, Study Centre for B.C.A and PGDCA

5. Sikkim Manipal University, Karnataka, affiliated Suntech Computer Education, Karelibaug, Baroda and Manipal IT, Nizampura, Baroda, Study Centres for BCA, MCA, B.Sc. and M.Sc (IT) etc.

Most of the Universities have specific norms, criteria and guidelines for different Computer Education Courses. For Master degree level courses in Computer Education AICTE norms and criteria are to be followed. Affiliated colleges and study centres need to fulfill the specific norms and conditions related to security deposit, registration, motto of organisation (non profit organisation), infrastructure, carpet area, faculty requirement (qualification, experience, part time , full time etc), teaching requirements, computer laboratory (facility and access available to students), library, books and periodicals, advertisement criteria, admission process, criteria and eligibility criteria, Following the reservation rule as per the state government laws, fees charged, examination norms, certification, attendance, syllabus and it's requirements, time table, and location etc. Affiliation norms and criteria of South Gujarat University are given in Appendix 6. Affiliation norms and criteria of Gujarat

University are given in Appendix 7. Affiliation norms and criteria of Makhan Lal Chaturvedi R.P. University are given in Appendix 8. Affiliation norms and criteria of AICTE (All India Council for Technical Education) are given in Appendix· 5.

4.2.4 Norms and Criteria for Franchise Study Centres

Computer Education institutes those were running Computer Education Courses under franchise conditions of giant Computer Education agencies like, NIIT, Aptech, LCC, SSI etc. were known as franchise study centres of the respective agency. These agencies have specific norms and criteria related to infrastructure, security deposit, software and hardware requirement, teaching staff requirement, code of ethics, students' admission administration, library facility etc. to give permission for franchise study centres. Almost all the agencies had similar requirements to follow for franchise study centres. Copy· of norms and criteria of Aptech Computer Education in given in Appendix: 10.

· 4.2.5 Norms and Criteria of DOEACC

The Department of Electronics (DoE) formulated a comprehensive policy on computer software export. Embodied therein, was software development and training to generate quality manpower by harnessing the competence and expertise available in the private sector computer training institutes, thereby widening the educational opportunities in the area of computers. The DOEACC (Department of Electronics Accredited Computer Courses) scheme is the outcome of a joint venture by Dept. of · Electronics (DoE) and All India Council of Technical Education (AICTE).

The Scheme provides educational opportunities in computers for a 10+2 and above qualified candidate, through institutes/organisation in the non-formal sector (Private/ Government) which are accredited to conduct specified courses based on certain norms and criteria. The scheme provides requisite flexibility, for individuals to get M.Tech. equivalent degree.

.The following four levels of courses were offered under DOEACC "O" level – Business Professional Programmer, "A" level - Advanced Diploma, "B" level – ' Graduate (MCA), "C" level – Post Graduate (M.Tech.).

857 DOEACC certified institutions were found imparting Computer Education throughout the country from which 24 institutions were in Gujarat and twowere in

Baroda District of Gujarat. The DOEACC had it's own norms and criteria to certify any institution to run it's courses. DOEACC Norms and Criteria are given in appendix: 11

4.2.6 Norms and Criteria for ITI Conducted Courses

Industrial Training Institute, Baroda runs many employment oriented courses. As a part of it since 1991 ITI is imparting Computer Education. ITI is imparting Computer Education through a software course entitled COPA (Computer Operator and Programming Assistant). DGET (Director General of Employment and Training) is the authority for looking after the Computer Education of this course). ITI has been imparting Computer Education through it's department. Norms and criteria of ITI for Computer Education Department are given in appendix: 9.

4.2.7 Norms and Criteria for Self Managed Institutions

Self managed institutions are those autonomous institutions of Computer Education which are established without following any norms or criteria of any controlling body. It was found that these institutions had their own norms and criteria for different courses which used to change from time to time.

It was found that there were norms and criteria for Computer Education in Baroda district of Gujarat for 62.50 percent of the institutions of Computer Education which included government recognised and franchise institutions. For self managed institutions there were no norms and criteria. They were established without any controlling body. But prescribed norms and criteria were not found followed strictly except ITI, DOEACC and university departments. So it can be concluded that 90 percent institutions were found running without following norms and criteria.

4.3   ANALYSIS OF DATA FOR OBJECTIVE 3

Objective 3 "To Study the Status of Computer Education Coursed Offered by Different Institutions in Baroda District of Gujarat." To achieve the stated objective 3 data were collected with the help of questionnaire which are analyzed qualitatively. From the collected data it was found that there were 15 common computer courses which were offered in certain institutions. At the same time it was found that there were 33 individual computer courses which were offered

in different specific institutions. Analysis of the data for both commonly offered courses and individually offered courses is given as follow.

Table 4.5 to table 4.19 describes about common courses offered by different institutions. Table 4.20 to table 4.29 describes about individual courses offered by different institutions.

4.3.1 Common Courses Offered by Different Computer Education Institutions

Some of the courses were found common in many institutions. Courses like DTP, TALLY, Visual Basic, Basic / MS Office / Office Automation, BCA, MCA, PGDCA, Java, Oracle, C & C++, AutoCAD and Certificate in Multimedia were found common in many institutions. Detailed analysis and description about these courses are given in table 4.5 to table 4.19. Table 4.5 gives detailed description and analysis about the course details of DTP (Desk Top Publishing)

Table 4.5: Details about Desk Top Publishing (DTP) Course Offered by Computer Education Institutions.

Course Details	Analysis and Description
Name of the course	DTP (Desk Top Publishing)
Frequency and percentage of institutions	Offered in 17.50 percent institutions.
Course duration	It varied from 2 to 6 months. 3 months duration in 57.14 percent institutions, and 2, 4 & 6 months in remaining three institutions.
Course hours	Varied from 60 to 150 hours. In 73.43 percent institutions, it varied from 110 to 120 hours. In two institutions it was found to be 60 and 150 hours.
Ratio of theory & practical teaching hours	Ratio of practical and theory was found 2:1 in 85.71 percent institutions. In one institute no theory was found taught.
Course planning authority	Institution it self in all institutions.

Course Details	Analysis and Description
Type of course : Degree / Diploma / Certificate	Certificate course in all institutions.
Type of course : Self financed / Subsidized	Self financed course in all institutions.
Type of course : Hardware / Software	Software course in all institutions.
Type of course : Part time / Full time	Part time course in all institutions.
Weightage for theory & Practical in evaluation	In 73.43 percent institutions, 75 percent weightage was given to practicals and in rest two institutions, equal weightage was given to both theory and practical.
Number of students per batch	Varied from 4 to 16 students per batch. Average students per batch were found to be 9.
Rate of success	In 73.43 percent institutions, rate of success was 100 percent and in rest two institutions, it was found 80 percent and 90 percent respectively.
Rate of dropouts	In 73.43 percent institutions, there were no dropouts and in rest two institutions it was found to be 10 percent and 20 percent respectively.
Fees	Varied from Rs. 1,200 to Rs. 2,700. In 57.14 percent institutions, it was found to be Rs. 2,000. In other three institutions it was found to be Rs. 1,200, Rs. 2,300 and Rs. 2,700 respectively Average fees was found Rs. 2,028
Eligibility criteria	No fixed Eligibility criteria was found in all the institutions.
Admission criteria	No fixed Admission criteria was found in all the institutions.
Clientele group	College students, employed and unemployed people.
Course components	Corel Draw, Adobe Page Maker, Adobe Photo Shop, Adobe Illustrator, Photo Paint, Shree Lipi, Sulekh Lipi.

From table 4.5, DTP was found to be a 2 to 6 months duration certificate, software and part time self financed course with an average fees of Rs. 2,028 offered

by 17.5 percent institutions in Baroda district. The course was found more practical oriented with high rate of students success. The course was found with similar course components. Most of the institutions were found with no fixed eligibility and admission criteria. Table 4.6 gives detailed description and analysis about the course details of course Tally.

Table 4.6: Details about Tally Course Offered by Computer Education Institutions.

Course Details	Analysis and Description
Name of the course	Tally
Frequency and percentage of institutions	Offered in 10 percent (4) institutions.
Course duration	Varied from one week to 3 months. Different in each institution. It was one week, one month, one and half month and three months in four different institutions.
Course hours	Varied from 12 to 150 hours. Different in each institution. It was 12, 60, 100 and 150 hours in four different institutions.
Ratio of theory & practical teaching hours	Ratio of practical and theory was found 1:1 in 75 percent institutions. In one institute 1:4 for theory and practical respectively was found.
Course planning authority	75 percent institutions self and Tally academy for one insititution.
Type of course : Degree / Diploma / Certificate	Certificate course in all institutions.
Type of course : Self financed / Subsidized	Self financed course in all institutions.
Type of course : Hardware / Software	Software course in all institutions.
Type of course : Part time / Full time	Part time course in all institutions.
Weightage for theory & Practical in evaluation	In 50 percent institutions, 75 percent weightage was given to practicals and in rest two institutions, equal weightage was given to both theory and practical.

Course Details	Analysis and Description
Number of students per batch	Varied from 2 to 21 students per batch. Average students per batch were found to be 10.
Rate of success	100 percent in 75 percent institution and 90 percent in one institution.
Rate of dropouts	In 75 percent institutions, there were no dropouts and in rest one institutions it was found to be 10 percent.
Fees	Varied from Rs. 5,00 to Rs. 4,000. In 50 percent institutions, it was found to be Rs. 2,000. In rest two institutions it was found to be Rs. 500, and Rs. 4,000 respectively Average fees was found Rs. 2,125.
Eligibility criteria	No fixed Eligibility criteria was found in all the institutions.
Admission criteria	No fixed Admission criteria was found in all the institutions.
Clientele group	School and College students, in-service and unemployed people.
Course components	Company wise account maintenance, Voucher entry, Inventory and stock detail, Balance sheet, Day book, Profit & Loss A/c., Trial Balance, Import & Export in Worksheet application.

From table 4.6, Tally was found to be a one week to 3 months duration certificate, software and part time self financed course with an average fees of Rs. 2,125 offered by 10 percent institutions in Baroda district. The course was found more practical oriented with high rate of students success. The course was found with similar course components. Most of the institutions were found with no fixed eligibility and admission criteria. Table 4.7 gives detailed description and analysis about the course details of Visual Basic.

Table 4.7: Details about Visual Basic Course Offered by Computer Education Institutions.

Course Details	Analysis and Description
Name of the course	Visual Basic
Frequency and percentage of institutions	Offered in 12.50 percent (5) institutions.
Course duration	Varied from 2 to 5 months. 2 months duration in 80 percent institutions, and 3 months in remaining one.
Course hours	Varied from 40 to 180 hours. Different in all the institutions. It was 180, 145, 90, 60, and 40 hours. Average hours were found to be 103 hours.
Ratio of theory & practical teaching hours	Ratio of practical and theory was found 2:1 in 60 percent institutions. It was found 1:1 in rest 40 percent institutions.
Course planning authority	80 percent institutions self and head office of franchise in 20 percent institutions.
Type of course : Degree / Diploma / Certificate	Certificate course in all institutions.
Type of course : Self financed / Subsidized	Self financed course in all institutions.
Type of course : Hardware / Software	Software course in all institutions.
Type of course : Part time / Full time	Part time course in all institutions.
Weightage for theory & practical in evaluation	In 60 percent institutions, 75 percent weightage was given to practicals and in rest 40 percent institutions, only 10 : 90 percent weightage was given to both theory and practical respectively.
Number of students per batch	Varied from 4 to 12 students per batch. Average students per batch were found to be 7.
Rate of success	100 percent success in all the institutions.
Rate of dropouts	No dropouts at all.

Course Details	Analysis and Description
Fees	Varied from Rs. 1,500 to Rs. 6,000. In 40 percent institutions, it was found to be Rs. 2,000. In other three institutions it was found to be Rs. 1,500, Rs. 4,000 and Rs. 6,000 respectively. Average fees was found Rs. 3,100.
Eligibility criteria	No fixed Eligibility criteria was found in all the institutions.
Admission criteria	No fixed Admission criteria was found in all the institutions.
Clientele group	College students and unemployed people.
Course components	Event handling, Project, Forms, Modules, Error Handling, Class modules, Working with MDI and SDI applications, Flex Grid Control, Hierarchical Flex Grid Control, Data Grid, Tree View, Tool Bar and Menus, Control Array, DAO, ADO, RDO, API's , COM, DCOM, Data Report, Crystal Report, Creating ActiveX Controls / DLL / EXE/ Documents. Package and Deployment, Creating Setup Package for System.

From table 4.7 Visual Basic was found to be a 2 to 5 months duration certificate, software and part time self financed course with average fees of Rs. 3100 offered by 12.5 percent institutions in Baroda district. The course was found more practical oriented with high rate of students success. The course was found with similar course components in most of the institutions. Most of the institutions were found with no fixed eligibility and admission criteria. Table 4.8 gives detailed description and analysis about the course details of Basic / Office Automation / M.S. Office.

Table 4.8: Details About Basic / Office Automation Course Offered by Computer Education Institutions.

Course Details	Analysis and Description
Name of the course	Basic / Office Automation / M.S.Office
Frequency and percentage of institutions	Offered in 12.50 percent institutions.
Course duration	It varied from 1 to 3 months. 2 months duration in 60 percent institutions, and 1 and 3 months in remaining two institutions.
Course hours	Varied from 50 to 60 hours.
Ratio of theory & practical teaching hours	Ratio of practical and theory was found 1:2 in 40 percent institutions. In other 40 percent institutions it was found to be 1:1 and in remaining one institution no theory was taught.
Course planning authority	Institution itself in all institutions.
Type of course : Degree / Diploma / Certificate	Certificate course in all institutions.
Type of course : Self financed / Subsidized	Self financed course in all institutions.
Type of course : Hardware / Software	Software course in all institutions.
Type of course : Part time / Full time	Part time course in all institutions.
Weightage for theory & practical in evaluation	In 60 percent institutions, equal weightage was given to practicals and theory and in rest two institutions, 75 percent weightage was given to practicals.
Number of students per batch	Varied from 4 to 20 students per batch. Average students per batch were found to be 11.
Rate of success	100 percent in all institutions.
Rate of dropouts	Not at all.

Course Details	Analysis and Description
Fees	Varied from Rs. 500 to Rs. 1,300. In 60 percent institutions, it was found to be Rs. 1,000. In other two institutions it was found to be Rs. 500, and Rs. 1,300. Average fees was found Rs. 960.
Eligibility criteria	No fixed Eligibility criteria was found in all the institutions.
Admission criteria	No fixed Admission criteria was found in all the institutions.
Clientele group	School and college students, employed and unemployed people, house wives
Course components	Introduction to computer hardware and software, Windows Basic, DOS, Backup on Floppies & CDs, MS Word, MS Excel, MS Power Point, Introduction to Internet & E-Mail.

From table 4.8 Basic / Office Automation / M.S.Office was found to be a 1 to 3 months duration certificate, software and part time self financed course with an average fees of Rs. 960 offered by 12.5 percent institutions in Baroda district. The course was found more practical oriented with high rate of students success. The course was found with similar course components. Most of the institutions were found with no fixed eligibility and admission criteria. Table 4.9 gives detailed Description and analysis about the course details of BCA (Bachelor in Computer Application)

Table 4.9: Details about BCA (Bachelor in Computer Application) Course Offered by Computer Education Institutions.

Course Details	Analysis and Description
Name of the course	BCA (Bachelor in Computer Application)
Frequency and percentage of institutions	Offered in 12.50 percent institutions.
Course duration	Three years in all the institutions

Course Details	Analysis and Description
Course hours	Approximately 3,600 hours in all the institutions.
Ratio of theory & practical teaching hours	Ratio of theory and practical was 2:1 in all the institutions.
Course planning authority	Respective universities
Type of course : Degree / Diploma / Certificate	Degree course in all institutions.
Type of course : Self financed / Subsidized	Self financed course in all institutions.
Type of course : Hardware / Software	It was software course in all institutions.
Type of course : Part time / Full time / Both	It was a full time course in all institutions.
Weightage for theory & Practical in evaluation	60 : 40 in theory and practical respectively in all the institutions.
Number of students per batch	Varied from 15 to 60 students per batch. Average 34 students per batch.
Rate of success	Varied from 40 percent to 75 percent. Average 60 percent students passed.
Rate of dropouts	Average 6 percent students dropped out.
Fees	Varied from Rs. 60,000 to Rs. 90,000. In 60 percent institutions, it was found to be Rs. 72,000. In other two institutions it was found to be Rs. 60,000, and Rs. 90,000. Average fees was found Rs. 73,200.
Eligibility criteria	Minimum 50 percent in H.S.C. in any discipline.

Course Details	Analysis and Description
Admission criteria	Merit based in 100 percent institutions. In 80 percent it was decentralised and in rest one centralised admission were found.
Clientele group	H.S.C passed and College students.
Course components	Basics of Computer, PC Software, Computer Organization, Computer Programming & Techniques, Digital Electronics and Micro processor, OS, Data Base Management System, Computer oriented Numerical & Statistical Methods, Data Structure, Programming in C & C++, Software Engineering, Relational Database Management System, Multimedia and Web Designing, Computer Networks.

From table 4.9, BCA (Bachelor in Computer Application) was found to be a 3 years duration bachelor degree, software and full time self financed course with an average fees of Rs. 73,200 offered by 12.5 percent institutions in Baroda district. The course was found with 2 : 1 in ratio of theory and practical teaching hours respectively with 60 percent in most of the institutions rate of students success. The course was found with similar course components. In 80 percent institutions admission process was de-centralised whereas, in one institute process of admission was found centralised but merit was the criteria for admission in all institutions. Table 4.10 gives detailed Description and analysis about the course details of MCA (Master in Computer Application).

Table 4.10: Details about MCA (Master in Computer Application) Course Offered by Computer Education Institutions.

Course Details	Analysis and Description
Name of the course	MCA (Master in Computer Application)
Frequency and percentage of institutions	Offered in 5 percent institutions.
Course duration	Three years in all the institutions
Course hours	Approximately 3,600 hours in all the institutions.

Course Details	Analysis and Description
Ratio of theory & practical teaching hours	Ratio of theory and practical was 2:1 in all the institutions.
Course planning authority	Respective universities
Type of course : Degree / Diploma / Certificate	Master degree course in all institutions.
Type of course : Self financed / Subsidized	Self financed course in all institutions.
Type of course : Hardware / Software	Software course in all institutions.
Type of course : Part time / Full time	Full time course in all institutions.
Weightage for theory & practical in evaluation	60 : 40 in theory and practical respectively in all the institutions.
Number of students per batch	9 and 14 students respectively.
Rate of success	Varied from 40 percent to 75 percent. Average 55 percent students passed.
Rate of dropouts	Average 10 percent students dropped without completion.
Fees	Rs. 60,000 in both institutions
Eligibility criteria	Minimum 50 percent in graduation with any discipline.
Admission Criteria	Merit in all institutions. Decentralised admission procedure in both institutions.
Clientele group	Graduate people.
Course components	PC Software, Computer Organization, Digital Electronics and Microprocessor, OS, HTML, Computer oriented Numerical & Statistical Method, Data Structure, Programming in C & C++, Software Engineering, Relational Database Management System, Web Designing, Computer Networks, Unix, Linux, Shell Programming, ORACLE, Visual Basic, Dot Net, Java, Advance Java, Software Development Life Cycle(SDLC), Projects Development, Linux Internet Programming, AI.

From table 4.10, MCA (Master in Computer Application) was found to be a 3 years duration masrer degree, software and full time self financed course with an average fees Rs. 60,000 offered by 5 percent institutions in Baroda district. The course was found with 2 : 1 in teaching hours of theory and practical teaching hours respectively with an average of 55 percent rate of students' success. The course was found with similar course components in all the institutions. In all the institutions admission process was found de-centralised on merit basis. Table 4.11 gives detailed Description and analysis about the course details of PGDCA (Post Graduate Diploma in Computer Application).

Table 4.11: Details about PGDCA (Post Graduate Diploma in Computer Application) Course Offered by Computer Education Institutions.

Course Details	Analysis and Description
Name of the course	**PGDCA (Post Graduate Diploma in Computer Application)**
Frequency and percentage of institutions	Offered in 12.50 percent (5) institutions.
Course duration	One and half year in part time and one year in full time
Course hours	1200 hours approximately.
Ratio of theory & practical teaching hours	Ratio of theory and practical was 2:1 in all the institutions.
Course planning authority	Respective universities
Type of course : Degree / Diploma / Certificate	Post graduate Diploma course in all institutions.
Type of course : Self financed / Subsidized	Self financed course in all institutions and in one institution it was offered as both as a self finance as well as a subsidised course..
Type of course : Hardware / Software	It was software course in all institutions.
Type of course : Part time / Full time / Both	It was part time course in all institutions and in one it was part time as well as full time.

Course Details	Analysis and Description
Weightage for theory & Practical in evaluation	60 : 40 in theory and practical respectively in all the institutions.
Number of students per batch	30 in 10 percent institutions and data of one institution was not available.
Rate of success	Varied from 60 percent to 95 percent. Average 78 percent students passed.
Rate of dropouts	Average 15 percent students dropped without completion.
Fees	All the institutions were charging different amount, it varied from Rs. 14,000 to Rs.30, 000.
Eligibility criteria	Minimum 50 percent in graduation with any discipline.
Admission criteria	Merit based in 80 percent institutions. Entrance test in one institution.
Clientele group	Graduates people.
Course components	Fundamentals of Computers, Information Technology, Operating System (DOS, Linux, Unix, Windows) RDBMS, PC Packages, GUI Programming in Visual Basic, E – Commerce, Concepts of OOPS & Programming in C++, System Analysis and Design.

From table 4.11, PGDCA (Post Graduate Diploma in Computer Application) was found to be a 1 and 1.5 year duration Post Graduate Diploma, software and part time in 100 percent and in one part time as well as full time course. It was self financed course in 100 percent but in one it was self financed as well as subsidised course with an average fees Rs. 20,000 offered by 12.50 percent institutions in Baroda district. The course was found with 2 : 1 ratio of theory and practical teaching hours respectively with 78 percent rate of students' success. The course was found with similar course components in most of the institutions. In all institutions admission process was de-centralised and found based on marit. In one institution entrance test was given for admission in the course. Table 4.12 gives detailed description and analysis about the course details of Java.

Table 4.12: Details about Java Course Offered by Computer Education Institutions.

Course Details	Analysis and Description
Name of the course	**Java**
Frequency and percentage of institutions	Offered in 17.50 percent institutions.
Course duration	It varied from 1.50 to 6 months. 3 months duration in 42.86 percent institutions, . 2 months duration in 28.75 percent institutions, and 1.5 months 6 months in remaining two institutions.
Course hours	Varied from 90 to 150 hours. In 57.14 percent institutions, it varied from 90 to 110 hours. In remaining 42.86 percent institutions it was found to be of 150 hours.
Ratio of theory & practical teaching hours	Ratio of practical and theory was found 2:1 in 40 percent institutions. In 60 percent theory and practical hours were found to be equal.
Course planning authority	Institution itself in all institutions.
Type of course : Degree / Diploma / Certificate	Certificate course in all institutions.
Type of course : Self financed / Subsidized	Self financed course in all institutions.
Type of course : Hardware / Software	Software course in all institutions.
Type of course : Part time / Full time	Part time course in all institutions.
Weightage for theory & practical in evaluation	In 73.43 percent institutions, 75 percent weightage was given to practicals and in rest two institutions, equal weightage was given to both theory and practical.
Number of students per batch	Varied from 4 to 16 students per batch. Average students per batch were found to be 9.
Rate of success	In 73.43 percent institutions, rate of success was 100 percent and in rest two institutions, it was found 80 percent and 90 percent respectively.

Course Details	Analysis and Description
Rate of dropouts	In 73.43 percent institutions, there were no dropouts and in rest two institutions it was found to be 10 percent and 20 percent respectively.
Fees	Varied from Rs. 1,200 to Rs. 2,700. In 57.14 percent institutions, it was found to be Rs. 2,000. In other three institutions it was found to be Rs. 1,200, Rs. 2,300 and Rs. 2,700 respectively Average fees was found to be Rs. 2,028.
Eligibility criteria	No fixed Eligibility criteria was found in all the institutions.
Admission criteria	No fixed Admission criteria was found in all the institutions.
Clientele group	College students, employed and unemployed people.
Course components	Classes, Interface, Package, Threading, Constructor, Packages : Java.lang, Java.io, Java.awt, Java.util, Java.net, Java.swings, JDBC, JFC, IDL and CORBA implementation through Java, Web Programming using Java Servlets, Java Beans, Java Multimedia.

From table 4.12 Java course was found to be a 1.5 to 6 months duration certificate, software and part time self financed course with an average fees Rs. 5471 offered by 17.5 percent institutions in Baroda district. The course was found more practical oriented with high rate of students success. The course was found with similar course components. Most of the institutions were found with no fixed eligibility and admission criteria.Table 4.13gives detailed Description and analysis about the course details of Oracle 9i.

Table 4.13: Details About Oracle 9i Course Offered by Computer Education Institutions.

Course Details	Analysis and Description
Name of the course	**Oracle 9i**
Frequency and percentage of institutions	Offered in 20 percent institutions.
Course duration	It varied from 2 to 12 months. 3 months duration in 37.50 percent institutions, 2 months duration in 25 percent institutions, 6 months duration in other 25 percent institutions, in remaining one it was of 12 months.
Course hours	Varied from 100 to 480 hours. In 75 percent institutions, it varied from 100 to 150 hours. In remaining two institutions it was 240 and 480 hours.
Ratio of theory & practical teaching hours	Ratio of practical and theory was found 1 : 1 in 50 percent institutions. In 25 percent institutions theory and practical hours were 1:4 and in remaining 25 percent institutions it was found to be1 : 3 respectively.
Course planning authority	In 50 percent institutions, it was done by head office of franchise centre, whereas, in remaining by respective institutions them selves..
Type of course : Degree / Diploma / Certificate	Certificate course in all institutions.
Type of course : Self financed / Subsidized	Self financed course in all institutions.
Type of course : Hardware / Software	Software course in all institutions.
Type of course : Part time / Full time	Part time course in all institutions.
Weightage for theory & practical in evaluation	In 37.50 percent institutions the ratio was 33 :67 and in other 37.50 percent institutions, equal weightage was given to both theory and practical respectively, whereas, it was found 25 : 75 and 10 : 90 in remaining two institutions.

Course Details	Analysis and Description
Number of students per batch	Varied from 4 to 15 students per batch. Average students per batch were found to be 8.
Rate of success	In 75 percent institutions rate of success was 100 percent and in rest two institutions, it was found 90 percent.
Rate of dropouts	In 75 percent institutions, there were no dropouts and in rest two institutions it was found to be 10 percent.
Fees	Varied from Rs. 1,500 to Rs. 22,000. Average fees was found Rs. 6,225. In 87.50 percent institutions it ranged between Rs. 1,500 to Rs. 7,500 and in one it was Rs. 22,000.
Eligibility criteria	No fixed Eligibility criteria was found in all the institutions.
Admission criteria	No fixed admission criteria was found in all the institutions.
Clientele group	College students, employed and unemployed people, corporate clientele.
Course components	Data Base Concepts, History of Oracle, SQL, user of DLL, DCL and DML Commands. PL / SQL : Triggers, Stored Procedures / Functions, Use of Packages. Table Handling : Nested Tables, Varrays, Records object, Concepts of Foreign Key and Primary Key, Working with Images and Sound, Working with BLOBS. Web Publishing using ORACLE, Backup and Recovery.

From table 4.13, Oracle 9i course was found to be a 2 to 12 months duration certificate, software and part time self financed course with an average fees of Rs. 6,225 offered by 20 percent institutions in Baroda district. The course was found more practical oriented with high rate of students success. The course was found with similar course components in most of institutions. Most of the institutions were found with no fixed eligibility and admission criteria. Table 4.14 gives detailed description and analysis about the course details of C & C++.

Table 4.14 Details about C & C++ Course Offered by Computer Education Institutions.

Course Details	Analysis and Description
Name of the course	**C & C++**
Percentage of institutions	Offered in 42.50 percent institutions.
Course duration	Varied from 1 to 6 months. 2 to 3 months duration in 88.24 percent institutions. In rest two it was of 1 and 6 months respectively.
Course hours	Varied from 50 to 144 hours. In 88.24 percent institutions, it varied from 100 to 120 hours. In remaining two institutions it was 50 and 144 hours. Average hours of the course were 108.
Ratio of theory & practical teaching hours	Ratio of practical and theory was found 1 : 1 in 94.12 percent institutions. In remaining one it was found with 4 : 6 ratio of theory and practicals respectively.
Course planning authority	In 8.82 percent institutions, by head office of franchise centre, whereas, in remaining by respective institutions themself.
Type of course : Degree / Diploma / Certificate	Certificate course in all institutions.
Type of course : Self financed / Subsidized	Self financed course in all institutions.
Type of course : Hardware / Software	Software course in all institutions.
Type of course : Part time / Full time	Part time course in all institutions.
Weightage for theory & practical in evaluation	In 58.82 percent institutions equal weightage and in remaining it was 60:40 for theory and practical respectively.
Number of students per batch	Varied from 3 to 16 students per batch. Average students per batch were found to be 9.

Course Details	Analysis and Description
Rate of success	In 88.24 percent institutions, rate of success was 100 percent and in rest two institutions, it was found 85 percent and 95 percent.
Rate of dropouts	In 88.24 percent institutions, there were no dropouts and in rest two institutions it was found to be 12 percent.
Fees	Varied from Rs. 1,000 to Rs. 5,000. Average fees was found Rs. 3062.
Eligibility criteria	No fixed Eligibility criteria was found in all the institutions.
Admission criteria	No fixed Admission criteria was found in all the institutions.
Clientele group	College students, employed and unemployed people, corporate clientele.
Course components	Introduction to Programming, Flow Chart, Algorithm, History of C & C++, Variable Declaration and Data types, Input / Output Statements, Looping, Header Files, Array, Functions, Structure, Nested Structure, Pre-Processor Directives, Command Line Arguments, Pointers, Concepts of OOPS, Object and Classes, Inheritance, Abstraction, Data Encapsulation, Polymorphism, Access Specifies: Private, Public, Protected, Friend., File Handling, Linked List.

From table 4.14, C and C++ course was found to be a 1 to 6 months duration certificate, software and part time self financed course with an average fees of Rs. 3062 offered by 42.50 percent institutions in Baroda district. The course was found more practical oriented with high rate of students success. The course was found with similar course components in all the institutions. Most of the institutions were found with no fixed eligibility and admission criteria. Table 4.15 gives detailed Description and analysis about the course details of AutoCAD.

Table 4.15: Details about AutoCAD Course Offered by Computer Education Institutions.

Course Details	Analysis and Description
Name of the course	AutoCAD
Frequency and percentage of institutions	Offered in 12.50 percent (5) institutions.
Course duration	Varied from 2 to 6 months. 2 months duration in 60 percent institutions, and 3.5 and 6 months in remaining two institutions.
Course hours	Varied from 100 to 144 hours. In 40 percent institutions it was 100 hours, in another 40 percent institutions 120 hours and in remaining one institute it was 144 hours.
Ratio of theory & practical teaching hours	It was found equal in 60 percent institutions. In remaining two the ratio was found to be 1:4 and 2:5 in theory and practical respectively.
Course planning authority	80 percent institutions do self planning and head office of franchise in 20 percent institutions.
Type of course : Degree / Diploma / Certificate	Certificate course in all institutions.
Type of course : Self financed / Subsidized	Self financed course in all institutions.
Type of course : Hardware / Software	It was software course in all institutions.
Type of course : Part time / Full time	It was a part time course in all institutions.
Weightage for theory & Practical in evaluation	In 60 percent institutions, equal weightage to theory and practical and in rest 40 percent it was 60 percent weightage was given to practical.
Number of students per batch	Varied from 5 to 10 students per batch. Average students per batch were found to be 9. In 80 percent institutions it was 10 and in rest one institution it was 5.
Rate of success	In 80 percent institutions 100 percent success and in remaining one it was 90 percent.

Course Details	Analysis and Description
Rate of dropouts	No dropouts at all.
Fees	Varied from Rs. 1,800 to Rs. 4,000. In 40 percent institutions, it was found to be Rs. 4,000. Average fees was found to be Rs. 3,660.
Eligibility criteria	No fixed Eligibility criteria was found in all the institutions.
Admission criteria	No fixed Admission criteria was found in all the institutions.
Clientele group	College students and unemployed people.
Course components	Working with Co-ordinate System, Basic geometry, Working with Grid, SNAP and OSNAP, 2D ISOMETRIC Drawings, 3D Models : 3D Coordinates, LINE, 3D Face, Pface, 3Dmesh, Revsurf, Rulesurf, Tab surf, Edge surf, Box, Cone, Sphere, Cylinder, Torus, Wedge, Joining, Trimming and Interaction, Projection, Working with Surfaces : Primitive, motion Bases, Skin Surface, Derived, Selecting, Editing. Creating Symbol Library – BLOCK, WBLOCK, ADC, Working with Attributes, Working with Data Base, Creating 3D Models with AUTOCAD, 3D Boolean Operations, CAM Design : Configuring the CAM Plate Calculation, Movement Sections, Velocity and Acceleration Curves, Cam Geometry from the graph, Working with Mechanical Desktop, Animating Presentation.

From table 4.15, AutoCAD was found to be a 2 to 6 months duration certificate, software and part time self financed course with average fees of Rs. 3,660 offered by 12.5 percent institutions in Baroda district. The course was found more practical oriented with high rate of students success. The course was found with similar course components in most of institutions Most of the institutions were found with no fixed eligibility and admission criteria. Table 4.16 gives detailed Description and analysis about the course details of CIM (Certificate in Multimedia).

Table 4.16: Details about CIM (Certificate in Multimedia) Course Offered by Computer Education Institutions.

Course Details	Analysis and Description
Name of the course	CIM (Certificate in Multimedia)
Frequency and percentage of institutions	Offered in 5 percent (2) institutions.
Course duration	Two months in both.
Course hours	48 hours and 72 hours.
Ratio of theory & practical teaching hours	2:3 theory and practical in both respectively.
Course planning authority	Head office of franchise in both institutions.
Type of course : Degree / Diploma / Certificate	Certificate course in both institutions.
Type of course : Self financed / Subsidized	Self financed course in both institutions.
Type of course : Hardware / Software	It was software course in both institutions.
Type of course : Part time / Full time / Both	It was a part time course in both institutions.
Weightage for theory & Practical in evaluation	40 : 60 in theory and practical in one and in the other equal weightage to theory and practical.
Number of students per batch	10 in one and 6 in the other.
Rate of success	100 percent in both.
Rate of dropouts	No dropouts at all.
Fees	Rs. 3,500 in each.
Eligibility criteria	No fixed Eligibility criteria was found in all the institutions.
Admission criteria	No fixed Admission criteria was found in all the institutions.
Clientele group	School, college students and in-service clientele.

Course Details	Analysis and Description
Course components	Foundation of Multimedia Technology, Designing Basic Paint Brush, Corel Draw, Adobe Page Maker, Adobe Illustrator, Adobe Photo Shop, Photo Paint, Macromedia Director, Flash, Dream Weaver, Fire Works, 3D Max, Discreet Character Studio, Scanning, Elastic Reality Printing Technology, Sound Editing, Adobe Premier, Sound Forge, MAYA basics.

From table 4.16, AutoCAD was found to be a 2 months duration certificate, software and part time self financed course with a fees of Rs. 3,500 offered by 5 percent institutions in Baroda district. The course was found more practical oriented with high rate of students success. The course was found with similar course components in both the institutions. No fixed eligibility and admission criteria was found in both institutions. Table 4.17 gives detailed description and analysis about the course details of "O" Level course.

Table 4.17: Details about "O" Level Course Offered by DOEACC Certified Computer Education Institutions.

Course Details	Analysis and Description
Name of the course	"O" Level Course
Frequency and percentage of institutions	Offered in 5 percent institutions.
Course duration	6 months in both.
Course hours	500 hours in both.
Ratio of theory & practical teaching hours	1 : 1 in both
Course planning authority	DOEACC society, New Delhi
Type of course : Degree / Diploma / Certificate	Certificate course in both institutions.
Type of course : Self financed / Subsidized	Self financed course in both institutions.

Course Details	Analysis and Description
Type of course : Hardware / Software	Software course in both institutions.
Type of course : Part time / Full time	Part time course in both institutions.
Weightage for theory & practical in evaluation	60 : 40 for theory and practical in both institutions.
Number of students per batch	15 and 40 in two institutions
Rate of success	90 to 100 percent in both institutions.
Rate of dropouts	10 percent almost in both institutions.
Fees (in Rupees)	Rs. 19,000 in both institutions.
Eligibility criteria	XII pass or ITI certificate of one year after X in both institutions.
Admission criteria	Merit
Clientele group	XII pass and college students and in-service candidates

From table 4.17, "O" Level course was found to be a 6 months duration course of 500 hours certificate, software and self financed course with fees of Rs. 19,000 offered by 5 percent institutions in Baroda district. 1 : 1 ratio of theory and practical teaching hours was found with 60 : 40 ratio of theory and practical in evaluation respectively. For this course DOEACC society was course planning authority for both institutions. The course was found equal emphasizing on theory and practical with high rate of students success. Both of the institutions were found with fixed eligibility and admission criteria. Table 4.18 gives detailed Description and analysis about the course details of "A" Level Course.

Table 4.18: Details about "A" Level Course Offered by DOEACC Certified Computer Education Institutions.

Course Details	Analysis and Description
Name of the course	"A" Level Course
Frequency and percentage of institutions	Offered in 5 percent (2) institutions.
Course duration	1 years in both institutions.
Course hours	900 hours in both institutions.
Ratio of theory & practical teaching hours	1 : 1 in both in both institutions.
Course planning authority	DOEACC Society, New Delhi for both.
Type of course : Degree / Diploma / Certificate	PGDCA equivalent
Type of course : Self financed / Subsidized	Self financed course in both institutions.
Type of course : Hardware / Software	Software course in both institutions.
Type of course : Part time / Full time	Part time course in both institutions.
Weightage for theory & practical in evaluation	60 : 40 for theory and practical in both.
Number of students per batch	15 and 40 in two institutions
Rate of success	90 to 100 percent in both institutions.
Rate of dropouts	10 percent almost in both institutions.
Fees (in Rupees)	35,500 in both institutions.
Eligibility criteria	"O" Level course / Diploma after XII / graduate from recognised institutions or equivalent.
Admission criteria	Merit
Clientele group	Eligible students, in-service and unemployed candidates

From table 4.18 "A" Level course was found to be a 1.5 year duration of 900 hours PGDCA equivalent, software and part time self financed course with total fees of Rs. 35,500 offered by 5 percent institutions in Baroda district. 1 : 1 ratio of theory and practical teaching hours with 60 : 40 ratio of theory and practical in evaluation respectively for this course. DOEACC society was course planning authority for both institutions. The course was found equally emphasizing on theory and practical with high rate of students success. Both of the institutions were found with same eligibility criteria and merit as admission criteria. Table 4.19 gives detailed description and analysis about the course details of "B" Level course.

Table 4.19: Details about "B" Level Course Offered by DOEACC Certified Computer Education Institutions.

Course Details	Analysis and Description
Name of the course	"B" Level Course
Frequency and percentage of institutions	Offered in 5 percent (2) institutions.
Course duration	3 years in both.
Course hours	2,700 hours approximately in both institutions.
Ratio of theory & practical teaching hours	1 : 1 in both institutions.
Course planning authority	DOEACC Society, Delhi
Type of course : Degree / Diploma / Certificate	Master degree course, MCA equivalent
Type of course : Self financed / Subsidized	Self financed course in both institutions.
Type of course : Hardware / Software	Software course in both institutions.
Type of course : Part time / Full time	Part time course in part institutions.
Weightage for theory & practical in evaluation	60 : 40 for theory and practical respectively in both.
Number of students per batch	15 and 25 in two institutions

Course Details	Analysis and Description
Rate of success	Average 30 percent in both institutions.
Rate of dropouts	15 to 20 percent in both institutions
Fees (in Rupees)	Rs. 90,000 in both institutions.
Eligibility criteria	PGDCA, /"A" level course/ Engineering diploma from govt. poly-technique or equivalent
Admission criteria	Merit
Clientele group	Eligible students, in-service and unemployed candidates

From table 4.19, "B" Level course was found to be a 3 years duration of 27,00 hours MCA equivalent, software and part time self financed course with total fees of Rs. 90,000 offered by 5 percent institutions in Baroda district. 1 : 1 ratio of theory and practical teaching hours was found with 60 : 40 ratio of theory and practical in evaluation respectively in both institutions. DOEACC society was course planning authority for both institutions. The course was found equally emphasizing on theory and practical with high rate of students success. Both of the institutions were found with fixed eligibility criteria and merit as admission criteria.

4.3.2 Individual Courses Offered by Specific Institutions

Some of the Computer Education courses were found specifically offered by specific Computer Education institutions. Courses like, How to make personal computer, Certificate in Computer Management, Computer Hardware, JCHNP (Jetking Certified Hardware & Networking Professionals), ADCHN (Advance Diploma in Computer Hardware & Networking), DMOA, ADMCP, ADMCA, DMCA, Diploma in Java, Diploma in Multimedia, Diploma in Web Designing, Multimedia Professional, Diploma in 3D Engineering and Animation, Inventor, A+, Mechanical Desktop Power Pack, Net Engineering, Vidya, Planet Workz, MCSE, B.Sc. (IT), M.Sc.(IT), MCSE, E-Business, ACCPW, COPA, etc. were found offered by specific institutions. Detailed Analysis and Description about these courses are given in following table 4.20 to table 4.30.

Table 4.20: Details About the Courses Offered by PC Point.

Course Details	Description		
Name of the course	How to make Personal Computer	Diploma in Computer Management	Computer Hardware
Course duration	2 Months	6 Months	13 Months
Course hours	120	360	790
Ratio of theory and practical teaching hours	Equal for both	Equal for both	Equal for both
Course planning authority	Self	Self	Self
Type of course : Degree / Diploma / Certificate	Certificate	Certificate	Certificate
Type of course : Self Financed/ Subsidized	Self financed	Self financed	Self financed
Type of course : Hardware / Software	Hardware	Hardware	Hardware
Type of course : Part time / Full time	Part time	Part time	Part time
Weightage of theory and practical in evaluation	20 : 80	20 : 80	20 : 80
Number of students per batch	05	05	05
Rate of success (%)	100	100	100
Rate of dropouts (%)	Nil	Nil	Nil
Fees (Rs.)	2,500-	6,500	13,500
Eligibility criteria	10th Pass	10th Pass	10th pass
Admission criteria	No criteria	No criteria	No criteria
Clientele group	School and college students, in-service and unemployed	School and college students, in-service and unemployed	School and college students, in-service and unemployed

Course Details	Description		
Components	Computer concepts with O.S. & application Software, Working with different parts of a personal computer, assembling of these parts and installing Windows OS	Computer concepts with O.S. & application Software, Working with different parts of a personal computer, assembling of these parts and installing Windows OS, MS Office, Networking.	Computer concepts with O.S. & application Software, Working with different parts of a personal computer, assembling of these parts and installing Windows OS, MS Office, Networking, Internet

From table 4.20 it was found that PC Point was running three self financed, part time, certificate, hardware courses like, How to make computer, Certificate in Computer Management and Computer Hardware of two, six and 13 months Course duration was 20, 360, and 790 course hours with fees of Rs. 2,500, Rs. 6,500 and Rs. 13,500 respectively to cater the clientele group like, school and college students, unemployed and in-service candidates. All the courses were found with equal ratio of theory and practical teaching hours, 20:80 was found to be the ratio of theory and practical in evaluation, X pass as eligibility criteria, with intake of 5 students per batch and with 100 percent rate of success in all the courses. The institution itself was found to be the course planning authority for all the courses. All the courses were found without any fixed admission criteria.

Table 4.21: Details About the Courses Offered by Jetking.

Course Details	Description	
Name of the course	JCHNP (Jetking Certified Hardware & Networking Professionals)	ADCHN (Advanced Diploma in Computer Hardware & Networking)
Course duration	13 Months	10 Months
Course hours	600	500

Course Details	Description	
Ratio of theory and practical teaching hours	40 : 60	40 : 60
Course planning authority	Jetking, Mumbai	Jetking, Mumbai
Type of course : Degree / Diploma / Certificate	Certificate	Diploma
Type of course : Self Financed/ Subsidized	Self financed	Self financed
Type of course : Hardware / Software	Hardware	Hardware
Type of course : Part time / Full time	Part time	Part time
Weightage of theory and practical in evaluation	50 : 50	50 : 50
Number of students per batch	30	30
Rate of success (%)	100	100
Rate of dropouts (%)	Nil	Nil
Fees (Rs.)	41,000	35,000
Eligibility criteria	12th Pass	10th Pass
Admission criteria	No criteria	No criteria

Course Details	Description	
Clientele group	School and college students, unemployed people	School and college students, unemployed people
Components	Analog, Digital, Microprocessor, MS Application, Personality development, Operating System, PC Hardware Support skills, Networking Essential, MS Windows 2000, Linux, Netware 5, CCNA.	Analog, Digital, Microprocessor, MS Application, Personality development, Operating System, PC Hardware Support skills, Networking Essential, MS Windows 2000.

From table 4.21 it was found that Jetking was running two self financed, part time, hardware courses like JCHNP and ADCHN, certificate and diploma course, 13 and 10 months Course duration , 600 and 500 course hours with fees of Rs. 41,000, and Rs. 35,000, XII and X pass Eligibility criteria respectively to cater the clientele group like, school and college students, and unemployed candidates. Both the courses were found with 40 : 60 ratio of theory and practical teaching hours, 50 : 50 ratio of theory and practical in evaluation, with intake of 30 students per batch and with 100 percent rate of success. Jetking, Mumbai was found to be the course planning authority for both the courses. Both the courses were found without any fixed admission criteria.

Table 4.22 Details About the Courses Offered by LCC, Sayajigunj.

Course Details	Description			
Name of the course	Complete IT Professional	Complete Java Professional	Complete E-commerce (Java track)	Complete E-commerce (M.S. track)
Course duration	1 year	1 year	1 year	1 year
Course hours	550	550	550	550
Ratio of theory and practical teaching hours	50 : 50	50 : 50	50 : 50	50 : 50
Course planning authority	LCC, Kolkatta	LCC, Kolkatta	LCC, Kolkatta	LCC, Kolkatta
Type of course : Degree / Diploma / Certificate	Certificate	Certificate	Certificate	Certificate

Course Details	Description			
Type of course : Self Financed/ Subsidized	Self financed	Self financed	Self financed	Self financed
Type of course : Hardware / Software	Software	Software	Software	Software
Type of course : Part time / Full time	Part time	Part time	Part time	Part time
Weightage of theory and practical in evaluation	50 : 50	50 : 50	50 : 50	50 : 50
Number of students per batch	5	5	5	5
Rate of success (%)	100	100	100	100
Rate of dropouts (%)	Nil	Nil	Nil	Nil
Fees (Rs.)	18,000	18,000	21,000	21,000
Eligibility criteria	12th Pass	12th Pass	12th Pass	12th Pass
Admission criteria	No criteria	No criteria	No criteria	No criteria
Clientele group	College students, unemployed people	College students, unemployed people	College students, unemployed people	College students, unemployed people
Components	Fundamentals, internet, MS Office, OOPS, Visual Basic, Frontpage, HTML, JAVA Script, DHTML, C, C++, UML with Rational Rose, Project.	HTML, Frontpage 2000, OOPS, JAVA, Java Script, DHTML, RMI, Servlets, Java Beans, EJB, Weblogic, JSP, UML with Rational Rose, Project	Internet Fundamentals, HTML, Frontpage, OOPs, JAVA, Java Script, DHTML. Oracle 8i, VB Script, Visual Interdev, ASP, IIS, E-commerce, Biz Talk, Site Server, Introduction to .NET, XML, UML	Internet Fundamentals, HTML, Frontpage, OOPs, Desktop and Distributed Application Development with Visual Basic, SQL Server 2000, VB Script, Visual Interdev, ASP, IIS, E-commerce, Biz Talk, Site Server, Introduction to .NET, XML, UML

From table 4.22 it was found that LCC, Sayajigunj was running four self financed, part time, software courses like, Complete IT Professional, Complete Java Professional, Complete E-Commerce (Micro Soft Track), and Complete E-Commerce (Java Track) certificate courses, each was found with 1 year Course duration , 550 course hours for each course with fees of Rs. 18, 000 for first two and 21,000 for next two respectively, XII pass eligibility criteria for each course. To cater the clientele group like, school and college students and unemployed candidates. All the courses were found with equal ratio of theory and practical teaching hours, 50 : 50 ratio of theory and practical in evaluation, with intake of 5 students per batch and with 100 percent rate of success in all courses. LCC, Kolkatta was found to be the course planning authority for all the courses. All the courses were found without any fixed admission criteria.

Table 4.23: Details About the Courses Offered by C-DAC.

Course Details	Description				
Name of the course	DMOA (Dip. in Office Automation)	Diploma in Java	DMCA (Dip. in Multi-Ling. Com. App)	ADMCP (Ad. Dip. in Multi-Ling.Com. prog.)	ADMCA (Ad. Dip. in Multi-Ling.Com. App.)
Course duration	6 months	6 months	6 months	8 months	8 months
Course hours	144	144.	144	288	288.
Ratio of theory and practical teaching hours	Equal for both	Equal for both	Equal for both	Equal for both	Equal for both
Course planning authority	C-DAC, Pune	C-DAC, Pune	C-DAC, Pune	C-DAC, Pune	C-DAC, Pune
Type of course : Degree / Diploma / Certificate	Diploma	Diploma	Diploma	Diploma	Diploma

Course Details	Description				
Type of course : Self Financed/ Subsidized	Self financed	Self financed	Self financed	Self financed	Self financed
Type of course : Hardware / Software	Software	Software	Software	Software	Software
Type of course : Part time / Full time	Part time	Part time	Part time	Part time	Part time
Weightage of theory and practical in evaluation	40 : 60	40 : 60	40 : 60	40 · 60	40 : 60
Number of students per batch	10	10	10	10	10
Rate of success (%)	100	100	100	100	100
Rate of dropouts (%)	Nil	Nil	Nil	Nil	Nil
Fees (Rs.)	4,500	4,500	4,500	10,000	10,000
Eligibility criteria	XII pass	XII pass	XII pass	XII pass	XII pass
Admission criteria	No criteria	No criteria	No criteria	No criteria	No criteria
Clientele group	College students and in-service people	College students and in-service people	College students and in-service people	College students and in-service people	College students and in-service people

Course Details	Description				
Compo nents	M.S.Office using ISM, iLEP, MS outlook and MS Visual Foxpro	Intro. OOPS & Prog. in Java Applets, servlets, JDK, AWT,com- ponents, threads, streams, NT.Work. with TCP	Visual Basic 6.0 Oracle 8i	DOS, Basic Programming, C Programming, C++ Programming, JAVA Programming	Computer Fundamental, Windows OS, Networking/Internet, MS Office 2000, iLEAP, Visual FoxPro, Visual Basic, Oracle 8i

From table 4.23 it was found that C-DAC, Subhanpura was running five self financed, part time, diploma, and software courses like, DMOA, Diploma in Java, DMCA, ADMCP and ADMCA of 6 months duration of first three and 8 months duration of next two courses with 144 hours of first three courses and 288 hours of next two course with fees of Rs. 4,500 for first three courses and Rs. 10,000 for next two courses respectively to cater the clientele group like, college students and in-service candidates. All the courses were found with equal ratio of theory and practical teaching, 40 : 60 ratio of theory and practical in evaluation respectively, XII pass was found to be eligibility criteria, with intake of 10 students per batch and with 100 percent rate of success in all the courses. C-DAC, Pune was found to be the course planning authority for all the courses. All the courses were found without any fixed admission criteria.

Table 4.24: Details About the Courses Offered by Image Institute of Digital Technology.

Course Details	Description			
Name of the course	Diploma in Multi media	Diploma in Web designing	Dip. in 3D Engineering & Animation	Career Diploma in Multi media
Course duration	2 Months	2 Months	2 Months	2 Months
Course hours	100	100	100	100
Ratio of theory and practical teaching hours	25 : 75	25 : 75	25 : 75	25 : 75
Course planning authority	Image, Mumbai	Image, Mumbai	Image, Mumbai	Image, Mumbai
Type of course : Degree / Diploma / Certificate	Diploma	Diploma	Diploma	Diploma
Type of course : Self Financed/ Subsidized	Self financed	Self financed	Self financed	Self financed
Type of course : Hardware / Software	Software	Software	Software	Software
Type of course : Part time / Full time	Part time	Part time	Part time	Part time
Weightage of theory and practical in evaluation	20 : 80	20 : 80	20 : 80	20 : 80
Number of students per batch	10	10	10	10
Rate of success (%)	100	100	100	100
Rate of dropouts (%)	Nil	Nil	Nil	Nil

Course Details	Description			
Fees (Rs.)	4,500	5,000	4,500	3,500
Eligibility criteria	10th Pass	10th Pass	10th pass	10th pass
Admission criteria	No criteria	No criteria	No criteria	No criteria
Clientele group	School and college students, in-service and unemployed	School and college students, in-service and unemployed	School and college students, in-service and unemployed	School and college students, in-service and unemployed
Components	CorelDraw, Photo shop, 3DS Max, Discreet Reactor, Premiere, Sound Forge, Elastic Reality, Director.	Photo shop, Image Ready, Flash and Dream weaver.	CorelDraw, Photo shop, Flash, 3DS Max, Discreet Reactor, Character Studio, Maya Basics, Premeire, Sound Forge, Elastic Reality, Combustion, Director, Advanced Lingos, in Flash and Director.	Photo shop, 3DS Max, discreete Character Studio, Maya Basics.

From table 4.24 it was found that Image Institute of Digital Technology, Fatehgunj was running four self financed, part time, diploma, and software courses like, Diploma in Multimedia, Diploma in Web designing, Diploma in 3D Engineering & Animation and Career Diploma in Multimedia of two months duration and 100 course hours with fees of Rs. 4,500, Rs. 5,000, Rs. 4,500 and Rs. 3,500 respectively to cater the clientele group like, school and college students, unemployed and in-service candidates. All the courses were found to be with 25 : 75 ratio of theory and practical teaching, 20:80 ratio of theory and practical in evaluation, X pass as eligibility criteria, with intake of 10 students per batch and with 100 percent rate of success. The course planning authority was Image Institute of Digital Technology, Bombay for all the courses. All the courses were found without any fixed admission criteria.

Table 4.25: Details About the Courses Offered by Roshani Computer Classes.

Course Details	Description	
Course Details	**Description**	
Name of the course	Inventor	Mechanical DeskTop Power Pack
Course duration	2 Months	2 Months
Course hours	100	100
Ratio of theory and practical teaching hours	50 : 50	50 : 50
Course planning authority	Autodesk, Bombay	Autodesk, Bombay
Type of course: Degree / Diploma / Certificate	Certificate	Certificate
Type of course: Self Financed/ Subsidized	Self financed	Self financed
Type of course: Hardware / Software	Software	Software
Type of course : Part time / Full time	Part time	Part time
Weightage of theory and practical in evaluation	50 : 50	50 : 50
Number of students per batch	8	8
Rate of success (%)	100	100
Rate of dropouts (%)	Nil	Nil
Fees (Rs.)	6,000	6,000
Eligibility criteria	10th Pass	10th Pass
Admission criteria	No criteria	No criteria
Clientele group	School and College students, in-service and unemployed	School and College students, in-service and unemployed

Course Details	Description	
Components	Part, Assembly, Presentation, Drawing & Sheet Metal Files, Part Modeling, Creating, Modifying and Dimensioning sketch, Extruded and Revolved features, Animation Presentations, Working Drawings	Fundamental of AutoCAD, Mechanical Power pack working with templates, Cam Design, Crating Numerical control, Path of Profile, Moment of Inertia, Constraining Sketches, Sketch, Work, Placed features, Table driven parts, Working with surfaces, Assembling parts, Internet enabled design.

From table 4.25 it was found that Roshani Computer Classes, Karelibaug was running two self financed, part time, certificate, software courses like, Inventor and Mechanical Desk Top Power Pack of two months Course duration and 100 course hours with fees of Rs. 6,000 for each to cater the clientele group like, school and college students, unemployed and in-service candidates in all the courses. All the courses were found with 50 : 50 ratio of theory and practical teaching hours, 50 : 50 ratio of theory and practical in evaluation, X pass as eligibility criteria, with intake of 8 students per batch and with 100 percent rate of success in all the courses. The course planning authority was Autodesk, Bombay for both the courses. Both the courses were found without any fixed admission criteria.

Table 4.26: Details About the Courses Offered by Karrox Technologies Ltd.

Course Details	Description	
Name of the course	A+	MCSE
Course duration	2 Months	3 Months
Course hours	100	160
Ratio of theory and practical teaching hours	50 : 50	33 : 67
Course planning authority	Karrox Technologies, Bombay.	Karrox Technologies, Bombay.

Course Details	Description	
Type of course : Degree / Diploma / Certificate	Certificate	Certificate
Type of course : Self Financed/ Subsidized	Self financed	Self financed
Type of course : Hardware / Software	Software	Software
Type of course : Part time / Full time	Part time	Part time
Weightage of theory and practical in evaluation	50 : 50	50 : 50
Number of students per batch	8	5
Rate of success (%)	100	100
Rate of dropouts (%)	Nil	Nil
Fees (Rs.)	6,500	6,000
Eligibility criteria	X Pass	XII Pass
Admission criteria	No criteria	No criteria
Clientele group	School and college students.	School and college students, unemployed people
Components	Installation, Configuration, upgrading, Domain 2.0 diagnosing, Safety and Preventive Maintenance, Motherboard/Processors/Memory, Printers, Portable Systems, Basic Networking, Customer Satisfaction. Windows Specialty Module: Operating System, File management, Memory Management, Diagnosing and trouble shooting, Networks.	Installing, Configuring and Administrating Microsoft Windows 2000. Implementing and administrating a network infrastructure, Directory service, Active Directory service, Network Service, Migration strategy from Windows NT to Windows 2000

From table 4.26 it was found that Karrox Technologies, Alkapuri was running two self financed, part time, certificate, software courses like, A+ and MCSE of two and three months course duration, 100 and 160 course hours with fees of Rs. 6,500 and 6,000 for respectively to cater the clientele group like, school and college students, and unemployed candidates. courses were found with 33 : 67 ratio of theory and practical teaching hours, 50 : 50 ratio of theory and practical in evaluation in both, X pass and XII pass as eligibility criteria, with intake of 8 and 5 students per batch and with 100 percent rate of success respectively. The course planning authority was Karrox Technologies Ltd, Bombay for both the courses. Both the courses were found without any fixed admission criteria.

Table 4.27: Details About the Courses Offered by Aptech Computer Education.

Course Details	Description		
Name of the course	Vidya	Net Engineering	ACCPWP
Course duration	1.5 months	6 months	36 months
Course hours	60	320	942
Ratio of theory and practical teaching hours	25 : 75	33 : 67	50 : 50
Course planning authority	Aptech, Mumbai	Aptech, Mumbai	Aptech, Mumbai
Type of course : Degree / Diploma / Certificate	Certificate	Certificate	Certificate
Type of course : Self Financed/ Subsidized	Self financed	Self financed	Self financed
Type of course : Hardware / Software	Software	Software	Software
Type of course : Part time / Full time	Part time	Part time	Part time
Weightage of theory and practical in evaluation	25 : 75	50 : 50	50 : 50
Number of students per batch	15	15	15

Course Details	Description		
Rate of success (%)	100	100	100
Rate of dropouts (%)	Nil	Nil	Nil
Fees (Rs.)	1,000	8,000	72,000
Eligibility criteria	X Pass	XII Pass	XII pass
Admission criteria	No criteria	No criteria	No criteria
Clientele group	School and college students, in-service and unemployed.	School and college students, and unemployed	College students, in-service and unemployed people
Components	Computer Fundamentals, Working on Operating System, Office Automation Application (Office 2000) Internet, Integrating Office Application and internet	XML Basics, ASP.NET, C#, COM+ inter-operability, XML in net remoting, Mobile tool kit, Web Services, SOAP and UDDI Security in .net.	MS-Office, Internet, Web Designing, Client Server Programming, Advanced Programming, Specialization in .Net/J2EE, Architect B2B

From table 4.27 it was found that Aptech Computer Education was running three self financed, part time, certificate courses like, Vidya, Net Engineering and ACCPWP (Aptech Certified Compute Professional World Program) of 1.5, six and 36 months course duration and 60, 320, and 942 course hours with fees of Rs. 1,000, Rs. 8,000 and Rs. 72,000 respectively to cater the clientele group like, school and college students, unemployed and in-service candidates. All the courses were found with 25 : 75, 33 ; 67 and 50 : 50 ratio of theory and practical teaching hours, 25 : 75 ratio of theory and practical in evaluation for first course and 50 : 50 ratio of evaluation for next two courses , X pass, XII, pass and XII pass as eligibility criteria, with intake of 15 students per batch and with 100 percent rate of success. Aptech Computer

Education, Mumbai was found to be the course planning authority for all the courses. All the courses were found without any fixed admission criteria

Table 4.28: Details About the Courses Offered by Suntech.

Course Details	Description		
Name of the course	B.Sc. (IT)	M.Sc.(IT)	M.Sc. (E-Business)
Course duration	3 years	2 years	3 years
Course hours	3,600	2,400	3,600
Ratio of theory and practical teaching hours	2 : 1	2 : 1	2 : 1
Course planning authority	Sikkim Manipal University, Karnatak	Sikkim Manipal University, Karnatak	Sikkim Manipal University, Karnatak
Type of course : Degree / Diploma / Certificate	Bachelor degree course	Master degree course	Master degree course
Type of course : Self Financed/ Subsidized	Self financed	Self financed	Self financed
Type of course : Hardware / Software	Software	Software	Software
Type of course : Part time / Full time	Full time	Full time	Full time
Weightage of theory and practical in evaluation	60 : 40	60 : 40	60 : 40
Number of students per batch	20	20	20
Rate of success (%)	70	70	70
Rate of dropouts (%)	15	15	15
Fees (Rs.)	72,000	24,000	72,000
Eligibility criteria	XII pass.	Graduate with min. 50 percent	Graduate with min. 50 percent
Admission criteria	Merit	merit	Merit

Course Details	Description		
Clientele group	XII pass and Graduate student	Graduate and Unemployed	Graduate and Unemployed
Components	Computer Architecture, Programming Methodology, Network and Data Communication, DBMS, Business communication Skill, Mathematical Foundation of Computer Science, Internet, C++, System Analysis, Visual Basic, Java, RDBMS, C# MIS	Computer Organization and Architecture Data Communication and Computer Networking, C and Data Structure, OOP in C++, DBMS, Oracle, Visual Basic Discrete Mathematics, Practical and Assignments, Viva-Voce.	Data not available

From table 4.28 it was found that Aptech Computer Education was running three self financed, full time, degree courses like, B.Sc. (IT), M.Sc.(IT), M.Sc. (E-Business) of 3, 2 and 3 years course duration of 3,600, 2,400, and 3,600 course hours with fees of Rs. 72,000, Rs. 48,000 and Rs.72,000 respectively. to cater eligible group. All the courses were found with 2 : 1 ratio of theory and practical teaching hours, 60 : 40 ratio of theory and practical in evaluation respectively. XII pass for B.Sc.(IT) and graduate for rest two courses as eligibility criteria, with intake of 20 students per batch and with 70 percent rate of success in all the courses . Sikkim Manipal university, Karnataka was found to be the course planning authority for all the courses. In all the courses merit was admission criteria.

Table 4.29: Details About the Courses Offered by ITI.

Course Details	Description
Name of the course	COPA (Computer Operator and Programming Assistant)
Course duration	1 year
Course hours	1924
Ratio of theory and practical teaching hours	1 : 1
Course planning authority	DGET (Director General of Employment and Training)
Type of course : Degree / Diploma / Certificate	Certificate
Type of course : Self Financed/ Subsidized	Subsidised
Type of course : Hardware / Software	Software
Type of course : Part time / Full time	Full time
Weightage of theory and practical in evaluation	60 : 40
Number of students per batch	20
Rate of success (%)	95
Rate of dropouts (%)	15
Fees (Rs.)	1,200
Eligibility criteria	XII Pass
Admission criteria	Merit
Clientele group	XII pass and graduates
Components	Dos, Windows, Unix, Networking, Data Processing, First Aid Maintenance, MS-Office: Word, Excel, PowerPoint, Internet.

From table 4.29 it was found that ITI, Gorva was running one subsidised, full time, certificate course namely COPA (Computer Opertor and Programming Assistant) of 1 year Course duration with 942 course hours, fees of Rs. 1,200 to cater the clientele group like, XII pass and graduates. Ratio of theory and practical teaching hours was 2 : 1, and 60 : 40 weightage of theory and practical in evaluation

respectively. XII pass as eligibility criteria, with intake of 20 students per batch and with 95 percent rate of success. DGET (Director General of Employment and Training) was the course planning authority. Merit was the amission criteria for the course.

Table 4.30: Details About the Courses Offered by NIIT.

Course Details	Description
Name of the course	Planet Workz
Course duration	3 months
Course hours	120
Ratio of theory and practical teaching hours	1 : 3
Course planning authority	NIIT, New Delhi.
Type of course : Degree / Diploma / Certificate	Certificate
Type of course : Self Financed/ Subsidized	Self financed
Type of course : Hardware / Software	Software
Type of course : Part time / Full time	Part time
Weightage of theory and practical in evaluation	50 : 50
Number of students per batch	12
Rate of success (%)	100
Rate of dropouts (%)	Nil
Fees (Rs.)	5,500
Eligibility criteria	XII Pass
Admission criteria	No criteria
Clientele group	XII pass and graduates and in-service candidates.
Components	Understanding International English, Speak accent neutral English, Display some syntactic variation in written English, Write Cogent and grammatically correct English. concepts – understand scenarios, grammar and correct usage, vocabulary, culture, language building and proficiency.

From table 4.30, it was found that NIIT, fatehgunj was running one self financed, part time, certificate course namely Planet Workz of 3 months course duration, 120 course hours with fees of Rs. 5,500 to cater the clientele group like, XII pass and graduates. Ratio of theory and practical teaching hours was 1 : 3 and 50 -50 weightage of theory and practical in evaluation respectively. XII pass was eligibility criteria, with intake of 12 students per batch and with 100 percent rate of success. NIIT, New Delhi was the course planning authority and no admission criteria was found for this course

4.4 ANALYSIS OF DATA FOR OBJECTIVE 4

Objective 4: "To Study the Infrastructure, Hardware and Other Facilities Available for Computer Education Coursed Offered by Different Institutions in Baroda District of Gujarat". The data were collected with regards to infrastructure, hardware and other facilities with the help of questionnaire which are analysed and discussed with the help of Table 4.31 to 4.53.

Table 4.31: Frequency wise and Percentage wise Distribution of Computer Education Institutions with Number of Computers.

Number of Computers	Frequency of Institutions	Percentage
01-10	19	47.50
11-20	11	27.50
21-30	3	07.50
31-40	2	05.00
41-50	1	02.50
51-61	2	05.00
61-70	1	02.50
71-80	0	00.00
81-90	0	00.00
91-100	1	02.50
Total	40	100.00

Table 4.31, depicted that 47.50 percent and 27.50 percent Computer Education institutions had computer between 1-10 and 11-20 respectively. 7.50 percent, 5 percent, 2.50 percent institutions had computer between 21-30, 31-40, and 41-50 respectively. The same table showed that the rest 5 percent, 2.50 percent and 2.50 percent institutions had computers between 51-60, 61-70 and 91-100 respectively.

From the same table it was found that 47.50 percent institutions had less than or equal to ten computers and 27.50 percent institutions had 11 to 20 computers in each institution. The rest 25 percent institutions had 21 to 100 computers in the institutions. It leads to the conclusion that majority i.e. 75 percent of the institutions are small sized institutions having up to 20 computers in each institution, whereas, the rest 25 percent institutions are relatively large institutions having 21 to 100 computers in each institution.

Table 4.32: Configuration wise, Frequency wise and Percentage wise Distribution of Computer in Computer Education Institutions.

Configuration	No. of Computers (Frequency)	Percentage
P1	90	12.26
P2	159	21.66
P3	280	38.15
P4	58	07.90
Celeron	131	17.85
486	16	02.18
Total	734	100.00

Table 4.32, exhibited that out of all the computers in Computer Education institutions, P3 were the maximum computers i.e. 38.15 percent of total computers. P2 remained on second rank with 21.66 percent of total computers. Then third rank goes to Celeron with 17.85 percent of total computers. The fourth rank goes to P1, they were 12.26 percent of total computers and next fifth and sixth rank was of P4 and 486, which were 7.90 percent and 2.18percent of total computers respectively.

It leads to the conclusion that maximum i.e. 97.82 percent of computers available were Pentium generation and Celeron. Only a few i.e. 2.18 percent computers were lower than Pentium and Celeron in configuration. It means that all the institutions were having enough latest machines. Average number of computers were 18.35 i.e. approximately 18 in each institution.

Table 4.33: Frequency wise and Percentage wise Distribution of Computers Used for Teaching and Non Teaching Purpose.

Purpose of Use of Computer	Frequency of Number of Computers	Percentage
Teaching	694	94.55
Non teaching	040	05.45
Total	734	100.00

Table 4.33, revealed that 94.55 percent computers were being used for the purpose of teaching and the rest 5.45 percent computers were being used for non teaching tasks. But it was worth noting that some of the computers which were being used for teaching purpose were even used for other than teaching purpose eg., for developing study material, playing games etc.

Table 4.34: Frequency wise and Percentage wise Distribution of Printers in Computer Education Institutions.

Number of Printers	Frequency of number of Institutions	Percentage
01	16	40.00
02	11	27.50
03	05	12.50
04	02	05.00
05	01	02.50
06	01	02.50
Nil	04	10.00
Total	40	100.00

Table 4.34, showed that 40 percent, 27.50 percent and 12.50 percent institutions were having 1, 2, 3 printers respectively in each institution. The rest 5 percent, 2.50 percent, 2.50 percent and 10 percent institutions were having 4, and 6 printers in each institution, whereas, 10 percent institutions were having no printer in them.

It was found from the same table that highest i.e. 40 percent institutions were having one printer in each, whereas, second highest i.e. 27.50 percent institutions were having two printers in each institution. From the rest 32.50 percent institutions, in 22.50 percent institution there were 3 to 6 printers and in the rest 10 percent institutions no printer was found at all.

It leads to the conclusion that 90 percent institutions were having printers from which majority of 67.50 percent institutions were having one to two printer and others were having two to six printers, whereas, the rest 10 percent institutions were not having printer at all.

Table 4.35: Frequency wise and Percentage wise Distribution of Different Type of Printers.

Type of Printers	Frequency of Number of Printers	Percentage
Dot matrix	38	45.78
Inkjet	22	26.50
Laser	16	19.28
Others	07	08.44
Total	83	100.00

Table 4.35, showed that 45.78 percent, 26.50 percent and 19.28 percent printers were Dot metrix, Inkjet and Laser respectively, whereas, 8.44 percent of total printers were other then these printer.

It was found from the same table that highest i.e. 45.78 percent printers were Dot matrix, and next to Dot matrix were Inkjet i.e. 26.50 percent of total printers available. Third rank goes to Laser printers with 19.28 percent of total printers.

It can be concluded from the table that highest i.e. 45.78 percent printers were Dot matrix, whereas, the percentage of Inkjet and Laser printers together were equal

to Dot matrix. The rest 8.44 percent of the total printers were other then Dot matrix, Inkjet and Laser printers. Each institution was having average 2.08 Printers.

Table 4.36: Frequency and Percentage wise Distribution of Printers Used for Teaching and Non-teaching Purpose.

Purpose of Using Printers	Frequency of number of Printers)	Percentage
Teaching only	43	51 81
Non teaching only	03	03.61
Teaching & Non teaching both	37	44.58
Total	83	100.00

Table 4.36, unveiled that 51.81 percent, and 3.61 percent printers were used for teaching and non-teaching purpose respectively, whereas, 44.58 percent printers were being used for both teaching and non teaching purpose.

It leads to the conclusion that majority of the printers were used either for teaching or for teaching as well as non-teaching purpose. Only a few i.e 3.61 percent printers were used restrictively for non-teaching purpose.

Table 4.37: Frequency and Percentage wise Distribution of Computer Education Institutions With and Without Internet Connection

Status of Internet Connection	Frequency	Percentage
With internet connection	30	75
Without internet connection	10	25
Total	40	100

Table 4.37, exhibited that 75 percent institutions were having internet connection and remaining 25 percent institutions were not having internet connection i.e., one fourth institutions were found without internet connection.

Table 4.38: Frequency wise and Percentage wise Distribution of Computer Education Institutions With and Without Scanner.

Status of Scanner	Frequency	Percentage
With scanner	13	32.50
Without scanner	27	67.50
Total	40	100.00

Table 4.38, exhibited that 32.50 percent institutions were having scanner whereas majority of i.e. 67.50 percent institutions were not having scanner i.e., one third institutions were found without scanner.

Table 4.39: Frequency wise and Percentage wise Distribution of Computer Education Institutions With and Without Web Camera.

Status of Web Camera	Frequency	Percentage
With web camera	11	27.50
Without web camera	29	72.50
Total	40	100.00

Table 4.39 exhibited that 27.50 percent institutions were having web camera, whereas, the majority of i.e. 72.50 percent institutions were not having web camera. It leads to the conclusion that almost three fourth i.e. 72.50 percent institutions were found without web camera.

Table 4.40: Frequency wise and Percentage wise Distribution of Computer Education Institutions With Number of OHP.

Number of OHP	Frequency of Number of Institutions	Percentage
01	28	70.00
02	01	02.50
03	00	00.00
04	01	02.50
Nil	10	25.00
Total	40	100.00

Table 4.40, exhibited that in 70 percent, 2.50 percent and 2.50 percent institutions there were one, two, and four OHPs respectively, whereas, in the rest 25 percent institutions no OHP was found.

From the same table it was found that majority of i.e. 70 percent institutions had one OHP in each, whereas, from the rest 30 percent institutions, 25 percent had no OHP and 5 percent had two to four OHP in each institution.

Table 4.41: Frequency wise and Percentage wise Distribution of Computer Education Institutions With Number of LCD.

Number of LCD	Frequency of Number of Institutions	Percentage
1	07	17.50
2	01	02.50
3	01	02.50
Nil	31	77.50
Total	40	100.00

Table 4.41, showed that 17.50 percent, 2.50 percent, 2.50 percent and 77.50 percent institutions had one, two, and three LCD respectively, whereas, the rest 77.50 percent institutions had no LCD.

It can be drawn from the same table that majority of the institutions were not having the facility of LCD, whereas, 17.50 percent institutions were having one LCD in each institution and in the rest i.e. 5 percent institutions there were two and three OHP in each.

Table 4.42: Frequency wise and Percentage wise Distribution of Computer Education Institutions with Different Number of Theory Teaching Classrooms.

Number of Theory Teaching Classrooms	Frequency of Institutions	Percentage
01	16	40.00
02	12	30.00
03	07	17.50
04	04	10.00
05	00	00.00
06	01	02.50
Total	40	100.00

Table 4.42, exhibited that 40 percent and 30 percent institutions had one and two classrooms for theory teaching respectively, whereas, the rest 17.50 percent, 10 percent and 2.5 percent institutions had three, four and six theory teaching classrooms respectively.

The same table leads to the conclusion that majority of i.e. 70 percent institutions had one to two theory teaching classrooms in each, whereas, the rest 30 percent institutions had three to six theory teaching classroom in each.

Table 4.43: Frequency wise and Percentage wise Distribution of the Number of Theory Teaching Classrooms with Different Size.

Size in Sq. ft.	Frequency of Classrooms	Percentage
00-100	07	08.43
101-200	37	44.58
201-300	10	12.05
301-400	05	06.02
401-500	12	14.46
501-600	06	07.24
601-700	03	03.61
701-800	03	03.61
Total	83	100.00

Table 4.43, depicted that 8.43 percent, 44.58 percent, 12.05 percent, 6.02 percent, and 14.46 percent theory teaching classrooms were with 00-100, 101-200, 201-300, 301-400 and 401-500 Sq.ft size respectively, whereas, the rest 7.24 percent, 3.61 percent, and 3.61 percent theory teaching classrooms were with 501-600, 601-700 and 701-800 Sq. ft. size respectively.

If was found from the same table that size of the majority of i.e. 53 01 percent theory teaching classrooms were up to 200 Sq. ft., whereas, 46.99 percent classrooms were with the size between 201 to 800 Sq. ft. Average number of

classrooms were 2.08 in each institution and average size of each theory teaching classroom was 312.41 Sq. ft.

Table 4.44: Frequency wise and Percentage wise Distribution of Computer Education Institutions with Respect to Area.

Area in Sq. ft	Frequency of Institutions	Percentage
01-1000	21	52.50
1001-2000	06	15.00
2001-3000	03	07.50
3001-4000	05	12.50
4001-5000	02	05.00
5001-6000	02	05.00
6001-7000	00	00.00
7001-8000	00	00.00
8001-9000	01	02.50
Total	40	100.00

The Table 4.44, depicted that 52.50 percent, 15.00 percent, 7.50 percent and 12.50 percent institutions acquired up to 1000, 1001 to 2000, 2001 to 3000 and 3001 to 4000 Sq. ft. area of land respectively, whereas, 5 percent, 5 percent and 2.50 percent institutions acquired 4001 to 5000, 5001 to 6000 and 8001 to 9000 Sq. ft. area of land respectively. None of the institution was falling in the range of 6001 to 8000 Sq. ft.

It leads to the conclusion that the size of more than half of i.e. 52.50 percent institutions was up to 1000 Sq. ft., whereas, the size of the rest 47.50 percent institutions was falling between 2001 to 9000 Sq. ft.. Average land acquired by each institution was 1850 Sq. ft.

Table 4.45: Frequency wise and Percentage wise Distribution of Computer Education Institution with and without Library Facility.

Category	Frequency of Institutions	Percentage
Institutions with library	18	45
Institutions without library	22	55
Total	40	100

Table 4.45, depicted that 45 percent Computer Education institutions had separate library facility, whereas, 55 percent Computer Education institutions didn't have separate library.

Table 4.46: Frequency wise and Percentage wise Distribution of Computer Education Institutions With Number of Books.

Number of Books	Frequency of Institutions	Percentage
01-50	13	32.50
51-250	19	47.50
451-650	02	05.00
651-850	01	02.50
1251-1450	01	02 50
1451-1650	03	07.50
4000	01	02.50
Total	40	100.00

Table 4.46, exhibited that 32.50 percent, 47.50 percent, 5 percent and 2.50 percent institutions had 1-50, 51-250, 451-650, and 651-850 books respectively, whereas, the rest 2.50 percent, 7 50 percent and 2.50 percent institutions had 1251-1450, 1451-1650 and more than1650 books respectively.

From this data it can be concluded that majority of i.e. 80 percent institutions had up to 250 books in the library, whereas, the rest 20 percent institutions had more than 450 books in the library. It was noted that the institutions which were not having separate library facility had some books for reading purpose of students.

Table 4.47: Frequency wise and Percentage wise Distribution of Computer Education Institution With Degree of Hardware Maintenance.

Degree of Maintenance	Frequency of Institutions	Percentage
Adequate	10	25.00
So so	30	75.00
Total	40	100.00

Table 4.47 exhibited that in majority of i.e. 75 percent institutions maintenance of hardware facilities was so so, whereas, in the rest 25 percent

institutions it was adequate. Degree of maintenance of hardware facilities was found inadequate nowhere.

Table 4.48: Frequency wise and Percentage wise Distribution of Computer Education institutions With Degree of Use of Hardware Facilities by the Students.

Use of Hardware	Frequency of Institutions	Percentage
Sufficient	20	50.00
So So	20	50.00
Total	40	100.00

Table 4.48, unveiled that the use of hardware facilities by the students was sufficient in 50 percent institutions, whereas, in the rest 50 percent institutions it was so-so. It was found insufficient no where.

Table 4.49: Frequency wise and Percentage wise Distribution of Computer Education Institutions With Degree of Use of Hardware Facilities by the Teachers.

Use of Hardware	Frequency of Institutions	Percentage
Sufficient	38	95.00
So so	02	05.00
Total	40	100.00

Table 4.49, depicted that in majority of i.e. 95 percent institutions teachers were using hardware facilities satisfactorily, whereas, in the rest 5 percent institutions use of hardware facilities by teachers was so so. It was insufficient no where.

Table 4.50: Frequency wise and Percentage wise Distribution of Computer Education Institutions With Degree of Use of Stationary by the Students.

Use of Stationary	Frequency of Institutions	Percentage
Sufficient	30	75.00
So so	10	25.00
Total	40	100.00

Table 4 50, exhibited that the use of stationary by the students was sufficient in majority of i.e. 75 percent institutions, whereas, it was so-so in the rest 25 percent institutions. It was insufficient in none of the institution.

Table 4.51: Frequency wise and Percentage wise Distribution of Computer Education Institutions With Degree of Use of Ribbin / Cartridge by the Students.

Use of Ribbin / Cartridge	Frequency of Institutions	Percentage
Sufficient	38	95.00
So-So	02	05.00
Total	40	100.00

Table 4.51, depicted that the use of ribbin and cartridge by the students was sufficient in majority of i.e. 95 percent institutions, whereas, it was so so in the rest 5 percent institutions. It was found insufficient no where.

Table 4.52: Frequency wise and Percentage wise Distribution of Computer Education Institutions With Degree of Use of Floppy by Students.

Degree of Use	Frequency of Institutions	Percentage
Sufficient	34	85.00
So-so	06	15.00
Total	40	100.00

Table 4.52, exhibited that the use of floppy by the students was sufficient in majority i.e. 85 percent institutions, whereas, in the rest 15 percent institutions use of floppy by the students was so-so. The use of floppy was insufficient nowhere and there was no problem related with supply of floppy too.

Table 4.53: Frequency wise and Percentage wise Distribution of Computer Education Institutions With degree of Use of CD's by the Students.

Degree of Use	Frequency of Institutions	Percentage
Sufficient	28	70.00
So-so	12	30.00
Total	40	100.00

Table 4.53 depicted that the use of CD's by the students was sufficient in 70 percent institutions, whereas, it was so-so in the rest 30 percent institutions. The use of CD was no where insufficient and there was no problem related with supply of CD too.

4.5   ANALYSIS OF DATA FOR OBJECTIVE 5

Objective 5 : "To Study the Status of Staff for Teaching Computer Education at Different Institutions in Baroda District of Gujarat" data were collected with the help of questionnaire which is analyzed and discussed in with the help of Table 4.54 to Table 4.59.

4.5.1. Qualification, experience, Salary, Subjects of teaching of teaching staff

Table 4.54: Frequency wise and Percentage wise Distribution of Computer Education Teachers With Different Salary Structure.

Structure of Salary	Salary Range in Rupees	Average Salary in Rupees	Frequency of Teachers	Percentage
Highest Paid	Above Rs. 8000	11,500	12	09.60
Moderately paid	Rs. 4001- 8000	5,520	50	40.00
Less paid	Up to Rs. 4000	2,886	63	50.40
Total			125	100.00

Note: Only 39 institutions provided information about Computer Education teachers.

Table 4.54 depicted that 9.60 percent, 40 percent and 50.40 percent Computer Education teachers were drawing Rs 11,500, 5,520, and 2886 average salary per month respectively, they were falling in the category of highly paid salary with above 8000, moderately paid salary with 4001-8000, and less paid salary up to 4000 respectively.

It was found that average salary of 9.60 teachers was Rs. 11,500, whereas, the majority of the teachers i.e. 90.40 percentage teachers (Clubbing moderately and less paid group) were drawing only Rs. 4,051 average salary. . It is difficult to obtain quality teachers and quality work at this salary level in the field of Computer Education. It was also found from the same table that per institution 3.21 average computer teachers were working.

Table 4.55: Frequency wise and Percentage wise Distribution of Computer Teachers With Their Basic Qualification.

Basic Qualification of Computer Teachers	Frequency of Teachers	Percentage
M.Sc	03	02.40
M.E (Micro Bio)	01	00.80
M.Com.	03	02.40
B.Sc.	31	24.80
B.E. (Comp. Sc.)	14	11.20
B.E. (Other sub.)	05	04.00
B.C.A	06	04.80
B.Com.	45	36.00
B.A.	03	02.40
Diploma (Other than comp.)	06	04.80
ITI (Other than Comp.)	01	00.80
XII	07	05.60
Total	125	100.00

Note: Basic qualification: Eligibility qualification taken prior to the last degree of Computer field qualification.

The Table 4.55, exhibited that 36.00 percent, 24.80 percent and 11.20 percent computer teachers were with B.Com, B.Sc., and B.E. (Computer Science) as basic qualification respectively, whereas, the basic qualification of the rest of the teachers was M.Com., M.Sc., B.A., B.C.A., B.E. (other than comp. Sci), M.E. (Micro bio) Diploma, ITI, XII, etc. with 2.40 percent, 2.40 percent, 2.40 percent, 4.80 percent, 4 percent, 00.80 percent, 4.80 percent, 00.80 percent and 5.60 percent percentage of computer teachers with these basic qualification were ranging from 00.80 percent to 05.60 percent respectively.

It was found from the same table that majority i.e. 83.20 percent computer teachers were having graduation as their basic qualification. Only 5.60 percent computer teachers were having post graduation as their basic qualification and the rest 11.20 percent teachers were having lower than graduation as their basic qualification. In certain cases, basic qualification was even in computer field. Eg., MCA after BCA, in this case BCA is basic qualification.

Table 4.56: Frequency wise and Percentage wise Distribution of Computer Teachers with Basic Qualification.

Category (Basic Qualification)	Frequency of Computer Teachers	Percentage
Basic qualification in computer field	20	16
Basic qualification other than computer field	105	84
TOTAL	125	100

The Table 4.56, revealed that majority of i.e. 84 percent computer teachers' basic qualification was in other than computer subject, whereas, 16 percent Computer teachers had their basic qualification in computer field.

Table 4.57: Frequency wise and Percentage Wise List of Number of Computer Teachers with Descriptive Qualification in Computer Field.

Computer Field Qualification	Frequency (No. of Teachers)	Percentage
M.C.A.	27	21.60
B.C.A.	07	05.60
B.E. (Comp. Sci)	14	11.20
PGD in Computer Application	19	15.20
Higher Diploma (Comp.)	04	03.20
Advanced Diploma (Comp)	04	03.20
Diploma (Comp.)	24	19.20
Certificate (Comp.)	17	13.60
A Level (PGDCA equi.)	01	00.80
B Level (MCA equi.)	01	00.80
O Level (Comp.fundamental)	03	02.40
Basic (M.S.Office, DOS,Win etc.)	04	03.20
Total	125	100.00

The Table 4.57, exhibited that 21.60 percent, 19.20 percent, 15.20 percent, 13.60 percent and 11.20 percent computer teachers were with MCA, Diploma in Computer Application, PGDCA, Certificate courses in computer, and B.E. (Computer Science) computer field qualification respectively, whereas, the computer field qualification of the rest of the computer teachers was Advanced diploma in computer, Higher diploma in computer, Basic (M.S. Office, DOS, Win), BCA, "A" level, "B" level, and "O" level courses with 3.20 percent, 3.20 percent, 3.20 percent, 5.60 percent, 00.80 percent, 0.80 percent, 2.40 percent respectively.

It was found from the same table that 22.40 percent teachers were with MCA or equivalent qualification and almost equal percentage of teachers i.e, 16.80 percent and 16.00 percent teachers were with BCA and PGDCA or equivalent qualification respectively.

It leads to the conclusion that 55.20 percent computer teachers were with PGDCA or higher qualification and 44.80 percent computer teachers were with qualification lower than PG Diploma in Computer field.

Table 4.58: Frequency wise and Percentage wise Distribution of Computer Teachers with the Period of Experience.

Years of Experience	Frequency of Teachers	Percentage
Less than 1	08	06.40
01	27	21.60
02	30	24.00
03	18	14.40
04	17	13.60
05	16	12.80
06	01	00.80
07	01	00.80
10	05	04.00
18	01	00.80
20	01	00.80
TOTAL	125	100.00

Note: The years which are not mentioned in the column of year of experience, no teacher was found with the experience of those years, so they were eliminated.

The Table 4.58, exhibited that 6.40 percent, 21.60 percent, 24.00 percent, 14.40 percent, 13.60 percent and 12.80 percent computer teachers were with less than one year, one year, two years, three years, four years and five years experience respectively, whereas, the rest 0.80 percent, 0.80 percent, 4.00 percent, 0.80 percent and 0.80 percent computer teachers were found with 6, 7, 10, 18 and 20 years experience respectively.

It leads to the conclusion that majority of i.e.86.40 percent teachers were found with one to five years experience in teaching, whereas, 7.20 teachers were

having more than 5 years experience and 6.40 percent teachers were fresh or joined that year only.

Table 4.59: Frequency wise and Percentage wise Distribution of Computer Education Teachers Teaching Different Number of Subjects.

Category	Frequency of Teachers	Percentage
Teachers teaching all subjects	105	84
Teachers teaching only one subject	20	16
Total	125	100

Table 4.59 revealed that majority of i.e. 84 percent Computer Education teachers were found teaching all the subjects offered in the institution, whereas, the rest 16 percent teachers were found teaching only one subject. Only one subject taught by the teachers were Java, Visual Basic, C++, SQL, Tally, Trio, Basic, AutoCAD, and M.S. Office.

4.6 ANALYSIS OF DATA FOR OBJECTIVE 6

Objective 6: "To Study the Computer Education Teaching Learning Processes at Different Institutions in Baroda District of Gujarat".. To achieve the objective 6 of the present study data were collected with the help of observation where the researcher had observed classroom teaching of different courses at different Computer Education institution. Total 80 lessons of which two in each Computer Education institutions were observed. Collected data were analysed and discussed with the help of frequency and percentage in Table 4.60 to Table 4.82.

Table 4.60: Frequency wise and Percentage wise Distribution of the Computer Education Institutions with Reference to the Use of Lesson Plan During Teaching.

Use of Lesson Plan	Frequency	Percentage
Lesson plan used	16	20.00
Lesson plan not used	64	80.00
Total	80	100.00

Table 4.60, depicted that lesson plan was used in 20 percent lessons, whereas, it was not used in 80 percent institutions

It leads to conclude that in majority of i.e. 80 percent classes teachers were teaching without lesson plan, so enough preparation before teaching was doubtful.

Table 4.61: Frequency wise and Percentage wise Distribution of the Computer Education institutions with Reference to the Use of Books by Teachers During Classroom Teaching.

Use of Books	Frequency	Percentage
Book used by the teacher	22	27.50
Book not used by the teacher	58	72.50
Total	80	100.00

Table 4 61, revealed that in 72 50 percent lessons books were not used by computer teachers, whereas, in the rest 27.50 percent institutions, books were used by the teachers.

It leads to the conclusion that in majority of i.e. 72.50 percent lessons books were not used by computer teachers.

Table 4.62: Frequency wise and Percentage wise Distribution of the Computer Education Institutions with Reference to the Purpose of Using Books During Classroom Teaching.

Purpose of Using Books	Frequency	Percentage
To dictate	08	36.36
To explain	14	63.64
Total	22	100.00

Table 4.62 exhibited that out of the teachers using books during teaching, 36.36 percent teachers were using them to dictate, whereas, the rest 63.64 percent teachers were using them to explain during teaching.

Table 4.63: Frequency wise and Percentage wise Distribution of the Computer Education Institutions with Reference to the Way of Introducing a Lesson.

Way of Introducing a Lesson	Frequency	Percentage
Relevant activity	08	10.00
Previous knowledge	70	87.50
Arbitrarily	02	02.50
Total	80	100.00

Table 4.63 revealed that 10 percent, 87.50 percent and 2.50 percent lessons were introduced using relevant activity, previous knowledge and in arbitrary way respectively. No lesson was introduced using teaching model and through demonstration.

It leads to the conclusion that majority of lessons were introduced by using previous knowledge.

Table 4.64: Frequency wise and Percentage wise Distribution of Computer Education Institutions With Reference to the Approaches Adopted by the Teachers During Classroom Teaching.

Teaching Approach Used	Frequency	Percentage
Inductive	40	50.00
Deductive	06	07.50
Problem solving	34	42.50
Total	80	100.00

Table 4.64, depicted that in case of 50 percent, 7.50 percent, and 42.50 percent lessons, inductive, deductive and problem solving approach was used respectively during classroom teaching.

It leads to the conclusion that inductive and problem solving approach of teaching were found popular among computer teachers.

Table 4.65: Frequency wise and Percentage wise Distribution of the Computer Education institutions with Reference to the Degree of Pupils' Participation During Classroom Teaching.

Degree of Pupil's Participation	Frequency	Percentage
Maximum	34	43
Moderate	40	50
Less	06	07
Total	80	100.00

Table 4.65, exhibited that in 43 percent, 50 percent and 7 percent lessons, degree of pupils' participation was maximum, moderate and less respectively.

It leads to the conclusion that in majority of i.e. 93 percent lessons degree of pupils' participation was moderate and / or maximum. There was no lesson in which pupils' participation was not at all.

Table 4.66: Frequency wise and Percentage wise Distribution of the Computer Education Institutions with Reference to the Type of Black Board in the Classroom.

Type of Blackboard in the Classrooms	Frequency	Percentage
Chalk board	24	30
Marker board	56	70
Total	80	100.00

Table 4.66, depicted that in 70 percent Computer Education institutions marker board was used, whereas, in the rest 30 percent computer institutions chalk board was used. It leads to the conclusion that the use of market board was more popular in Computer Education institutions.

Table 4.67: Frequency wise and Percentage wise Distribution of the Computer Education institutions with Reference to the Frequency of Black Board Used During Teaching.

Frequency of Black Board Use	Frequency	Percentage
Very often	14	17.50
Often	08	10 00
Rarely	02	02.50
Not at all	56	70.00
Total	80	100.00

Table 4.67, exhibited that during teaching in 17.50 percent, 10 percent and two percent classrooms use of black board was found "very often", often and rare respectively, whereas, in 70 percent classrooms, use of black board was found nil.

In helps to draw the conclusion that in majority of i.e. 70 percent classrooms black boards were found not being used. Only in 28 percent classrooms it was found.

Table 4.68: Frequency wise and Percentage wise Distribution of the Computer Education Institutions with Reference to the Quality of Black Board Work During Teaching.

Quality of Black Board Work	Frequency	Percentage
Excellent	04	16.67
Satisfactory	14	58.33
Not satisfactory	06	25.00
Total	24	100.00

Table 4 68, exhibited that out of those classes where black board was used, in 16.67 percent, and 58.33 percent use of black board was excellent and satisfactory respectively, whereas, in 25 percent classes use of black board was not satisfactory It leads to the conclusion that in majority of i.e. 75 percent of those classes black board work was found satisfactory or excellent.

Table 4.69: Frequency wise and Percentage wise Distribution of the Computer Education Institutions with Reference to the Purpose of Using Blackboard.

Purpose of Using Blackboard	Frequency	Percentage
Detailed workout	12	50.00
Difficult content	08	33.33
Graphs and charts	04	16.67
Total	24	100.00

Table 4.69, exhibited that out of the classes where black board was used, in 50.00 percent, and 33.33 percent classes use of black board was found for detailed workout and explaining difficult content respectively, whereas, in the rest 16.67 percent classes, it was found used for drawing graphs and charts.

It leads to the conclusion from the classes in which black board found used, in 50 percent of them, blackboard was used for detailed workout, whereas, in the rest 50 percent it was used for explaining difficult content and drawing graphs and charts.

Table 4.70: Frequency wise and Percentage wise Distribution of the Computer Education Institutions with Reference to the Use of Teaching Aids During Teaching.

Use of Teaching Aids	Frequency	Percentage
Teaching aid was used	74	93.50
Teaching aid was not used	06	07.50
Total	80	100.00

Table 4.70 exhibited that in 93.50 percent classes teaching aids were used, whereas, in the rest 7.50 percent classes, teaching aids were not used.

It can be concluded from the same table that in majority of i.e. 92.50 percent classes, teaching aids were used during teaching.

Table 4.71: Frequency wise and Percentage wise Distribution of the Computer Education Institutions with Reference to the Use of Different Type of Teaching Aids.

Type of the Teaching Aids Used	Frequency	Percentage
Computer	68	85
OHP	06	7 5
Film projector	00	00
LCD	00	00
Slides	00	00
Not used	06	7.5
Total	80	100.00

Table 4.71, depicted that in 85 percent institutions, computer was used as teaching aids, whereas, in the rest 7.5 percent institutions OHP was used as a teaching aid. In non of the institutions film projector, LCD, and slides were used as teaching aids. It was found that computer was the most popular teaching aid among computer teachers.

Table 4.72: Frequency wise and Percentage Wise Distribution of Computer Institutions with Reference to Teaching Skills Used.

Skills Used	Excellent		Average		Poor		Total	
	F	%	F	%	F	%	F	%
(i) Explanation	50	62.50	30	37.50	00	00.00	80	100
(ii) Illustr. with Ex.	26	32.50	50	62.50	04	05.00	80	100
(iii)Reinforcement	06	07.50	34	42.50	40	50.00	80	100
(iv)Questioning	16	20.00	56	70.00	08	10.00	80	100
(v)Achieving Clos.	06	07.50	26	32.50	48	60.00	80	100
(vi)Aud-visual aids	18	24.33	40	54 05	16	21.62	76	100

Note: Audio visual aids were used in 76 classes, so total number of frequency of Audio-visual aids are 76 here.

Table 4.72, item no. (i), exhibited that in 62.50 percent classes use of the skill of explanation was Excellent, whereas, in 37.50 percent classes it was Average. Explanation was found poor nowhere.

Table 4.72, item no. (ii), exhibited that in 32.50 percent classes use of the skill of illustrating with example was Excellent, whereas, in 62.50 percent institutions it was Average and in the rest 5 percent of the classes it was noted poor.

Table 4.72, item no. (iii), exhibited that in 07.50 percent classes use of the skill of reinforcement was Excellent, whereas in 42.50 percent classes it was Average. In majority of i.e. 50.00 percent classes it was noted poor.

Table 4.72, item no. (iv), exhibited that in 20.00 percent classes use of the skill of questioning was Excellent, whereas, 70.00 percent classes it was Average and in the rest 10.00 percent of the classes it was noted poor.

Table 4.72, item (v), exhibited that in 32.50 percent classes use of skill of achieving closure was Average, whereas, in majority of i.e. 60 percent classes, it was found poor and in the rest 07.50 percent classes use of the skill of Achieving closure was found excellent.

Table 4.72, item (vi), revealed that in more than half of i.e. 54.05 the classes use of audio visual aids was average whereas in 24.33 percent and 21.62 percent classes it was excellent and average respectively.

The same table leads to the conclusion that skill of reinforcement, skill of achieving closure were found poorly used to significant extent, whereas, the use of other skills was found satisfactory.

Table 4.73: Frequency wise, Percentage wise and Average wise Distribution of Different Level of Questions Asked by the Teachers in the Classroom During Teaching.

Different Levels of Questions Asked by the Teachers	Frequency	Average Number of Questions Asked	Percentage
Knowledge level	384	4.80	48.00
Understanding level	230	2.88	28.75
Application level	186	2.32	23.25
Total	800	10.00	100

Table 4.73, revealed that 48.00 percent, 28.75 percent and 23 25 percent questions asked were of knowledge level, understanding level and application level respectively.

Table 4.73 also revealed that among all the levels of questions, percentage and frequency of knowledge level questions was highest i.e. 48 percent of the total questions asked were of knowledge level, whereas, 28.75 percent and 23.25 percent questions were asked of understanding and application level.

It leads to the conclusion that knowledge level questions were given more preference by the teachers during teaching in the classroom. Knowledge level questions were almost equal to the questions asked of understanding and application level together. Average 10 questions were asked in each period in each classroom.

Table 4.74: Frequency wise and Percentage wise Distribution of Frequency of Questions Asked by the Students During Classroom Teaching.

Frequency of Questions Asked by the pupils in One Class	Frequency	Percentage
Very often	32	40.00
Sometimes	42	52.50
Rarely	02	02.50
Not at all	04	05.00
Total	80	100.00

Table 4.74, unveiled that in 40 percent classes frequency of asking questions by the students was very often whereas, in 53 percent classes frequency of asking questions by the students was sometimes and in the rest 2.50 percent and 5.00 percent classed it was rare and not at all respectively.

The data of the table leads to the conclusion that in majority of i.e. 92.50 percent of the classes, frequency of asking questions by the students was either very often or sometimes, whereas, in 7.50 percent classes, asking questions by the students was rare or not at all so it needed to be improved.

Table 4.75: Frequency wise and Percentage wise Distribution of the Computer Education Institutions with Reference to the Assignment Given by the Teacher.

Status of Assignment Given by Teacher at the End of the Class	Frequency	Percentage
Assignment given by the teachers	44	55
Assignment not given by the teachers	36	45
Total	80	100

Table 4.75, depicted that in 55 percent classes, assignment was given to the pupils at the end of the class, whereas, in the rest 45 percent institutions, assignment was not given by the teachers at the end of the class.

Table 4.76: Frequency wise and Percentage wise Distribution of Computer Education Institutions With Reference to the Type of the Assignment Given.

Type of Assignment Given	Frequency	Percentage (Out of 44 classes)
Oral	10	22.73
Problem solving	34	77.27
Others	00	00.00
Total	44	100.00

Table 4.76, exhibited that out of all those classes in which assignment was given at the end of the period, in 77.28 percent classes teachers were giving problem solving type of assignment, whereas, in the rest 22.73 percent classes oral type of assignment was given. It means problem solving assignment was given more importance in computer subject by the teachers.

Table 4.77: Frequency wise and Percentage wise Distribution of the Computer Education institutions with Reference to the Quality of Supervision in the Class.

Quality of Supervision of Class by the Teacher	Frequency	Percentage
Good	32	40
Average	48	60
Poor	00	00
Total	80	100

Table 4.77, revealed that in 40 percent classes, supervision of classroom by the teacher was found "Good" whereas, in case of 60 percent classes, it was found "average". It was not found "poor" in any of the classes.

Table 4.78: Frequency wise and Percentage wise Distribution of the Computer Education institutions with Reference to the Quality of Classroom Management.

Quality of Classroom Management by the Teacher	Frequency	Percentage
Good	44	55
Average	32	40
Poor	04	05
Total	80	100

Table 4.78, depicted that in 55 percent of the classes, classroom management by the teacher was "Good", whereas, in 40 percent of the classes, it was noted "Average" and in the rest 5 percent classes, it was noted "Poor".

It leads to the conclusion that in majority of i.e. 95 percent classes, quality of management by computer teachers found good or average.

Table 4.79: Frequency wise and Percentage Wise Distribution of Different Teaching Styles Used in Classroom by the Teachers.

Type of the Leadership Style Used in Teaching	Frequency	Percentage
Democratic	60	75
Autocratic	12	15
Lessize fair	08	10
Total	80	100

Table 4.79, depicted that in majority of i.e. 75 percent institutions, democratic style was used in teaching, whereas, in 15 percent classes, autocratic style was used by the teachers in teaching and in the rest 10 percent classes, lessize fair style of leadership was used in teaching.

It can be concluded from the data of the same table that democratic style of teaching was preferred more by computer teachers as 75 percent teachers were found using this style.

Table 4.80: Frequency wise and Percentage wise Distribution of the Type and Number of Times Reinforcement Given in the Classroom.

Type of Reinforcement Given by the Teachers	Frequency	Average	Percentage
Positive	896	11.20	74.92
Negative	300	03.75	25.08
Total	1196	14.95	100.00

Table 4.80, exhibited that in majority of i.e. 75 percent classes positive reinforcement was given by the teacher, whereas, in the rest 25 percent classes, negative reinforcement was given by the teacher. Average number of positive and negative reinforcement given in each class was 11.20 and 3.75 times respectively.

It was found from the same table that teachers were giving positive reinforcement three times more than negative reinforcement given.

Table 4.81: Frequency wise and Percentage wise Distribution of Computer Education institutions With and Without Review of the Lesson Done at the End of the Period.

Whether Review of the Lesson Done at End	Frequency	Percentage
Yes	16	20
No	64	80
Total	80	100

Table 4.81, depicted that at the end of the period, in majority of i.e. 80 percent classes review of the lesson was not done by the teachers, whereas, in the rest 20 percent classes, review of the lesson was done by the teachers at the end of the class.

It leads to the conclusion that majority of the teachers were not reviewing the lesson at the end of the period.

Table 4.82: Frequency wise and Percentage wise Distribution of Methods of Teaching Adopted by the Teachers During Teaching.

Method Used in Teaching	Frequency	Percentage
Lecture method	44	55.00
Discussion method	06	07.50
Demonstration method	22	27.50
Discovery method	08	10.00
Total	80	100.00

Table 4.82. depicted that in 55 percent, 7.50 percent, 27.50 percent and 10 percent classes teachers used lecture method, discussion method, demonstration method, and discovery method respectively.

The same table helps to conclude that in more than half of i.e. 55 percent classes lecture method was used by the teachers, whereas, second preference was given to demonstration method. It was used in 27.50 percent classes. Discussion and discovery methods of teaching were not given notable importance in teaching.

4.7. ANALYSIS OF DATA FOR OBJECTIVE 7

Objective 7: "To Study the Problems Faced by Computer Education Institutions in Baroda District of Gujarat". To achieve this objective Data were collected with the help of a semi structured interview schedule. The interview schedule was constructed with 10 items to collect the data regarding various types of problems faced by Computer Education institutions. The data were collected from 40 Computer Education institutions. Collected data were analysed using percentage and frequency and discussed with the help of table 4.83 to table 4.92.

4.7.1 Problems Related to Teachers

Problems related to teachers in Computer Education institutions were found mainly like non-availability of teachers, lack of trained and experienced teachers, teachers' medium of instruction and less salary of teachers which is presented in the table 4.83.

Table 4.83: Frequency wise and Percentage wise Distribution of Computer Education Institutions With Reference to Problems Related to Teachers.

Problems Related to	No		Yes		Total	
	F	%	F	%	F	%
Availability of teachers.	25	62.50	15	37.50	40	100
Training of teachers	22	55.00	18	45.00	40	100
Qualification of teachers	33	82.50	07	17.50	40	100
Teachers' medium of instruction	32	80.00	08	20.00	40	100
Experience of teachers	37	92.50	03	07.50	40	100
Salary of teachers	36	90.00	04	10.00	40	100

Table 4.83, depicted that 62.50 percent institutions didn't face any problem related to availability of Computer Education teachers. 37.50 percent institutions faced the problems related to shortage of Computer Education Teachers.

From the same table it was found that 55 percent institutions didn't feel any problem related to training of their teachers, whereas, 45 percent institutions felt this as a problem. They said that they did not get Computer Education teachers with formal training of teaching methodologies.

The table also depicted that majority (82.50 percent) institutions didn't face any problem with regards to the qualification of teachers, whereas, 17.50 percent institutions faced this problem. According to them it was difficult to get a teacher with bachelor and master degree in computer because highly qualified professionals did not like to stay in this field.

The same table also depicted that 80 percent institutions had no problems related to the medium of instruction of teachers, whereas, it was found that the rest 20 percent institutions felt it as a problem. According to them it was difficult to get Computer Education teachers for teaching computer subjects both in English and in regional language.

From the same table it was found that majority of i.e. 92.50 percent of institutions didn't face any problem with regards to experience of teachers, whereas, the rest 7.50 percent institutions faced this problem. According to them fresh candidates were not able to teach content properly. Moreover there was short of more persons to teach in this field.

It was found from the same table that the majority of i.e. 90.00 percent of institutions didn't face any problem with regards to salary of the teachers, whereas, the rest 10 percent institutions agreed that computer teachers demanded more salary which was not affordable for their institution.

4.7.2 Problems Related to Students

Problems related to students in Computer Education institutions were found mainly like less admission of students, poor level and background of students, heterogeneous group of students, lack of regularity, punctuality and motivation level in students which is presented in the table 4.84.

Table 4.84: Frequency wise and Percentage wise Distribution of Computer Education Institutions with Reference to Problems Related to Students.

Problems Related to	No		Yes		Total	
	F	%	F	%	F	%
Availability of students	12	30.00	28	70.00	40	100
Level of students	06	15.00	34	85.00	40	100
Group composition of students	12	30.00	28	70.00	40	100
In service students	27	67.50	13	32.50	40	100
Background of students	17	42.50	23	57.50	40	100
Regularity and punctuality of students	28	70.00	12	30.00	40	100
Motivation level of students	32	80.00	08	20.00	40	100
Demand of students	34	85.00	06	15.00	40	100

It was found from the table 4.84 that 30 percent institutions didn't face any problem related to availability of students, whereas, 70 percent institutions agreed that they faced this problem. According to them, sufficient number of students were not available in regular batches, whereas, more students were available in vacation batches. They also stated that number of applicant had decreased significantly in last few years.

It was also found from the same table that 15 percent institutions didn't face any problem related to the level of students, whereas, the majority of i.e. 85 percent of institutions agreed that they faced this problem. According to them it was difficult to get students with higher mental ability. Majority of the students came from average and below average intellectual level.

It was also found that 30 percent institutions didn't face any problem with regards to composition of the group, whereas, the majority of i.e. 70 percent of institutions agreed that they faced this problem. According to them private institutions had more heterogeneous classroom group as there was no fixed criteria for enrollment in different courses. They also agreed to the point that it was not possible for them to

make separate homogenous group of students as enough number of students were not available. They also felt that it was also difficult to teach such heterogeneous group.

The same table also revealed that 67.50 percent institutions didn't face any problem due to in-service student group, whereas, the rest 32.50 percent institutions faced problems. According to them major problems were like, it was difficult to give suitable batch time to students, they were not regular, it was difficult for them to grasp new concepts quickly and lack of consistency in their motivation level was found as they only show interest in initial part of their course duration.

The same table also depicted that 42.50 percent institutions didn't face any problem due to background of their students, whereas, 57.50 percent institutions agreed that they faced the problem due to this. According to them they got quite heterogeneous students including school students, college students, other discipline students, in-service clientele, house wives etc. which created lots of problems in teaching learning due to their varied backgrounds.

The same table also revealed that 30 percent institutions didn't face any problem with regards to regularity and punctuality of the students, whereas, the majority of i.e. 70 percent of institutions said that they faced this problem as certain students were not regular and punctual in attending classes.

It was also found that majority of i.e. 80 percent institutions didn't face any problem related to lack of motivation of the students, whereas, the rest 20 percent institutions agreed that they faced this problem. According to them, the level of motivation was found high among college students and school students which were found low among corporate sector clients and other clients. The difference in motivation level also make teaching learning process difficult.

Table also depicted that majority of i.e. 85 percent institutions didn't face any problem due to demand of students, whereas, the rest 15 percent institutions agreed that they faced the problems as students demanded for better facilities like, A.C., free access to internet and more books which were not available adequately with their institutions.

4.7.3 Problems Related to Computer Laboratory

Problems related to computer laboratory in Computer Education institutions were found mainly like less number of computers and printers, less time available for

practicals, improper internet service and laboratory maintenance and license of software which is presented in the table 4.85.

Table 4.85: Frequency wise and Percentage wise Distribution of Computer Education Institutions with Reference to Computer Laboratory.

Problems Related to	No		Yes		Total	
	F	%	F	%	F	%
Internet	36	90.00	04	10.00	40	100
Number of computers	35	87.50	05	12.50	40	100
Printers	38	95.00	02	05.00	40	100
Time availability for practicals	36	90.00	04	10.00	40	100
Laboratory maintenance	29	72.50	11	27.50	40	100
License of software	21	52.50	19	47.50	40	100

Table 4.85 depicted that majority of (90 percent) the institutions didn't face any problem related to internet, whereas, the rest 10 percent institutions agreed that they faced the problems like, disconnecting internet frequently, costly to make free access to all the students speed not up to mark.

The same table also revealed that majority of (87.50 percent) the institutions didn't face any problem related to less number of computers, whereas, the rest 12.50 percent institutions agreed that they faced this problem and they stated that number of computers were not enough to provide separate computers to students individually. From the same table it was depicted that majority of (95 percent) the institutions didn't face any problem related to printers, whereas, the rest 5 percent institutions said that they faced problems like lack of sufficient number of printers and high cost of copy.

From this table it was also found that majority of (90 percent) the institutions didn't face any problem related with time availability for practicals, whereas, the rest 10 percent institutions faced this problem due to less availability of time for practicals.

Table 4.85 depicted that majority of (72.50 percent) institutions didn't face any problem related to laboratory maintenance, whereas, the rest 27.50 percent institutions said that they faced this.

From the same table it was depicted that 52.50 percent institutions didn't face any problem related to the license of the software, whereas, the rest 47.50 percent institutions agreed that they faced this problem as it was costly affair to purchase upgraded software with entry of upgraded software in market frequently.

4.7.4 Problems Related to Computer Education Courses

Problems related to computer laboratory in Computer Education institutions were related to new courses, existing courses, subsidised courses, study material for them and lack of availability of live projects which is presented in the table 4.86.

Table 4.86: Frequency wise and Percentage wise Distribution of Computer Education Institutions with Reference to Computer Education Courses.

Problems Related to	No		Yes		Total	
	F	%	F	%	F	%
Introduction of new courses	21	52.50	19	47.50	40	100
Availability of study material	21	52.50	19	47.50	40	100
Teaching of existing courses	29	72.50	11	27.50	40	100
Designing of new courses	22	55.00	18	45.00	40	100
Introduction of subsidised courses	34	85.00	06	15.00	40	100
Availability of live projects	28	70.00	12	30.00	40	100

Table 4.86, depicted that 52.50 percent institutions didn't face any problem related to introduction of new courses, whereas, the rest 47.50 percent institutions face the problems. According to them, advertisement expenditure occurred frequently for marketing new courses.

From the same table it was also found that 52.50 percent institutions didn't face the problem related to study material, where as, 47.50 percent of the institutions faced the problems. According to them old study material became useless, readymade study material was not available as per the requirement and preparing study material was too much time consuming.

The same table revealed that majority of (72.50 percent) of the institutions didn't face the problem related with old and existed courses, where as, 27.50 percent of the institutions faced this problem. According the them due to entry of new courses, students already enrolled for old courses get demotivated to learn them.

The table also revealed that 55 percent institutions didn't face any problem related to designing of new courses for meeting new demand, where as, 45 percent of the institutions faced this problems. According to them it was difficult to predict future requirements so it was difficult to redesign worthy courses.

From the same table it was also found that majority of (85.00 percent) institutions didn't face any problem due to subsidized courses in the market, whereas, the rest 15.00 percent of the institutions faced this problem. According to them higher merit pupils enrolled in subsidized courses so it became difficult to get higher merit students and problem of superiority and inferiority was found in the pupils of subsidised courses and self financed courses respectively.

This was also depicted from the same table that majority of (70.00 percent) the institutions didn't face any problem related to availability of live projects, whereas, the rest 30.00 percent of the institutions faced this problem. According to them it was difficult to get part time project and projects for latest languages and database in companies.

4.7.5 Problems Related to Batches of Computer Education Courses

Problems related to batch in Computer Education institutions were related to their times and number of students in each batch which is presented with the help of table 4.87.

Table 4.87: Frequency wise and Percentage wise Distribution of Computer Education Institutions with Reference to Batch of Computer Education.

Problems Related to	No		Yes		Total	
	F	**%**	**F**	**%**	**F**	**%**
Batch timing	22	55.00	18	45.00	40	100
Number of students in each batch	33	82.50	07	17.50	40	100

Table 4.87, revealed that 55 percent institutions didn't face any problem related to batch timings, where as, 45 percent of the institutions faced this problems According to them, it was difficult to give suitable time to all pupils as school and college students demanded batch time in connectivity with the time of their other classes and in service clientele demanded time after their job time.

The same table also exhibited that majority of (82.50 percent) the institutions didn't face any problem related to number of students in each batch, where as, 17.50 percent of the institutions faced this problem. According to them in certain bathes there was no room for students but in other batches, enough number of students were not available in the institutions offering part time courses.

4.7.6 Problems Related to Electricity

Problems related to electricity in Computer Education institutions were related to irregularity in supply of electricity, fluctuation in voltage and high cost of electricity which is presented in the table 4.88.

Table 4.88: Frequency wise and Percentage wise Distribution of Computer Education Institutions with Reference to Electricity.

Problems Related to	No		Yes		Total	
	F	%	F	%	F	%
Electricity supply	36	90.00	04	10.00	40	100
Fluctuation in electricity voltage	36	90.00	04	10.00	40	100
Cost of electricity	12	30.00	28	70.00	40	100

Table 4.88, revealed that majority of (90 percent) the institutions didn't face any problem related to electricity supply, whereas, the rest 10 percent of the institutions faced this problem as electricity supply was disconnected sometimes without prior information.

The same table also revealed that majority of (90 percent) the institutions didn't face any problem related to fluctuation in voltage, whereas, the rest 10 percent of the institutions faced this problem as fluctuation was observed frequently.

It was revealed from the table that 30 percent institutions didn't consider the cost of electricity as a problem, where as, the majority of (70 percent) the institutions considered it as a problem. According to them electricity was costly, subsidy should be offered to Computer Education institutions and collection of electricity bill should be monthly instead of once in two months.

4.7.7 Problems Related to Other Facilities

Computer Education institutions face certain other problems such as, insufficient facilities in classrooms, no availability of seminar room, no OHP, no video camera and lack of facilities for other activities which is presented in the table 4.89.

Table 4.89: Frequency and Percentage wise Distribution of Computer Education Institutions with Reference to Other Facilities

Problems Related to	No		Yes		Total	
	F	%	F	%	F	%
Classroom related facilities	39	97.50	01	02.50	40	100
Seminar room	29	72.50	11	27.50	40	100
Video camera	32	80.00	08	20.00	40	100
Over Head Projector	30	75.00	10	25.00	40	100
Facility for other activities	29	72.50	11	27.50	40	100

It was found from the table 4.89 that majority of (97.50 percent) the institutions didn't face any problem related to classrooms, whereas, the rest 2.50 percent of the institutions faced this problem. According to them class rooms should be better furnished with marker board and bulletin boards.

The same table also depicted that majority of (72.50 percent) the institutions didn't face any problem related to seminar hall, whereas, 27.50 percent of the institutions faced this problem as there was no seminar hall in the institution.

It was also found from the table that majority of (80 percent) the institutions didn't face any problem related to video camera, whereas, 20 percent of the institutions faced this problem as there was no video camera in the institutions.

From the same table it was found that 75.00 percent institutions didn't face any problem related to OHP, whereas, the rest 25 percent of the institutions faced this problem as it was not there in the institution and in certain cases it was demanded in all the theory teaching rooms.

It was also found from the same table that 72.50 percent institutions didn't face any problem related to the lack of facility for other activities, whereas, the rest 27.50 percent of the institutions faced this problem. According to them there was lack of canteen, sports room and hall to conduct other activities.

4.7.8 Problems Related to Fees

Problems related to fees in Computer Education institutions were related to less amount of fees and difficulty in collection of fees which is presented in the table 4.90.

Table 4.90: Frequency wise and Percentage wise Distribution of Computer Education Institutions with Reference to Fees of the Courses.

Problems Related to	No		Yes		Total	
	F	%	F	%	F	%
Amount of fees	22	55.00	18	45.00	40	100
Collection of fees	17	42.50	23	57.50	40	100

The Table 4.90 exhibited that 55.00 percent institutions didn't face any problem related to amount of fees, whereas, the rest 42.50 percent of the institutions faced this problem. According to them amount of fees were too low to survive.

The same table revealed that 42.50 percent institutions didn't face any problem related to collection of fees, whereas, the rest 57.50 percent of the institutions faced this problem. According to them collection of fees needed much efforts yet 100 percent fees was not collected.

4.7.9 Problems Related to Authorised Body

Problems related to authorised body in Computer Education institutions were related to government interruption and problems of affiliating authority which is presented in the table 4.91.

Table 4.91: Frequency wise and Percentage wise Distribution of Computer Education institutions with Reference to Any Body or Authority.

Problems Related to	No		Yes		Total	
	F	%	F	%	F	%
Government interruption	40	100.00	00	00.00	40	100
Affiliating /franchisee body	24	60.00	16	40.00	40	100

Table 4.91 depicted that none of the institution faced any problem related to government interruption.

The same table also showed that 60.00 percent institutions didn't face any problem related to affiliating / franchisee body, whereas, the rest 40.00 percent of the institutions faced this problem. According to them study material was not available and it was difficult to arrange exams and obtaining certificate in time.

4.7.10 Problem Related to Competition

Problem related to increased competition in the market of Computer Education is presented in the table 4.92.

Table 4.92: Frequency wise and Percentage wise Distribution of Computer Education Institutions with Reference to Competition.

Problems Related to	No		Yes		Total	
	F	%	F	%	F	%
Increased competition	24	60.00	16	40.00	40	100

Table 4.92, depicted that 60.00 percent institutions didn't face any problem related to increased competition, whereas, the rest 40.00 percent institutions faced this

problem. According to them due to increased competition fees were reduced unreasonably and it was difficult to get sufficient students.

4.8 ANALYSIS OF DATA FOR OBJECTIVE 8

Objective 8 "To Study the Market Value of Different Computer Education Courses Offered by Different Institutions in Baroda District of Gujarat." To achieve this objective 8 of the present study data were collected with the help of questionnaire which is analyzed and discussed in succeeding paragraphs with the help of table 4.93 and table 4.94.

Computer Education institutions offered many courses to cater varied need of local, national and global market. . A total of 45 courses were being offered in 40 different institutions. It is worth mentioning that certain courses were found common in more than one institutions and certain courses were individually offered by individual institution. There were 15 (33.33 %) of common courses and 30 (66.67 %) of individual courses found offered in different computer institutions.

It was observed that market demand of the all the Computer Education courses was not same. Here an attempt has been made to rank differed offered courses on the basis of a market value index in a five point scale. Heads of computer institutions were asked to rank the courses in accordance with the market value of the courses. 5 is considered as the highest average market value and 1 is considered as the lowest average market value in the index of market value.   A consolidated list with market value index of each course is prepared. Market value of common courses is presented in table 4.93.

Table 4.93: Average Market Value Index wise and Frequency of Institution wise Distribution of Common Computer Education Courses.

Common Courses	Frequency of Institutions	Average Market Value Index
MCA(Master Computer Application)	2	5.0
"B" Level course	2	5.0
Oracle	8	5.0
AutoCAD	5	4.8
Tally	4	4.8
Visual Basic	5	4.6

C, C++	17	4.4
Basic (M.S.Office, DOS, Windows)	5	4.3
Java	7	4.3
DTP (Desk Top Publishing)	7	4.1
Certificate in Multimedia	2	4.0
"O" Level	2	4.0
"A" Level	2	4.0
BCA(Bachelor Computer Application)	5	4.0
PGDCA (Post Graduate Diploma in Computer Application)	6	4.0

Table 4.93 revealed that average market value index for common courses ranged from four to five. MCA, "B" Level and Oracle were found with highest i.e. 5 market value index offered by 2 to 8 institutions. AutoCAD and Tally were found with 4.8 as market value index offered by 5 and 4 institutions respectively. Visual Basic was found offered by five institutions with 4.6 as market value index. C and C ++ were found with 4.4 as market value index which were found offered in maximum number of institutions. Basic and Java were found with 3 as market value index and offered by 5 and 7 Computer Education institutions respectively. DTP was found with 7 institutions with 4.1 as Market Value Index. Certificate in Multimedia, "O" Level, "A" Level, BCA and PGDCA were found with lowest market value index among common courses which were found among 2, 2, 2, 5 and 6 institutions respectively. The market value index for most of the common Computer Education courses were found with very high market value index may be due to the fact that private institutions may like to offer only those courses which have high demand in market.

Table-4.94: Average Market Value Index wise Distribution of individual Courses Offered in Different Institutions

Individual Courses	Average Market Value Index
Diploma in Website Designing	5
Diploma in 3D Engineering and Animation	5
JCHNP (JetkingCertified Hardware & Networking Professionals)	5
Complete Information Technology Professional	5

Vidya	5
Computer Hardware	5
M.Sc. IT (Master of Science in Information Technology)	5
Career Diploma in Multimedia	4
Diploma in Multi media	4
MCSE (MicroSoft Certified System Engineer)	4
Inventor	4
Mechanical Desktop Power pack	4
Complete Java Professional	4
ACCPWP(Aptech Certi. Computer Professional World Program)	4
Planetworkz	4
ADMCP(Adv. Dip. in Multi-lingual Computer Programming)	4
ADMCA(Advanced Dip.in Multi-lingual Computer Applications)	4
Certificate in Computer Management	4
B.Sc. IT (Bachelor of Science in Information Technology)	4
M.Sc. EB (Master of Science in Electronic Business)	4
COPA (Computer Operator & Processing Assistant)	4
ADCHN(Adv. Diploma in Computer Hardware & Networking)	3
Complete e-Commerce (Java Track)	3
Net Engineering	3
Diploma in Java	3
DMOA (Diploma in Office Automation)	3
How to make Personal Computer	3
A+	2
Complete e-Commerce (MicroSoft Track)	2
DMCA (Diploma in Multi-lingual Computer Application)	2

From the table 4.94 it was found that market value index for individual courses ranged from two to five. Seven courses namely Diploma in Website Designing, Diploma in 3D Engineering and Animation, JCHNP (JetkingCertified Hardware & Networking Professionals), Complete Information Technology Professional, Vidya, Computer Hardware, M.Sc. IT (Master of Science in Information Technology), were with five market value, whereas, fourteen courses namely Career Diploma in Multimedia, Diploma in Multi media, MCSE (MicroSoft Certified

System Engineer), Inventor, Mechanical Desktop Power pack, Complete Java Professional, ACCPWP(Aptech Certi. Computer Professional World Program), Planetworkz, ADMCP(Adv. Dip. in Multi-lingual Computer Programming), ADMCA(Advanced Dip.in Multi-lingual Computer Applications), Certificate in Computer Management, B.Sc. IT (Bachelor of Science in Information Technology), M.Sc. EB (Master of Science in Electronic Business), COPA (Computer Operator & Processing Assistant) were with four market value.

From the same table it was also found that six courses namely ADCHN(Adv. Diploma in Computer Hardware & Networking), Complete e-Commerce (Java Track), Net Engineering, Diploma in Java, DMOA (Diploma in Office Automation), How to make Personal Computer, were with three market value, whereas, three courses namely A+, Complete e-Commerce (MicroSoft Track), and DMCA (Diploma in Multi-lingual Computer Application) were with two market value and there was no course with less than two market value as most of the individual courses were offered by private institutions, they prefer to offer only those courses which are more in demand.

4.9 ANALYSIS OF DATA FOR OBJECTIVE 9

Objective 9: "To Compare the Status of Computer Education in Baroda District of Gujarat in Terms of Infrastructure, Hardware, Software and Other Facilities, Teaching Faculties etc. Available in Different Institutes viz. Government Recognized, Franchisee Study Centres of Renowned Computer Agencies and Other Private Institutes." To achieve this objective data were collected with the help of a questionnaire which are analyses and discussed with the help of table 4.98 to table 4.105.

4.9.1 Establishment of Different Types of Computer Education institutions

From table 4.1, it is depicted that highest number i.e. 50 percentage of Computer Education institutions were establishment during the years 1996 to 2000, whereas, before 1996 the rate of this growth was quite slow i.e. only 12.50 during a decade i.e. from 1986 to 1995. After 2000 the growth of Computer Education institutes again declined as only 37.50 percent institutions were established during 2001 and 2004.

Table 4.95: Frequency wise and Percentage wise Distribution of Different Types of Computer Education institutions Along with their Year of Establishment.

Years of Establishment	Type of Institutions Established						Total	
	Franchise		Self Managed		Govt. Recog.			
	F	%	F	%	F	%	F	%
1986-1990	01	02.50	00	00.00	01	02.50	02	05.00
1991-1995	00	00.00	02	05.00	01	02.50	03	07.50
1996-2000	09	22.50	05	12.50	06	15.00	20	50.00
2001-2004	05	12.50	08	20.00	02	05.00	15	37.50
Total	15	37.50	15	37.50	10	25.00	40	100.00

Table 4.95 depicted that in the year 1986-1990, 2.50 percent each franchise and government recognised institutions were established, where as, no self managed institutions were established during this period of time. During the year 1991 to 1995, 5 percent and 2.5 percent Self managed and government recognized institutions were established respectively and no franchise institution was established during in this period. During the period 1996 - 2000, establishment of franchise, self managed and government recognised institutions was 22.50 percent, 12.50 percent and 15 percent respectively, whereas, during the period 2001-2004 the established of franchise, self managed and government recognised institutions was 12.50 percent, 20 percent and 5 percent respectively.

It could be concluded from the analysis of data from the table 4.95 that the contribution of private organizations were quite more in terms of establishment of Computer Education institutes in comparison to government recognized institutions because 75 percentage of Computer Education institutes were established by private agencies, where as, the contribution of franchise study centers and self managed institutions were found equal in this regard.

4.9.2 Facilities in Different Types of Institutions

Here an attempt has been made to analise the availability of different facilities in different types of Computer Education institutions with the help of the following tables.

Table 4.96: Frequency wise and Percentage wise Distribution of Computers in Different types of Computer Education institutions.

Type of the computers	Computers in Different Institutions						Total
	Franchise		Self managed		Govt. Recog.		
	F	%	F	%	F	%	
486	06	01.88	05	04.67	05	01.63	16
Celeron	64	20.06	26	24.30	41	13.31	131
P1	70	21.95	00	00.00	20	06.49	90
P2	52	16.30	17	15.89	90	29.22	159
P3	107	33.54	58	54.21	115	37.34	280
P4	20	06.27	01	00.93	37	12.01	58
Total	319	100.00	107	100.00	308	100.00	734
Average no. of computers	21.27		7.13		30.80		18.35

Table 4.96 depicted that computers with 486 configuration, celeron, P1 and P2 computers together were available in 60.19 percent, 44.86 percent and 50.65 percent franchise, self managed and government recognised institutions respectively, where as, P3 and P4 computers together were found available with 39.81 percent, 55.14 percent, 49.35 percent franchise, self managed and government recognised institutions respectively. Average number of computers were found to be 21.27, 7.13 and 30.80 per institution in franchise, self managed and government recognised institutions respectively.

It leads to the conclusion that self managed institutions were found with more number of latest configuration computers i.e. 55.14 percent of their total computers, second position goes to government recognised institutions with 49.14 percent and

third position goes to franchise with 39.81 percent computers with latest technology. Actually the configuration of computers available in different type of institutions can be related with the period of their establishment as the type of institutions established in later years were found with latest configuration of computers and vice a versa. Average number of computers were found maximum with government recognised institutions, it may be due to the availability of funds in those institutions.

Table 4.97: Frequency wise and Percentage wise Distribution of Printers in Different type of Computer Education institutions.

Type of Printers	Printers in Different types of Institutions					
	Franchise		Self managed		Govt. recognized	
	F	%	F	%	F	%
Dot matrix	17	50.00	04	23.53	17	53.13
Inkjet	06	17.65	02	11.76	08	25.00
Laser	10	29.41	07	41.18	05	15.62
Others	01	02.94	04	23.53	02	06.25
TOTAL	34	100.00	17	100.00	32	100.00
Average no. of printers	2.27		1.13		3.20	

Table 4.97 revealed that franchise, self managed and government recognised institutions were having 50 percent, 23.53 percent and 53.13 percent dot matrix printers respectively, whereas, 17.65 percent, 11.76 percent and 25 percent inkjet printers respectively. In terms of laser printers franchise, self managed and government recognised institutions were having 29.41 percent, 41.18 percent and 15.62 percent respectively. The average number of printers in franchise, self managed and franchise institutions were found to be 2.27, 1.13 and 3.20 respectively.

The table leads to the conclusion that franchise institutions were having more dot matrix and laser printers with 50 percent and 29.40 percent of total printers respectively, where as, self managed institutions were having more laser and other type of printers with 41.18 percent and 23.33 percent of total printers respectively. Although government recognised institutions were having more dot matrix and inkjet

printers with 53.13 percent and 25 percent of total printers respectively. Like computers, Government recognised, were found with maximum number of printers may be due to availability of resources in comparison to franchise and Self managed institutions.

Table 4.98: Distribution of Different Category of Institutions With Reference to Number of Theory Classrooms, Number of Computer Laboratory, Number of Books and Area of Institution.

Facilities in Computer Education institutions.	Facilities in Different Institutions		
	Franchise	Self Governed	Govt. Recog.
Average area of each institution in Sq. ft.	2357.20	519.53	3081.90
Average number of theory classrooms	02.20	01.27	03.10
Average size of theory classroom in Sq. ft.	306.06	196.32	406.45
Average number of Computer Laboratories	01.93	01.00	001.60
Average size of Computer Laboratory in Sq. ft.	373.80	166.67	506.25
Average number of Books in Institutions	237.00	34.67	1033.00

The table 4.98 depicted that average area of a franchise, a self managed and a government recognised institutions were 2357.20 sq. ft., 519.53 sq.ft. and 3081.90 sq. ft respectively. Average number of classrooms in a franchise, a self managed and a government recognised institutions were 2.20, 1.27 and 3.10 respectively. In terms of average size of theory classrooms, it was found to be 306.06 sq.ft., 196.32 sq. ft., and 406.45 sq. ft in a franchise, a self managed and a government recognised institutions respectively. Average number of books with each institution were found to be 237, 34.67 and 1033 in franchise, self managed and government recognised institutions respectively. As far as computer laboratory was concerned, franchise, self managed and government recognised institutions were having 1.93, 1 and 1.60 computer laboratories and with size of 373.80 sq. ft., 166.67 sq. ft. and 506.25 sq. ft. respectively for specific institutions.

The table 4.98 could lead to the conclusion that in term of area of institutions, number of theory classes, average size of theory classes, size of computer laboratory, number of books in the institutions, government recognized, franchise and self managed institution were ranked first, second and third respectively. Only in terms of the number of computer laboratory, franchise, government recognized and self managed institution were ranked first, second and third respectively. Government recognized institutions were having maximum facilities in comparison to franchise and Self managed institutions may be due to the availability of resources, establishment of institutions for a longer time and running of courses with maximum number of students. Next comes the franchise study centers which may be due to fixed norms followed by these institutes in terms of required facilities. Self managed institutions were found with minimum facilities may be due to lack of funds, running less courses, less student strength, attitude of not spending more and getting more profit from less investment.

Table 4.99: Percentage wise Distribution of Different Category of Institutions With Reference to Library, Internet, OHP, Scanner, Web Camera and LCD Facility

Percentage of Institutions Having :	Facilities in Institutions in %		
	Franchise	Self Managed	Govt. Recog.
Library facility	60.00	13.33	70.00
Internet facility	100.00	40.00	90.00
OHP facility	93.33	46.67	90.00
Scanner facility	40.00	06.67	60.00
Web Camera facility	40.00	06.67	40.00
LCD facility	26.67	00.00	50.00

Table 4.99 depicted that 60 percent of franchise, 13.33 percent of self managed and 70 percent of government recognised institutions were having library facility. 100 percent of franchise, 40 percent of self managed and 90 percent of government recognised institutions were having internet facility. In terms of the

percentage of facility of OHP, 93.33 percent of franchise, 46.67 percent of self managed and 90 percent of government recognised institutions were having OHP facility 40 percent of franchise, 6.67 percent of self managed and 60 percent of government recognised institutions were having the facility of scanner. In terms of Web camera 40 percent of franchise, 6.67 percent of self managed and 40 percent of government recognised institutions were web camera facility. 26.67 percent of franchise, and 50 percent of government recognised institutions were having LCD facility in their institutions, but no self managed institution was found having LCD facility.

It could be analysed from the same table that in term of library facility, scanner facility, and LCD facility, more percentage of government recognized institutions were found with these facilities in comparison to franchise and Self managed institutions may be due to availability of resources, attitude to provide more facilities and specific norms of establishment. Less percentage of self managed institutions were found with these facilities may be due to resource crunch and improper attitude not to provide adequate facilities to students and to get more profit not spending more. In terms of internet facilities, web camera, and OHP faciliti, franchises were found with more number with these facilities and a nearly similar number government recognized institutions but less than franchises were found with these facilities. It may be due to the specific norms of having minimum of these facilities and not compromise with the quality of teaching learning these institutions were found with these facilities.

4.9.3 Teaching Staff in Different Types of Institutions

Here an attempt has been made to analise about the teaching staff in different types of Computer Education institutions with the help of the following tables.

Table 4.100: Frequency wise and Percentage Wise Distribution of the Teachers in Different Category of Institutions in Terms of their Teachers' Qualification in Computer Fields.

Teachers' Qualification in Computer Field	Franchise		Self Managed		Govt. Recog.	
	F	%	F	%	F	%
MCA and equivalent	10	19.23	04	13.33	14	32.56
BCA and equivalent	11	21.15	03	10.00	07	16.28
PGDCA and equivalent	04	07.69	03	10.00	13	30.23
Diploma in computer	18	34.62	09	30.00	05	11.63
Certificate in computer	09	17.31	11	36.67	04	09.30
TOTAL	52	100.00	30	100.00	43	100.00

From table 4.100, it was found that 19.23 percent, 13.33 percent and 32.56 percent teachers in franchise, self managed and government recognised institutions respectively found with MCA and equivalent qualifications. 21.15 percent, 10.00 percent, and 16.68 percent teachers from franchise, self managed and government recognised institutions respectively were found with BCA and equivalent qualification. 7.69 percent, 10 percent, and 30.23 percent teachers from franchise, self managed and government recognised institutions respectively were found with PGDCA and equivalent qualification. 34.62 percent, 30 percent and 11.63 percent teachers from franchise, self managed and government recognised institutions respectively were found with Diploma and equivalent qualification. 17.31 percent, 36.67 percent, and 9.30 percent teachers from franchise, self managed and government recognised institutions respectively were found with Certificate in computer and equivalent qualification.

From the analysis of the same table it could be concluded that government recognised institutions had more number of qualified teachers as 79.09 percent of total teaching staff of government recognised institutions were found with PGDCA and higher qualification, whereas, franchise institutions were found second with 48.07 percent teachers with PGDCA and higher qualification and self managed

institutions were on third rank with 33.33 percent of teachers with PGDCA and higher qualification. As far as the qualification of teachers are concerned, self managed institutions were having more number of less qualified teachers as 66.67 percent teaching staff was having certificate or diploma qualification only. It scenario may be such due to the fact that government recognized institution do pay more to teachers in comparison to other institutions, hence attracting more number of qualified staff and vice-versa. Job security may be another factor for government institutions to attract more qualified teachers. Franchises and self managed institutions may not be able to attract more number of qualified teachers may be due to comparably low salary structure and temporary nature of service condition.

Table 4.101: Frequency wise and Percentage Wise Distribution of the Teachers in Different Category of Institutions in Terms of their Teachers' Experiences.

Experience in Years	Franchise		Self managed		Govt. Recog.	
	F	%	F	%	F	%
2 years and less	26	50.00	14	46.67	23	53.49
03-05 years	25	48.08	14	46.67	13	30.23
More than 5 years	01	01.92	02	06.66	07	16.28
TOTAL	52	100.00	30	100.00	43	100.00

From the table 4.101, it was found that 50 percent, 46.67 percent, and 53.49 percent computer teachers of franchises, self managed and government recognised institutions respectively were found having less than two years experience. 48.08 percent, 46.67 percent and 30.23 percent computer teachers of franchises, self managed and government recognised institutions respectively were found having experience from three to five years. The rest 1.92 percent, 6.66 percent and 16.28 percent computer teachers of franchises, self managed and government recognised institutions respectively were found having more than five years of teaching experience.

It led to the conclusion that in each category of computer institutions, almost half of the total teachers were with up to two years experience, whereas, in all the

categories of institutions, the percentage of teachers with more than five years experience were relatively more with government recognised institutions.

Table 4.102: Frequency wise and Percentage Wise Distribution of the Teachers in Different Category of Institutions in Terms of Different Levels of Salary Paid to Computer Teachers

Salary Structure	Franchise		Self managed		Govt. Recog.	
(Salary Paid in Rs.)	F	%	F	%	F	%
Highly paid (more than Rs. 8000)	02	03.85	01	03.33	09	20.93
Moderately paid (Rs.4001-Rs.8000)	23	44.23	12	40.00	15	34.88
Less paid (up to Rs. 4000)	27	51.92	17	56.67	19	44.19
TOTAL	52	100.00	30	100.00	43	100.00
Average monthly salary paid	Rs. 4092		Rs. 3720		Rs. 6312	

Table 4.102 depicted that 3.85 percent computer teachers of franchise institutions, 3.33 percent of self managed institutions and 20.93 percent of government recognised institutions were highly paid i.e. more than Rs. 8,000 per month. 44.23 percent, 40 percent and 34.88 percent computer teachers of franchise institution, self managed institution and government recognised institution were found moderately paid i.e. Rs. 4001 to 8000 per month respectively. 51.92 percent, 56.67 percent and 44.19 percent of computer teachers of franchise, self managed and government recognised institutions were found with less salary i.e. up to Rs. 4000 per month respectively. In terms of average salary paid to teachers, computer teachers of franchise, self managed and government recognised institutions were found with Rs. 4092, Rs. 3720, and 6312 respectively.

It could be concluded from the same table that government recognised institutions were having more highly paid teachers i.e. more than Rs. 8,000 per month, which was more than six times to other category institutions, whereas, franchise institutions were having more moderately paid teachers and self managed institutions were having more less paid teachers among all the three category of institutions. In average salary of computer teachers government recognised institutions were on first

rank with Rs. 6312, franchise on second with Rs. 4092 and self managed institutions were on third rank with Rs. 3720 per month respectively.

It was also found from the table 4.94 that majority of i.e. 46.67 percent individual courses were with 4 market value index, whereas, 23.33 percent individual courses were with 5 market value index and the rest 20 percent and 10 percent courses were with three and two market value respectively.

4.10. DISCUSSION

While discussing it is imperative to mention that role of government institutions is negligible in the market of Computer Education in Baroda district. It was found that institutions established through non private finance were 5 percent in total only. Although to increase it's participation, government has recognised certain institutions in the field of Computer Education and thereby contribution of government recognised institutions have gone to 25 percent in total institutions of Computer Education of the district. This recognition has definitely improved the state of Computer Education in Baroda district. Although it was found that only 5% Computer Education institutions were offering subsidized courses, where as, the rest 95% Computer Education institutions were offering self financed courses only. In this state, the students who are academically good but economically poor, have hardly any scope for study.

In the scenario where government contribution in the field of education is appreciating, the question arises why government is not contributing in the field of Computer Education enthusiastically ? It may be because establishing education institutions requires heavy investment and not like other liberal education. So in this state, if government doesn't want to take financial burden it should make such a policy as to incorporate economically poor but academically good class. It should come up with certain rules regulation or ordinance as to provide Computer Education to this class on subsidised rate through the institutions imparting Computer Education on self financed basis. Government may fix up certain percentage of subsidised admission at total admissions of the institution or government may come up with large scaled scheme of scholar ship for these students. This class of population can't be ignored as it has immense potential to contribute as a back bone of the economy of the country. This policy is essential specially in the circumstances when government

is not coming up with the institutions offering subsidized courses in the field of Computer Education.

It was found that those 75 percent institutions which are not established following any norms and criteria of government body, some of them are worth appreciating but the work of majority of them is doubtful. These institutions can be put in two categories with respect to the norms and criteria followed (1) Franchise institutions established under recognision of giant Computer Education agencies such as, NIIT, Apteach, SSI, LCC etc. and, (2) Self managed institutions established without following any criteria of any private or government body. Looking in terms of courses it was found that self managed private institutions & franchise institutions were having no standardization in courses with respect to course duration, fees, ratio of theory practical teaching hours, number of students per batch, weightage of theory and practical in evaluation etc.. Additionally, they were not following any admission & eligibility criteria strictly for enrolling students. Which is enough cause for poor outcome and it might have become the major reason for slow growth in computer education institutions after 2000. Closing. Comparatively it was found that in case of franchise institutions, situation with respect to courses was relatively better than self managed institutions. It might be because franchise institutions were teaching the courses designed by the head office of these renowned Computer Education agencies like NIIT, Aptech etc. but in case of self managed institutions, they were designing there own courses and modifying them as per the local needs and their understanding in this regard. If this is the condition of the courses which are the core of education, keeping big expectations from the output of these institutions is expecting impossible. So there should be specific body of experts to design the courses and it's related aspects like fees, admission and eligibility criteria, ratio of theory and practical in teaching, number of students per batch, course duration, weightage of theory & practical in evaluation etc. to ensure the quality of computer education.

In terms of norms, criteria, policy & guidelines for Computer Education it was found that central and state government has drafted IT education policies. Accordingly universities, DOEACC, ITI, AICTE have criteria required for their affiliation. But these norms and criteria control only 25 percent of the institutions of Computer Education. 37.50 percent institutions are established under franchise of renowned computer agencies like, NIIT, Aptech etc. these agencies do have their

norms, criteria and guidelines for their franchise institutions. The remaining Computer Education institutions were grouped under self managed institutions which were established without following norms and criteria of any authority.

In reality it was found that only 12.50 percent of the total institutions were following the norms and criteria of authorised bodies in that one affiliated college, DOEACC Certified and ITI institutions were found. So there should be monitoring body to keep the watch over these institutions & there should be punishment in case norms and criteria are not found followed.

As far as hardware, software, infrastructure faculties are concern it was found that these faculties such as computers (number of computers, purpose of use and configuration) printers (number of printers, model and purpose of use), carpet area of institutions, library & books, classrooms (size, number, facility), computer laboratories (size, facility, number) internet facility and equipments like LCD, OHP, Web Camera, Scanner, etc. were found poor in many institutions. It was noted that except university departments, ITI, one affiliated college and some franchise institutions these software, hardware and infrastructure facilities were poor in majority of i.e. 87.50 percent the institutions it was found that average number of computers printers, theory teaching class, and computer laboratories were 18, 2, and 2 respectively, where as average area of institutions and average size of theory teaching classrooms was 1850 Sq.ft. and 312 Sq. ft. respectively . It depicts poor facilities of computer education institutions apart from this, if these facilities are seen comparatively in government recognized, franchise & self managed private institutions it was found that self managed institutions were having poor facilities comparing to franchise institutions and government recognized institutions and franchise institutions were although better the self managed institutions but quite poorer than government recognized institutions even within government recognized institutions study institutions of universities were found with very poor facilities.

This state may be due to ineffective and insufficient control over them. So in order to improve Computer Education, there should be enough watch over them. It was found that average number of computers were 30.80, 21.27 and 7.13 average number of printers were 3.20, 2.27 and 1.12 average number of computer laboratories were 1.93, 1.60 and 1 average number of theory teaching classrooms were 3.10, 2.20, 1.27 average number of books were 1033 , 237 and 35 in government recognised,

franchise and self managed institutions respectively, whereas, average size of theory teaching classrooms were of 406, 306 and 196 Sq.ft and average area of institutions was 3082, 2357, 406, 306, and 196 Sq. ft in government recognised, franchise and self managed institutions respectively. The data depicted that the state of self managed institutions is worse than franchise institutions and state of franchise institutions is worse than government recognised institutions.

In terms of teaching staff, majority of the teachers is the field of Computer Education were less paid as average salary of 50.40 and 40 percent computer teachers was Rs. 5,520 and Rs. 2886 respectively. Computer Education teachers were not given status and security like the teachers of other subjects. Moreover majority of the teachers were found teaching all the subjects in the institution. Expecting entry of good quality man power in this field is expecting impossible in this situation. It was even found that large number of teachers were not enough experience. This may be due to lack of security and status of computer teacher. So their status, security and salaries should be raised.

Majority of the teachers were found without having training in teaching pedagogy. In majority of the classes teaching skills like reinforcement, questioning, achieving closure, recapitulation etc. were found not used properly, whereas, skill of explanation, and skill of introducing lesson were found average. Majority of the teachers were teaching without lesson plan. All these weaknesses in teaching learning process affect the output of teaching. These problems may be due to inexperienced, less qualified and not trained teachers in teaching pedagogy. So there should be fixed criteria for working as a Computer subject teacher with respect to qualification, experience, teacher training etc. and there should be a course of teacher training for computer teachers. The problem of Computer Education teacher was very serious in all category of institutions including government recognised, franchise, and self managed private institutions.