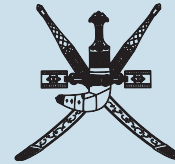




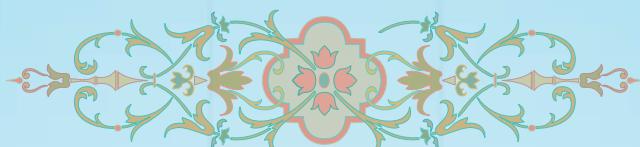
Ministry of Education
Sultanate of Oman



Information Technology Authority
Sultanate of Oman

The Final Report on the Inclusive Survey of Indicators of Information and Communications Technology in the Education Sector for Grades 1 – 12

November 2011



“Information Technology and communications have now become the main elements that move forward the development process in this third millennium; therefore we have accorded our attention to finding a national strategy to develop the skills and abilities of citizens in this domain with the aim of further developing eGovernment services. We are closely following the important steps that we have made in this regard. We call upon all government institutions to speedily enhance their performance, and to facilitate their services, by applying digital technology in order to usher the Sultanate into the constantly evolving spheres for applying knowledge.”

**His Majesty Sultan Qaboos bin Said Al Said
Council of Oman, 11th November 2008**





His Majesty Sultan Qaboos Bin Said

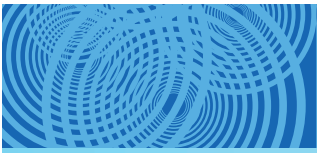


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Preamble

by Her Excellency the Minister of Education

The last years of the twentieth century have witnessed a scientific and technological revolution in the field of information and communication. This revolution has provided suitable conditions to form all aspects and activities of life. The scientific and technological explosion has reached its peak at the beginning of the twenty first century making coming true the knowledge society, and giving way to information and communication technology to become the feature of the current era.



This state requires drawing educational policies and setting plans in a way that ensures producing qualified citizens who can efficiently and competently use this technology.

In recognition of the outcomes of scientific developments and their consequences reflected in the huge progress which took place in using this technology, the Ministry of Education has crowned its current and future policies through employment of science and technology as a major component in education and educational approaches so as to prepare citizens of the future.

This policy required allocating portion of the total costs of education to meet provision of its financial needs and training requirements in a way that ensures a rational use of information and communication technology in teaching and learning, without ignoring the use of this technology in school management.

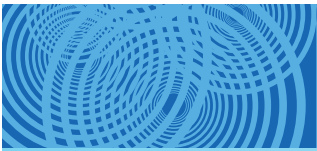
Indicators of information and communication technology are considered very important due to the fact that developed nations give high priority to this sector. This technology is an indication which reflects the progress achieved by any country. In this respect, the Sultanate of Oman has taken many successive steps aiming at coping with the latest international development in the field of information and communication technology as part of its attempts to implement the e-government concepts. To reflect the care and attention paid by the Ministry of Education to the development of employment of information and communication technology in the educational sector, this survey has been conducted by the Ministry in cooperation with the Information Technology Authority to collect data and relevant indicators in the sector.

The Ministry of Education has crowned its efforts by publication of this document which represents a data base covering the availability and usage of information and communication technology in all the schools in the Sultanate of Oman.

In appreciation of this effort, I would like to express my gratitude and thanks to the members of the team who contributed to the development of this valuable document. We are looking forward that this work shall be followed by further efforts of periodical updating and improvement so that this data can be an efficient tool of future planning and policy making of education.

Dr. Madiha Ahmmed Al Shybania

Minister of Education





Foreword

by His Excellency the Undersecretary of the Ministry of Education for Educational Planning and Human Resources Development

Statistical data has become a main stake for making any decision. It provides plenty of information that helps planners and decision makers in designing policies. Statistical surveys are considered as one of the major elements in the statistical process related to education sector. They supply decision makers with accurate and detailed data on the current status of education and enable them to make sensible decisions to tackle weaknesses of the educational process.

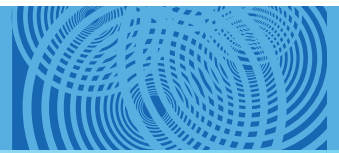


Achieving this objective cannot be done without preparing Omani citizens and providing them with skills and experiences which enable them to use modern technologies, on top of which is the computer. This fact necessarily leads us towards the educational system which is considered as the main source of information and skills during schooling years through a lifelong continuous learning process of the individual and the community.

Starting from this reality, countries as well as international and regional organizations concerned with education, economy, science and technology turn toward researches and investigations to identify indicators of usage of information and communication technology in their societies, especially in the field of education. Education represents the first step of the march towards the future. This trend is consolidated by the study which was initiated by the International Institute of Statistics of the UNESCO. The Sultanate of Oman was among several countries participated in the study. The study covered seven indicators which represented the main criteria of using information and communication technology in education. The study resulted in recommending all participating countries and other countries to conduct their own studies which include wide range indicators according to local conditions and capabilities of each country. Studies aimed at measuring indicators and highlighting the use of technology for development purposes.

Since the Sultanate of Oman believes that there shall not be economic development without the use of science and technology, the Ministry of Education in cooperation with the former Ministry of National Economy and the Information Technology Authority have directed their common efforts to conduct a survey of indicators of information and communication technology in education prior to tertiary education. This cooperation has resulted in this study to which I write this Foreword and place it before educationists and researchers who are interested in the field of development of science and technology and their use in daily life in general and in development programs in particular.

In this foreword, I would not like to highlight the indicators and the results of the survey since all details are stated in the following pages. Yet, I would like to mention that the study has covered not only the sample but all government and private schools of all kinds and categories as well as students and teaching and administrative staff and the supporting technical personnel. Thus, the Sultanate of Oman has conducted



a distinguished comprehensive study beyond the selected sample. It also covered a large number of indicators of which 35 were for schools, 22 for teaching and administrative staff and 11 for students.

I would also like to make a general statement that indicators measure the current status of the educational system in the Sultanate of Oman in terms of the extent to which information and communication devices and tools are available in schools. In this respect I especially refer to communication infrastructure, availability of computers for educational purposes, administrative services and connecting schools to internet networks and services. There are also other indicators concerned with the extent to which teachers and students are using computers and the internet for teaching and learning purposes inside schools, either in classrooms, computers laboratories, learning resources centers or at home. A comparative study covering these indicators was conducted between public and private schools so as to identify and enforce strengths on one hand and discover and tackle weaknesses on the other hand in each type of education.

Finally, I would like to extend my thanks and appreciation to all those who contributed to the development of this study with regard to supervision, field implementation, analysis and evaluation. My thanks are also extended to schools' administrators, teachers, technicians and students for their contributions, keenness and devotion in providing data and information required by the study, the thing that reflects high degree of understanding, honesty and commitment to serve the national interests.

Saud bin Salim Ali Al Baloushi

Undersecretary for Educational Planning and Human Resources Development

Executive Summary

The project of Survey of Indicators of Information and Communications Technology in the Education Sector was conducted through cooperation between the Ministry of Education, the Ministry of National Economy and the Information Technology Authority as from 31/8/2010 to 15/11/2010. It aimed at identifying qualitative and quantitative indicators of information and communication technology and its use in the educational sector in the Sultanate of Oman. The Sultanate has adopted the idea of inclusive survey of all targeted institutions in the education sector in all schools (public, private, international, Islamic institutes and the Royal Guard College) so as to implement this project. This project is considered as the first initiative of its type and size in the Arab world as well as in terms of facilities provided.

The parties involved in this project have designed the final versions of questionnaires for administrative, teaching and technical staff as well as students, after training and usage guides were developed at an earlier stage. Many training sessions of different levels were held in Muscat and in educational regions. Data collected was based on information which was gathered during the implementation period. The data was then analyzed using the following figures:

Type of school	Number of schools	Number of administrative and teaching staff	Number of students
Public	1040	49273	505633
Private	181	2512	30369
International	27	1449	29872
Islamic Institutes	4	71	570
The Royal College	1	62	132
Total	1253	53367	566576

The following results were concluded for public schools after data was analyzed by SPSS and Excel:

- The percentage of using radio was 98.6% and the TV was 69.9%.
- The ratio of computer for each student was 11.8 and the ratio of using computers for educational purposes was 41.3.
- The percentage of using computers and the internet by students inside schools was 88.7% and 91.1% successively.

- The percentage of availability of the educational portal was 100%, the school administration software 99.9%, learning resources centers 89.2%, internal networks 84.5%, the internet 86.7%, computer laboratories 68.8% and fixed telephones 82.5%.
- The percentage of administrative, teaching and technical staff who possess mobile phones was 99.9%.
- The percentage of schools which used to conduct local training workshops in the field of information technology was 91%.

In addition, the report includes all procedures which were followed in planning, designing, development, implementation and evaluation stages. It also includes results of analysis and its implications as well as the challenges and recommendations. Among the most important recommendations concluded by the survey are:

1. Provide teaching staff with required skills to employ information and communication in the teaching learning process. This can be achieved through rehabilitation of teachers in this field by encouraging the concerned parties at the Ministry of Education and information technology departments in the universities to present specialized and training programs to rehabilitate teachers and specialists of Omani schools. Academic university programs and post graduate programs can also be introduced in this respect.
2. Make use as much as possible of results concluded and incorporate them in future plans related to the development of all levels of education through setting up a clear strategy for informatics in education in the Sultanate of Oman.
3. Ensure the sustainability of collection of data and inference of indicators which are relevant to information and communication technology in the educational sector. This can be made through adding such data to the data already exist on the educational portal on schools as well as administrative and teaching staff and students. Survey shall be conducted on periodical basis by the Ministry of Education.
4. Follow up and implement latest developments of technology used in education as well as develop training programs as per different specialization whenever such programs are required.
5. Make endeavors to connect schools which are not yet connected (13% of the total number of schools) with the Internet.
6. Encourage teachers and supervisors to increase the use of computers for educational purposes. The current percentage of schools which use computers in teaching and learning is 41.3% of the total number of schools who possess computers.

Introduction

Based on the care that the Sultanate of Oman pays to the survey of indicators in different fields and to the development of using information and communication technology in educational sector, the Ministry of Education has implemented, in cooperation with the former Ministry of National Economy and the Information Technology Authority, the project of the survey of using information and communication technology in the education sector in the Sultanate of Oman. This project was concerned with collecting data and drawing indicators of administrative and teaching staff and students of all schools of different educational levels. This project is launched to keep up with the international trend in surveying technology indicators in different fields. Many countries have conducted such surveys. These include Egypt, Qatar, Bahrain, Tunisia, USA, Canada, Denmark, Finland, Norway, Indonesia, Japan, South Korea, India and many others. The survey in Oman was marked by its inclusiveness that covered all targeted categories in the educational sector in all schools (public, private, international, Islamic institutes and the Omani Royal Guard College). In addition, it was used as a mechanism to collect electronic data.

The successes of this project depended on the participation of all targeted categories involved in the educational process through the accurate and completed information they provided on the questionnaire formats as well as the supporting electronic system and the prompt data verification which have contributed with other elements to the success of the project.

Objectives of the Survey


The project of the survey of information and communication technology in the educational sector aimed at:

1. Identifying the status of propagation and employment of modern technologies in the sector of general education in all schools of the Sultanate of Oman.
2. Developing a main data base on the most important technologies used in the sector of general education in the Sultanate of Oman.
3. Developing reports which help in decision making, planning and developing programs of national capacity building.
4. Providing government, private and international institutions and organizations with actual indicators which reflect the real image of the Sultanate of Oman in this field.

Meanings of terms:

The meanings of terms used in these reports are:

1. **Indicator:** It is an arithmetic value (percentage) which indicates the scope of availability of technological device/tool/facilities in an educational institution.
2. **Average:** The total of individuals divided by units (e.g. the number of all students in classrooms ÷ number of classrooms = the average of students in one classrooms).
3. **Total:** The total of all elements (e.g. individuals or units).
4. **Government (public) schools:**
 - Basic Education: It is a ten year education by the end of which students are promoted to the Post-basic Education which lasts for two years. Basic Education is divided into two cycles: the first cycle includes grade one to four and the second cycle includes grade five to ten.
 - Post-basic Education includes grade eleven and twelve. Basic and general education students who successfully pass grade ten final examinations are enrolled in grade eleven. Specialized curricula are taught in this level taking into account students' interests and choices.
 - General Education which lasts for twelve years and it was the prevailing type of education before the gradual introduction of the new basic education system by the Ministry of Education as from 1998/99 school year.
5. **Private Schools:** They are owned by individuals, companies or private institutions. Omani and non-Omani students attend these schools. This category includes:
 - Monolingual schools: All subjects are taught in Arabic language (except foreign languages).
 - Bilingual schools: Mathematics and sciences are taught in other languages rather than Arabic. They are allowed to teach international curricula.
 - Global schools: They teach curricula which are internationally recognized.
6. **International schools:** These schools provide educational services to expatriates who are living in the Sultanate of Oman.
7. **Islamic Sciences Institutes:** Sultan Qaboos Center for Islamic Culture supervises over these institutes. They include grade ten to twelve and teach special curricula of Islamic studies, Arabic language, history and computer sciences. As for other subjects, such as mathematics and sciences, these schools teach the same courses prescribed by the Ministry of Education according to the approved teaching plan. These institutes award their graduates the General Diploma in Islamic Sciences which is issued by the Ministry of Education and it is equivalent to the General Diploma of Education of the Sultanate of Oman.


- 
- 8. The Technological College of the Omani Royal Guard:** It is a specialized college in the field of technological sciences. It awards its graduates a higher diploma in technological sciences after three years of study following obtaining the technological general diploma awarded by the Ministry of Education. It also awards the National Diploma after two years of study following obtaining the technological general diploma awarded by the Ministry of Education.

The theoretical framework of the survey:

Indicators of the use of information and communication technology in education are considered as the most important criteria which indicate the extent to which progress has been achieved in the formation of the knowledge and information society. They describe the infrastructure of information and communication technology in the sector of education and its effect in the social and cultural development and the extent to which it is used and produced. Many organizations such as the UNESCO have launched initiatives and projects to measure basic indicators, statistics and data and other tools of information technology in several Arab countries. The Sultanate of Oman has participated in these initiatives through implementation of the current project which was carried out in cooperation between the Ministry of Education, the former Ministry of National Economy and the Information Technology Authority. The three parties worked together to produce a data base for these indicators.

It worth mentioning that some similar surveys, such as the one which was conducted by Gaible in 2009, have found out that the Caribbean Islands which depend on tourism as the main resource of income and despite their limited economic resources, have succeeded in providing opportunities to all students, especially in secondary level, to acquire technological skills, and that students have found a chance to reinforce and develop these skills. The lack and low quality of computers in elementary schools was the main challenge that encountered teachers and students to use information and communication technology. The efforts made by governments and civil organizations as well as parents have helped in providing technological facilities of a better quality in these schools. Some institutions train teachers to master technological skills. Yet, these islands are in need of clear documented policies of information and communication technology. Nevertheless, this matter does not prevent some of these islands from launching technological projects in the field of education just as it is the case in the British Barbados and Virgin islands, Cayman and Jamaica, where millions of American dollars were allocated to build classrooms supplied with technology applications and multimedia laboratories.


In England, indicators' surveys which were conducted by the Department of Education and Skills have showed that most of computers in elementary and secondary schools were in use for educational purposes. The ratios of computers to students were 1:7.5 in the elementary level, 1:4.9 in secondary and 1:3.0 in private schools. These percentages showed that the target which was determined already by the government was achieved. The percentages of computers which were in use for administrative purposes were 6.0 per elementary school, 45.6 per secondary school and



10.6 per private school. 96% of schools have computers in classrooms and laboratories, 95% have computers in administration offices and 93% have computers in teachers' rooms. It was observed that most of schools are connected to local intranet with percentages of 91% elementary schools, 99% secondary schools and 93% private schools. Most of personnel, teachers and head teachers have personal computers at home. 63% of elementary schools, 92% of secondary schools and 71% of private schools are provided with interactive boards. It was found that most of schools are provided with digital overhead projectors, printers, scanners, cameras and digital video devices. Limited number of public and private elementary schools have video conference facilities; meanwhile 36% of secondary schools enjoy such facilities.

It was found that private schools use more assistive technology devices and programmes designed for students with special needs. 99% of schools in different educational levels are connected to the internet with an increasing use of broad band connections; meanwhile some schools still use dial-up modems. Using electronic mail accounts is more common nowadays compared to previous years with a percentage of 97% of elementary schools, 98% of secondary schools and 96% of private schools. Most schools offer private e-mail accounts to their employees and students. 90% of respondents say that they have received suitable levels of training in using technology. About 3% to 7% of schools stated that their employees did not receive any sort of training in using technology, the thing that indicates the low percentage of such cases. Educational offices at different districts provide technical support to 60% of elementary schools. It was indicated that 38% of schools depend on the technical support provided by their own technical support staff, whereas 52% of schools depend on their teachers to get technical support. 94% of secondary schools initially depend on the technical support provided by their own technical support staff compared to 55% of private schools. The surveys showed that 92% of elementary teachers, 83% of elementary head teachers, 70% of secondary teachers, 72% of secondary head teachers, 91% of private schools teachers and 8% of private schools head teachers use technology for educational purposes.


In New Zealand, Johnson, Calvert and Raggett, in their survey report on indicators in 2009, stated that all schools there were connected to the internet. The report concluded that 46% of elementary schools, 51% of secondary schools and 62% of private schools were connected to a fast asymmetric digital subscriber line (ADSL). It also stated that 50% of elementary schools, 26% of secondary schools and 41% of private schools were wireless connected. The wireless connection has become more common. The report mentioned that all schools (except 2%) have special places where students have access to the internet via computers. Such places were represented in classrooms in 75% of elementary schools, 83% of secondary schools and 84% of private schools. It was found that all employees and students had computers at home although students were with less percentage in this respect. Researchers found that all schools had their own websites or they were on the way to develop such sites. Most schools developed policies for the safe use of the internet. The percentage of such schools was 95% of elementary schools, 98% of secondary schools and



89% of private schools. There are 93% of elementary schools, 97% of secondary schools and 94% of private schools use a control system to refine and revise the contents of websites. It is very common among students to have electronic mail accounts and they frequently browse through social websites such as Google Earth, Wikipedia, YouTube and Blogs. It was found that students use these websites more than they use other learning programs. It was observed that computers were at least used for some time in lessons of most school subjects such as computer sciences, English language, mathematics and social studies throughout the school week. It was also found that the ratio of computers against students was one computer for each four students in elementary schools and one computer for each three students in secondary schools. It was observed that schools use overhead projectors in teaching presentations as well as laptops and desktops for teaching. Desktop and laptops are also used for preparing lessons and for administrative purposes. While most of schools have school and library management systems, less number of schools have electronic learning management systems. Most of schools either already have participated or they participate in training projects aiming at achieving professional development of their teachers. It was found that 75% of schools had local wireless intranets where classrooms are connected to learning resource centers in these schools. Most of these networks are administered by schools technicians in 46% of secondary schools or by hired technicians from outside schools in 40% of elementary schools and 50% of private schools.

The report which was developed by the World Bank (Farrell & Isaacs, 2007) indicates that African Ministries of Education have become more active in coordinating and leading the development of the infrastructure of information and communication technology in their educational systems through defined policies and executive plans. Civil society and domestic organizations still play a main role in providing computers to schools and in putting pressure on governments to take a leading role in this respect. These efforts were thwarted due to lack of communication services and irregular electric supply as well as the unavailability of technical support especially in rural areas. There is a great focus on information and communication technology policies to provide infrastructure to secondary schools and thereafter to elementary schools. However, implementation of these policies and plans requires time and sufficient resources. Reports from Africa indicate that old techniques such as radio, cassettes and printed materials are used to support teachers and students. These techniques are used in Guinea, Togo and Djibouti to provide supplementary curricula for teachers and to run school broadcasting services at secondary schools with a special focus on mathematics and science courses.


In Egypt, there is a network of seven satellite channels connected to receivers at schools and administrative centers of governorates. In addition, there are mobile centers which provide support to elementary, preparatory and secondary schools as well as to technical schools in remote areas. These centers also provide support in fields of languages and general knowledge. There are also specialized channels to upgrade teachers' performance and to work in the field of illiteracy eradication.



Low cost computers are also distributed to schools as part of projects which are increasingly spreading aiming at providing each child with a plastic laptop computer with a colored monitor and a battery which lasts for four hours. These computers use a wireless technology (Wi – Fi) and costs only US\$ 175.00. These projects were implemented in South Africa and Nigeria. The public in most large urban areas in Africa have a varying access to available information and communication technology via internet cafes although that access to large masses of people is not possible in rural areas. Providing access to the internet for all people is considered as a major element of development as per most national policies of information and communication technology in Africa. Establishment of local centers to provide access to computers and the internet may form a common strategy in this respect. Such centers may also include television sets and other services such as printed materials, audio cassettes and digital video discs as well as their playing devices.

It is observed according to the indicators of Arab countries that there is a need for development of infrastructures in general and human resources in particular, especially in engaging these resources in scientific research. In this respect, Al-Musawi (2007) stated that most of holders of different academic qualifications who are working in higher education institutions had attended limited number of training workshops even though they had recognized the importance of training in different fields. It was clear that university degree holders were badly in need of more training than holders of other higher qualifications. In addition, it is essential to increase the degree of awareness of information culture and to reduce the costs of different types of communication. It is observed that the information and communication infrastructure is very poor in the Arab countries, with exception of Gulf countries, when they are compared to other countries of the world. These indicators showed that 28.5% of the total population of the Arab countries used the internet in 2007 compared to 50.8% of the total population of the six Arab Gulf states.

The report which was developed in 2009 by the Supreme Council of Communication and Information Technology of the State of Qatar showed that there were 12.7 computers for each 100 students making this ratio the highest among Arab countries. Preparatory schools, for instant, recorded higher rates than secondary schools with regard to the ratio of computers to students. The ratio of computers to students in using computers for educational purposes was 8.3 computers against each 100 students. 46% of government schools have introduced computers inside classrooms, followed by private schools with 19.6%, and 9% in private Arabic schools. In Qatar, 72.5% of schools are connected to the internet. These schools use local area network (LAN) which can be connected to form local intranet. As to computers which are connected to the internet, the ratio of these computers to students was 13.4 computers against each 100 students. The report of the Telecommunications Regulatory Authority of the United Arab Emirates (2008) shows that all schools of the Emirates have some sort of communication infrastructure. 93% of these schools are connected with internet through ADSL. All government schools have computer laboratories with a ratio of 40 computers in each laboratory. 96% of private schools have computer




laboratories with an average of 36 computers in each laboratory. In the field of training, 95% of teachers received training and 89% of them use information and communication technology for educational purposes, meanwhile 92% of them use this technology for administrative purposes. It was stated that 98% of teachers have mobile telephones, 71% of them use the internet inside schools and 85% have personal electronic mail accounts. On the other hand, 25% of teachers use their schools' e-mail accounts to communicate with their students. The report shows that there are 17 students against each computer in computer laboratories. It also indicates that 83% of students use the internet at their schools, meanwhile 98% of students use the internet either at home, school or other places. In addition, 86% of students use the internet for entertainment and 79% for looking for information. On the other hand, 67% of students have mobile telephones, 98% have computers at home, and 59% have electronic mail accounts. The report states that 97% of students have access to use computers, 87% can use mobile telephones, 57% use digital cameras and 10% can design pages on the internet. The report shows that 56% of schools use radios and 91% use television sets for educational purposes.

Yet, the rates of using technology in Arab countries remain small when compared to international rates. There are several reasons which led to this difference such as the high levels of technological illiteracy, high costs of getting communication technology services, limited number of computers, especially in education sector. Statistics shows that there is a need for support for the levels of indicators of contribution of information in improving national income to improve economic infrastructure and the advantageous investment of information in Arab countries.

Therefore, it will be essential to provide support for gradual and informed transformation towards information society which represents a huge objective which is not considered as an independent process but is connected to social policies and changes which represent new challenges. This means that there is a need to identify the current status as well as the trends of social development and the ability to cope with the requirements of this development. It is essential that the mechanisms of data gathering must be improved and making them available on the internet. It is also important to follow up the development of the society, its response to the technology of information and communication and how it makes use of it in achieving economic development as well as identifying strategies aiming at the social and economic development through providing accurate information at the right time. Such information should be provided to decision makers. The digital gap between the citizens of the same country and between different countries should also be narrowed. It is also necessary to exchange expertise between countries which have good abilities and countries which need support in this field and in the field of major indicators projects to measure information society.

In this respect, the Ministry of Education of the Sultanate of Oman makes big efforts to employ technology in the educational process. These endeavors included training more than 400 teachers on the Intel project and more than 325 teachers on Microsoft applications. They



also included participation of teachers in international contests accompanying the program. The Ministry of Education has organized training courses on the interactive board. Ten teachers have been awarded prizes in the contests accompanying this program. In addition, the Ministry organized international training courses on employment of technology and on press practices in educational fields. 200 teachers participated in these courses. The Ministry is keen on participating in various international technology conferences. It also leads international sessions and projects on technology for the International Education and Resource Network (iEARN) besides the participation of some schools in projects of cultural exchange and mail parcels which belong to the educational resource network and the UNESCO as well as the professional journalist project. More than 100 students have received certificates of participation in the project as recognition for their proficiency in implementing the electronic press in their schools and for their knowledge of different techniques of journalism. Furthermore, the Ministry of Education developed a special website for the Department of Educational Technologies where all educational activities, electronic contents and technological initiatives are displayed. The Ministry has also launched an open contest under the title (The National Contest of Education Technologies) in which excellent students and teachers of all school subjects from all governorates can participate to show their skills in using technology in the educational field. The Ministry has also succeeded in increasing the number of members of the International Education and Resource Network (iEARN) from 500 to 1400 during 2010 and 2011.

Private schools in the Sultanate of Oman made efforts to pay special care to the use of technology in education. Some of these schools have recently introduced the Ms Office Groove program aiming at opening channels of communication between teachers and students as well as channels of collective communication and cooperation between all parties. Through this software, curricula contents, students' homework and activities are displayed. An electronic page was made available on the internet for more communication between teachers and their students. It allows students to upload their electronic files and homework as well as writing their remarks and observations on lessons. Thus, teachers can communicate with their students at any time. The technology which is used in this process is called blgs.

One of the international schools has employed the Accelerated Reader program in its school library so as to encourage students to read and develop their skills. Students sit for placement tests to identify their levels and accordingly they read books which are appropriate to their identified levels. After completing reading books selected they set for tests and answer comprehension questions to move to the next level. Daily reports are sent to parents on their children levels of attainments. The school has also employed the webparents program to communicate with parents. The program is used to send daily reports on children achievements, results and tests. Such initiative was a great help to parents who do not have time to visit the school. Each parent is given a user name and a password through which they can easily communicate with the school.



The Approach and Procedures of the Survey

In this project, the quantitative descriptive approach was used to conduct the survey. It explored the opinions of targeted categories which were related to the theme of the study. Questionnaires and interviews were used to collect information. Then data was analyzed to reach conclusions and recommendations.

Four online questionnaires were developed for this project. Each questionnaire targeted a category so as to identify the status of using technology in education. The project was implemented through three stages:

1. Data entry: the targeted categories entered their data according to electronic systems provided for them.
2. Data collection: Data were collected from all systems after the entry stage was over and saved in the indicators' system.
3. Data analysis: statistics equations were used to find out the required indicators.

The Survey Population

It included three categories. These were government schools, private schools and international schools as one group, the Islamic institutes and the Technical College of the Royal Guard. The survey targeted all teaching, administrative and technical staff in all educational regions as well as all students of grade one to twelve in all governorates. Teachers completed questionnaires of grade one to seven, meanwhile grade eight to twelve students completed their questionnaires by themselves.

The respondents to the questionnaires were 1040 public school where 49273 members of the teaching and administrative staff answered the items plus 505633 grade one to twelve students of both sexes. On the other hand, 181 private schools responded to the questionnaires with 2512 teachers and administrators and 30369 students of grade one to twelve. Twenty seven international schools responded where 1449 teachers and administrators and 29872 grade one to twelve students answered the questionnaires items. In the four Islamic institutes, 71 teachers and administrators as well as 570 grade one to twelve students responded to the questionnaires. At the Technical College of the Royal Guard, 62 members of the administrative and teaching staff and 132 students responded to the items. This large number of respondents is due to the fact that this project is of a comprehensive national nature which helped very much in achieving this high rate of response. In addition, the existence of the educational portal of the Sultanate of Oman has also helped in covering all components of the survey population. The following table shows the survey population and the respondents:

Table (1)
The Information and Communication Technology
in the Educational Sector Survey Population and Respondents

Type of School	Categories	Population	Respondents
Government schools	Schools	1040	1040
	Staff	53000	49273
	Grade 1-12 students	525285	505633
Private schools	Schools	220	181
	Staff	5507	2512
	Grade 1-12 students	34075	30369
International schools	Schools	35	27
	Staff	1853	1449
	Grade 1-12 students	43347	29872
Islamic Sciences Institutes	Institutes	4	4
	Staff	83	71
	Grade 1-12 students	570	570
Royal Guard College	Colleges	1	1
	Staff	62	62
	Grade 1-12 students	132	132

Indicators of the Survey of Information and Communications Technology in the Education Sector

As part of the endeavors of the Ministry of Education to implement the survey project , the central group responsible for conducting the survey developed a draft of indicators based on international indicators approved by international organizations such as the United Nations, the World Bank, the UNESCO etc.... as well as according to the requirements of the Ministry of Education and its future vision. Previous studies and literature in this field were also taken into consideration. The two consultants of the project have edited and revised the indicators and phrased then in their final form.

Tools of the Survey

Four survey questionnaires were developed (electronic forms) for each of the targeted categories aiming at identifying the actual status of using information and communication technology in education. The consultants of the project revised and edited the questionnaires to assure their validity. They were then translated into English for implementation in private and international schools. The final form of these questionnaires is as follows:

1. The school questionnaires are completed by committees headed by school headmasters.
2. Teaching and administrative staff questionnaires are completed by administrators, teachers and technicians.
3. Grade one to seven students' questionnaires are completed by class teachers.
4. Grade eight to twelve students' questionnaires are completed by students themselves.

In addition to the paper editions of the questionnaires, online editions were developed by the Directorate General of Information Technology. Rules of verification and accuracy for assurance of quality of the data were implemented and the questionnaires were uploaded on the educational portal of the Ministry of Education.


Validity and Constancy of Questionnaires

Questionnaires passed through several stages of technical analysis, revision and verification by the central group of the survey and the consultants to conform them to the indicators and to clarify ambiguous items as well as to check their validity and consistency with the software. The online questionnaires were then trialed, after being approved, to decide their suitability to be run online. Many parts of them were accordingly reprogrammed.

The consultants verified the validity of the questionnaires in the light of the issues that to be measured by each questionnaire for each category guided by international reports and previous studies and literature. Their consistency was also assured by implementing them on samples in schools many times.

The Method of Conducting the Survey

The field survey was implemented starting with the development of questionnaires as well as identifying the survey population and the targeted categories under the supervision of the central group of the survey and the consultants of the project. By the development of the training guide, the targeted sample of the study was identified in all educational regions. The implementation



took place in four schools in each educational region. The chosen schools were representing all types of schools and systems of education in each region, including males and females. This was followed by making necessary modifications to the questionnaires, data , statistical indicators and the training guide. The consultants of the project then wrote a report on the trial edition of the survey included results, recommendations and implications.

When it was assured that the electronic system was ready for use, a team was formed of all parties involved in the project including the central group of the survey, the local groups and the schools groups in each educational region. The central group took all necessary measures to assure a good implementation of the survey. The field work started and it covered the following aspects:

1. Making the questionnaires available through the educational portal.
2. Field visits to follow up the work in the survey.
3. Collecting, processing and analyzing data.
4. Concluding results.
5. Writing a final report on the project.
6. Presenting results and indicators to the team responsible for development of the document of indicators of information and communication technology in education.

Organizing the Field Work

Field work was organized under the supervision of the Ministry of Education as per the followings:

1. The team responsible for the development of the document of indicators of information and communication technology in education under the chairmanship of HE the Undersecretary of Planning and Human Resources Development supervised the project and was continuously informed of the latest developments. The project was launched in a special ceremony which was attended by local media. Required budget was allocated.
2. The central group of the project, which included the Deputy Director General of planning and Quality Control as head of the group, the Director of Information Systems Department, the Director of Statistics and Indicators Department, the Director of the Budget Department, the Deputy Director of Statistics and Indicators Department, the Deputy Director of the Office of International Schools, the Deputy Director of Information Systems Department for Documents Management and Digital Services, the Quality Specifications Section Chief, systems supervisor, a specialist from the Ministry of National Economy and projects specialist from Information Technology Authority, carried out many tasks. The group identified schools and their technical facilities, human and other resources required for the project. It also participated in the development of indicators, questionnaires and the appropriate items



to be distributed to the media organs. The group conducted press interviews with persons in charge of the project and put an announcement of it on the educational portal and the educational forum of the Ministry of Education as well as through short message service on mobile telephones. It developed specifications of the logo of the project and announced a contest of the development of such a logo, and approved the winning logo. The group designed a program of field visits associated to promotion of the project in coordination with regional directorates of education as well as private and international schools in addition to other administrative matters.

3. The consultants of the project have supervised over the technical aspects of the project and evaluated the stages of its development carried out by the central team. They studied all human and other resources requirements needed for the success of the project. They reviewed paper and online questionnaires which were designed to collect survey data so as to check such data and write relevant observations and remarks. The consultants developed reports, guides and indicators and they analyzed data and developed indicators and eventually wrote the final report.
4. The Directorate General of Information Technology designed online questionnaires and applied their verification rules within the educational portal of the Ministry of Education and the school management program. It also provided technical support to the online questionnaires.
5. Regional groups of the survey which included the Director of Planning and Educational Requirements, Deputy Director of Information Technology, Section Chief of Statistics and Indicators and Section Chief of the Educational Portal provided the administrative and technical staff at the regions and schools. They supervised over training courses for local teams which included educational portal supervisors, school head teachers and data base specialists at schools. The training courses covered data entry and its collection from schools and taking required actions and measures in this respect.
6. School Teams which included headmasters and headmistresses, data base specialists and information technology teachers encouraged administrators, teachers and students to be more interested in the survey project and to work as one collective group as well as to get acquainted with training guide before conducting the survey. Data base specialists and information technology teacher supervised over the training of teachers and students on mechanisms of data entry and collection from schools, forwarding the data to educational directorates at the regions and taking necessary actions.
7. The actual survey was implemented during the period starting Wednesday 31st till Thursday the 8th of September 2010 to cover schools as well as teaching, administrative and technical staff. As from Saturday the 6th of October to Wednesday the 27th of October 2010, the survey was conducted to students in grade one to seven and grade eight to twelve.


Exploratory Studies

Two periods were specified during the months of August and September to carry out exploratory studies when field tests were conducted through two samples of questionnaires. The first field test included questionnaires of schools as well as questionnaires of administrative and teaching staff and it was conducted on the 29th and 30th of August 2010. The second field test included questionnaires of students of junior and senior grades and it was conducted the 25th and 26th of September 2010. Two days only were decided for both surveys. The sample included eight regions of which four schools representing all systems and types of education were chosen from each region. The school questionnaires covered 32 schools; meanwhile the teaching, administrative and technical staff questionnaires covered 95 persons (32 administrators and technicians, 63 teachers) in addition to 717 male and female students responded to the questionnaires. According to the report of the project consultants, the responses were encouraging and reflected accuracy and good quality of preparations as well as the efficiency of coordination between all parties involved in the projects including senior staff of the Ministry of Education, consultants, administrators and technicians. Such outcomes encouraged the central team to recommend the implementation of the survey.

Training

In order to obtain the best and most valid results, the central team and the regional teams conducted extensive training sessions at all levels. These sessions included: development of training plan and mechanisms, development of training guide, development of a usage guide and publish it electronically and make it available to all categories. Training planning included development of an orientation presentation, development of presentation on required indicators and development of training materials. Training sessions at the central level involved all section chiefs of information technology and educational portal in the regions of a total of sixty persons. Training workshops were conducted in cooperation with the College of Education of Sultan Qaboos University which provided rooms for training.

The first stage of training included informing trainees of the importance of the objectives and expectations of the survey. They were also informed of the different items and contents of the questionnaires. In the second stage, the electronic system of filing the questionnaires was introduced as well as training trainers of the regions so as to transfer training to their regions. This stage also focused on how the targeted categories can fill electronically the questionnaires. In the third stage, feedback on training sessions was obtained. The feedback contributed to modification of phrasing of some items and introducing additions and changes to the proposed training guide aiming at its refining and editing. Objectives, mechanisms and methods of training as well as how to use the training guide were explained during training workshops which lasted for two days. Trainees were also informed of how to seek support and consultation. Training workshops lasted



for three days were organized in Muscat for regional trainers. These workshops were followed by other workshops at the regions attended by school teams. Then, administrative and teaching staff attended training sessions at their schools. An orientation meeting was held to directors general of the regions under the chairmanship of His Excellency the Undersecretary of Planning and Human Resources Development. The meeting aimed at informing the participants of the importance of the project and its implications so as to assure that all facilities are made available to grant its success.

Mechanism of Data Collection

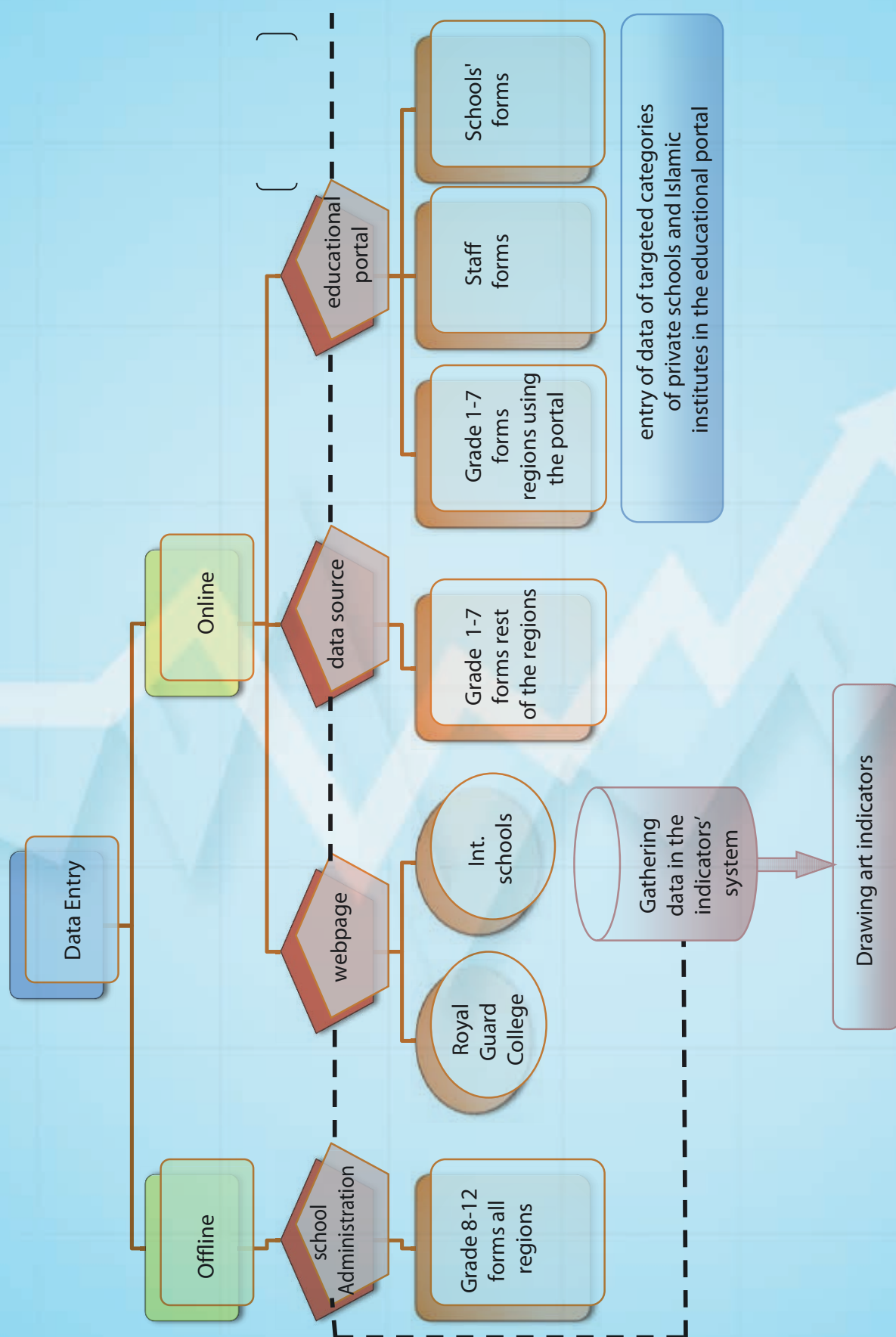
Data was collected during the survey period according to the following steps:

- Uploading questionnaires on the educational portal to be filled electronically.
- Providing access to online questionnaires to all schools as well as to administrative, teaching and technical staff to respond to the questionnaires items.
- Following up the flow of data and the process of work.
- Terminating access to questionnaires by the end of the specified period for each questionnaire.
- Collecting data in the main data base at the Ministry of Education and then displaying it in Excel format to be send to consultants.

Data Flow

Figure (1) explains the flow of data during the field survey period. It is clear from the figure that entry of data depended on two methods. The first method was online through the educational portal of the Sultanate of Oman, the data resource mechanisms as well as the web pages of international schools and the Technical College of the Royal Guard. All educational regions directorates adopted an offline method in filling in junior grades students' questionnaires using the school management programs. The diversity of data collection methods is due to logistic reasons related to available electronic infrastructure at schools. That process was followed by collecting data from different systems in use. Indicators were then concluded.

A diagram showing the mechanism of data flow of the targeted categories



Verification of Data

The following measures were taken to confirm correctness, accuracy and safety of data:

1. Following up of data flow through the system.
2. Identifying absentees of the targeted categories and set up a plan to obtain required data.
3. Developing daily reports on the flow of data of the questionnaires.
4. Emergent intervention to address unexpected challenges.

The following supportive measures were also taken:

1. Identifying remarks made by schools regarding implementation of questionnaires during the trail survey period. The remarks were useful before carrying out the final field survey when basic data of schools, grades and classrooms were revised and checked.
2. Organizing the mechanism of responding to the items of questionnaires by targeted categories.
3. Making field visits during the survey implementation period.
4. Opening a hot phone line between the consultants of the project and persons in charge at the center.
5. Giving answers to questions raised by targeted categories through different communication tools.
6. Provision of all requirements to operate online questionnaires via the educational portal and the school management program.
7. Giving orientation sessions to targeted categories and provide computer halls and other requirements to conduct the survey.

Period of Conducting the Survey

The survey for all categories was conducting according to the following periods:

- The questionnaire of public schools and administrative and teaching staff as from August 31st to September 8th 2010.
- Grade 1-7 public schools students questionnaire as from October 6th to October 13th 2010.
- Grade 8-12 public schools students questionnaire as from October 6th to October 27th 2010.
- All questionnaires of private schools students, international schools, Islamic institutes and the College of the Royal Guard as from October 16th to November 15th 2010.

Statistical Analysis

The statistical package of social studies and Excel in statistical analysis to find out indicators. In general, the percentage of the indicator was concluded using the following formula:

Indicator =	Number of schools/administrative and teaching staff / number of students	X 100
	Total number of schools/ or administrative and teaching staff / or number of students	

Outcomes of the Survey

This part of the report includes detailed display of information and communication indicators in the education sector in the Sultanate of Oman in 2010. The outcomes shall be displayed in five strands. The first strand shall include the outcomes of government schools, the second shall include the outcomes of private schools, the third shall cover the outcomes of international schools, the fourth is for the outcomes of Islamic institutes and the fifth shall include the outcomes of the College of the Royal Guard.

First: Outcomes of Government Schools

1.1. School Indicators

1.1.1. General indicators of schools

Table (2) shows schools indicators as per the percentages of availability of technology in government schools in the Sultanate of Oman.

General Indicators of Government Schools in Oman (n=1040)

No.	Indicator		Percentage
1	Percentage of schools which have fixed telephone line or mobile phone to the total number of schools		94.2%
2	Percentage of schools which have fixed telephone line		82.5%
3	Percentage of schools which have mobile phone		11.7%
4	Percentage of schools which have fixed telephone line and mobile phone to the total number of schools		1.2%
5	Percentage of schools which have no communication means		5.8%
6	Percentage of schools which have web sites on the internet		3%
7	Percentage of schools which have web sites on the internet as per the services provided by the web site	7-1 school plan	16.1%
		7-2 data	41.9%
		7-3 statistics	35.5%
		7-4 lessons	83.9%
		7-5 information	29.0%
		7-6 others	41.9%
8	Percentage of schools which use the educational portal of Oman		100%
9	Percentage of schools which do not use the educational portal of Oman for certain reasons		0%
10	Percentage of schools which use the school management program		99.9%

No.	Indicator		Percentage
11	Percentage of schools which do not use the school management program due to the fact that this program is not available to the total number of schools which do not use the program		0.1%
12	Percentage of schools which use computerized programs in processing administrative practices other than the school management program or the educational portal of Oman		3.4%
13	Ratio of computers/school		5.46
14	Ratio of computers to schools which have computers		5.46
15	Ratio of computers used for administrative purposes to the total number of schools which have computers		5
16	Ratio of computers used for educational purposes to the total number of schools which have computers		3.41
17	Percentage of computers used for administrative purposes to the total number of computers		10.7%
18	Percentage of computers used for educational purposes to the total number of computers		89.3%
19	Percentage of schools which have learning resource centers		89.2%
20	Percentage of schools which have computer laboratories		68.8%
21	Percentage of schools which have computers inside classrooms		8.1%
22	Percentage of schools which have periodical maintenance to their computers		95.2%
23	Percentage of schools which receive instructions from any source on how to use computers		83.5%
24	Percentage of schools which are connected to the internet		86.7%
25	Percentage of schools which are not connected to the internet		13.3%
26	Percentage of schools which are not connected to the internet according to certain reasons	26-1 no internet coverage	97.8%
		26-2 social and cultural reasons	0%
		26-3 high prices of equipments and services	2.2%
		26-4 lack of knowledge/skills	0%
		26-5 language barrier	0%
		26-6 no need for the internet	0%

No.	Indicator		Percentage
27	Percentage of schools connected to the internet according to connection service	27-1 ISDN	3.4%
		27-2 DSL	54.6%
		27-3 Cable Modem	11.9%
		27-4 Mobile Broadband	25.6%
		27-5 Other	4.5%
28	Percentage of computers connected to the internet		40%
29	Ratio student/computer		8.11
30	Percentage of schools which have intranet		84.5%
31	Percentage of schools which have radio (one or more) used for educational purposes		98.6%
32	Percentage of schools which have televisions (one or more) used for educational purposes		68.9%
33	Ratio student/computer in computer laboratories		1
34	Ratio student/computer in learning resource centers		2
35	Percentage of schools which provide training courses/workshops to administrative and teaching staff in the field of information and communication technology		91.0%

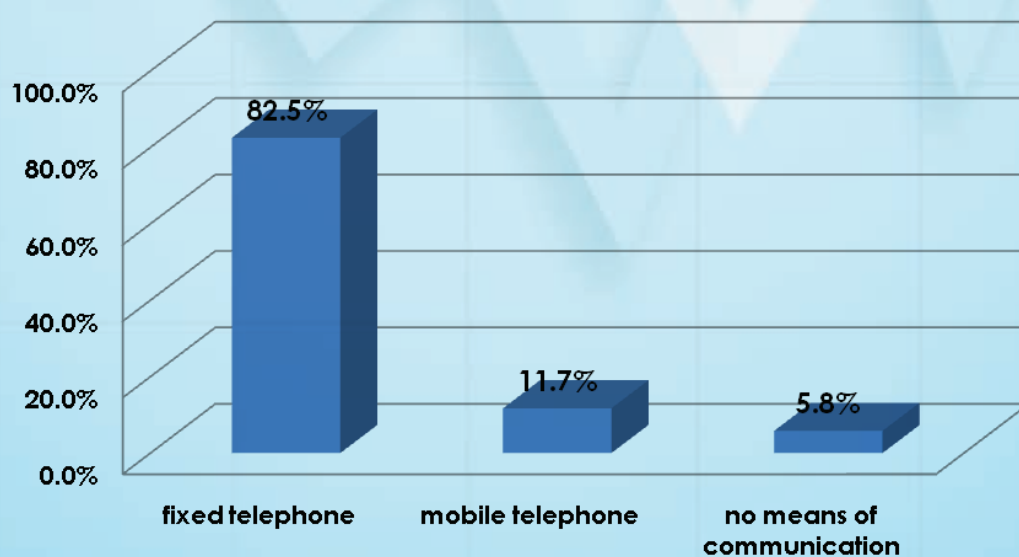


Figure (1) : Graph representing percentage of government schools according to communication means

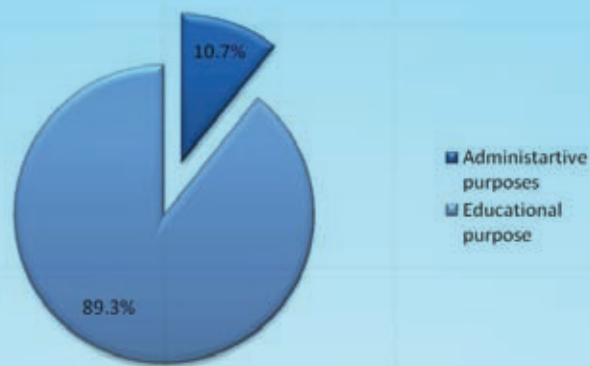


Figure (2) : A pie chart showing the percentage of computers used in government schools according to the purposes of their use

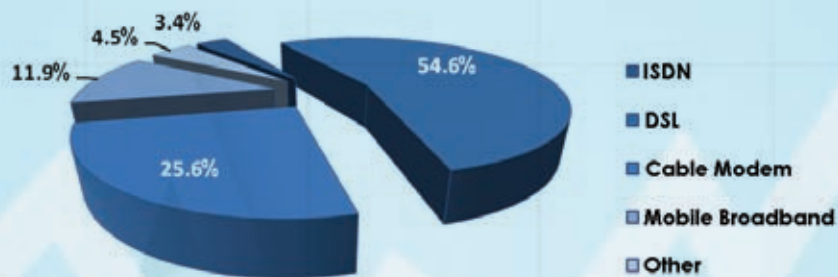


Figure (3): The percentage of government schools connected to the internet according to communication service

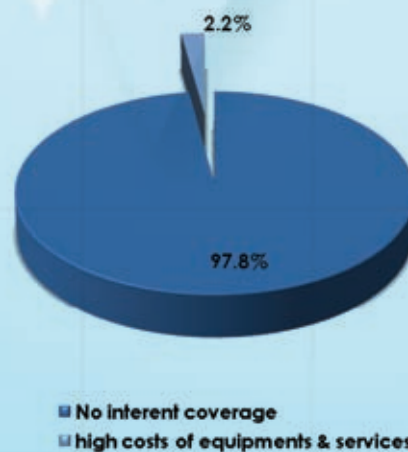
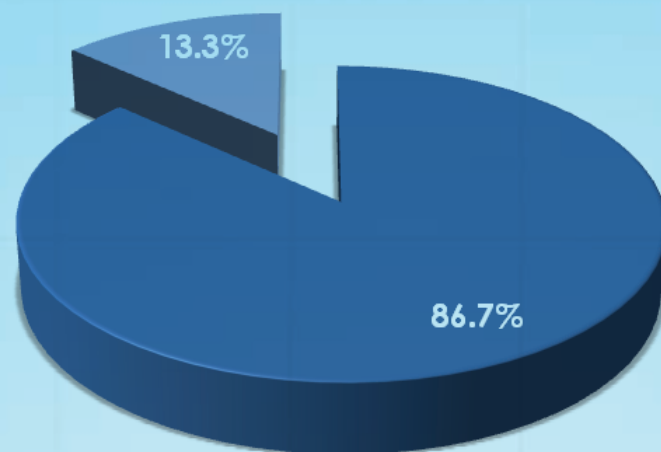


Figure (4) : The percentage of government schools which are not connected to the internet according to reason of not being connected



■ connectd ■ not connectd

Figure (5) : A pie chart showing the percentage of government schools connected to the Internet

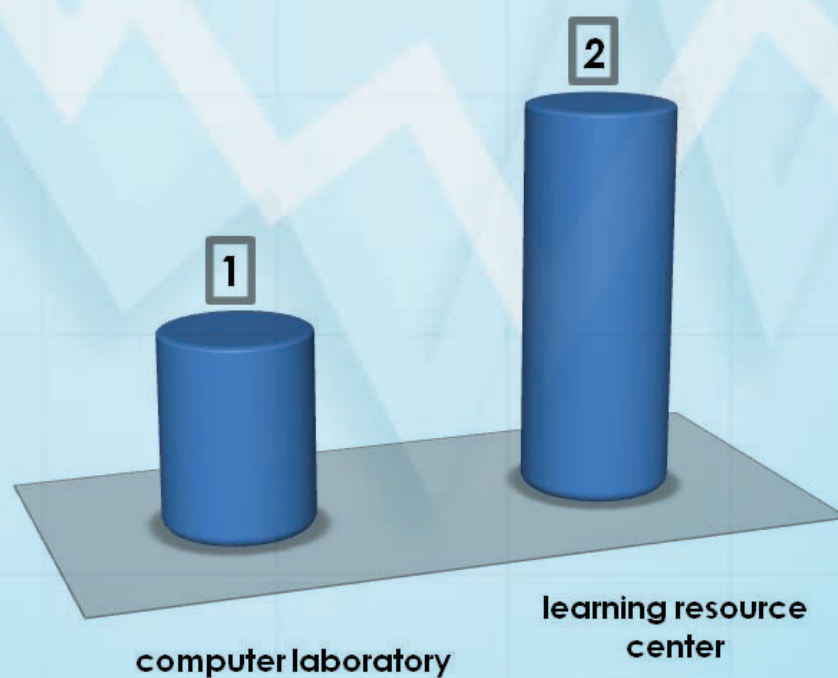


Figure (6): Ratio of students to computers in learning resource centers and computer laboratories in government schools

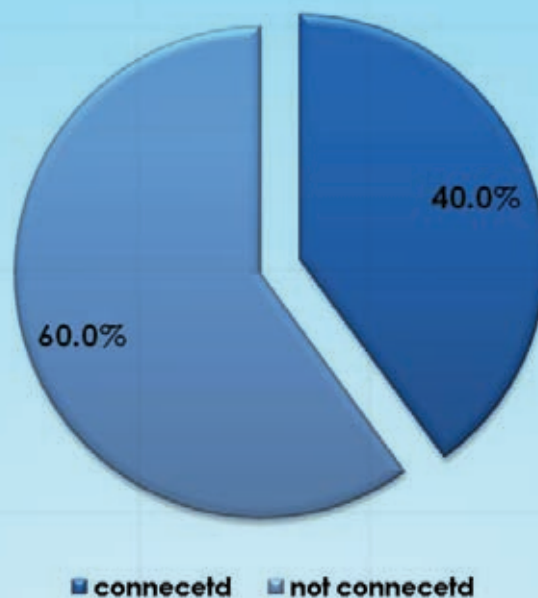


Figure (7): A pie chart showing the percentage of computers in government schools connected to Internet

It is clear from table (2) that the percentages included in the table revive a degree of serenity with regard to the following aspects at schools:

- Availability of technology:** Some indicators are satisfying such as the educational portal, the school management program, learning resource centers, intranets, internet, communication services, computer laboratories, computers and fixed telephones. In addition, all schools are supplied with electric power. Yet, the Sultanate of Oman has to make endeavors to improve student/computer ratio in schools (8.11) which is considered lower than international ratios. The schools of the Sultanate of Oman have to set up their own websites on the internet since the current percentage of schools which have their own websites of 3% is lower than international standards as stated in New Zealand indicators (Johnson et al 2009). It seems that the Ministry of Education is actually and regularly planning to gradually provide in the near future the educational regions and their excellent schools with well-designed websites on the educational portal. There is also a need to increase the number of computers which are connected to the internet since their percentage is not exceeding 40% of the total number of computers at schools at present. This percentage is less than the percentage indicated by international and Gulf indicators. On the other hand, the percentage of schools which have computers inside classrooms is only 8.1% and thus the Sultanate is in need of making efforts to increase this percentage through making use of modern technology facilities such as servers and wireless networks. It is recommended that more care should be paid to connecting schools, which are not yet connected, to the internet since the current percentage of these schools is only 13.3%, a fact that cannot be passed over.

- **Use of technology:** Using radios in schools is reflected by a high percentage of 98.6%, meanwhile using television sets is relatively limited with a 68.9%. Using computers for educational purposes is only 41.3% which is below required levels.
- **Maintenance:** It is clear that maintenance and instructions received by schools in the Sultanate of Oman are of high standards. This is conforming with international indicators as it is stated by in the report (Johnson et al., 2009) and the report of the Education and Skills Department (DfES, 2003).
- **Training on technology:** The high percentage of 91% indicates that schools are tending towards organizing local training workshops for their teachers on the uses of technology. This intention comes in agreement with international indicators (DfEs, 2003) (Johnson et al., 2009) and the Gulf indicators. The same was mentioned in the report of the Telecommunications Regulatory Authority (TRA) of the United Arab Emirates (2008).

1.1.2. Indicators of schools according to type

Table (3) shows government schools' indicators according to percentages of availability of technology in these schools and as per type of education variable.

No.	Indicator		General 76	Basic 589	Combined 375
1	Percentage of schools which have fixed telephone line or mobile phone to the total number of schools		100%	97.8%	87.4%
2	Percentage of schools which have fixed telephone line		72.4%	92.2%	69.3%
3	Percentage of schools which have mobile phone		27.6%	5.6%	18.15
4	Percentage of schools which have fixed telephone line and mobile phone to the total number of schools		0.9%	1.5%	1.2%
5	Percentage of schools which have no communication means		0.0%	2.2%	12.6%
6	Percentage of schools which have web sites on the internet		1.3%	3.2%	2.9%
7	Percentage of schools which have web sites on the internet as per the services provided by the web site	7-1 school plan	0.0%	26.3%	0.0%
		7-2 data	0.0%	57.9%	18.2%
		7-3 statistics	0.0%	47.4%	18.2%
		7-4 lessons	100%	84.2%	81.8%
		7-5 information	0.0%	31.6%	27.3%
		7-6 others	0.0%	36.9	54.6%

No.	Indicator	General 76	Basic 589	Combined 375
8	Percentage of schools which use the educational portal of Oman	100%	100%	100%
9	Percentage of schools which do not use the educational portal of Oman for certain reasons	0.0%	0.0%	0.0%
10	Percentage of schools which use the school management program	100%	100%	99.7%
11	Percentage of schools which do not use the school management due to the fact that this program is not available of the total number of schools which do not use the program	0.0%	0.0%	0.03%
12	Percentage of schools which use computerized programs in processing administrative practices other than the school management program or the educational portal of Oman	3.9%	3.1%	3.7%
13	Ratio of computers/school	19.1	50.4	46
14	Ratio of computers to schools which have computers	19.1	50.4	46
15	Ratio of computers used for administrative purposes to the total number of schools which have computers	4.8	5.4	4.4
16	Ratio of computers used for educational purposes to the total number of schools which have computers	18.2	45	41.6
17	Percentage of computers used for administrative purposes to the total number of computers	25.2%	10.7%	9.6%
18	Percentage of computers used for educational purposes to the total number of computers	74.8%	89.3%	90.4%
19	Percentage of schools which have learning resource centers	19.7%	98.6%	87.8%
20	Percentage of schools which have computer laboratories	35.5%	61.3%	87.5%
21	Percentage of schools which have computers inside classrooms	5.3%	10.9%	6.7%
22	Percentage of schools which have periodical maintenance to their computers	93.4%	95.9%	94.4%
23	Percentage of schools which receive instructions from any source on how to use computers	80.3%	86.9%	78.7%
24	Percentage of schools which are connected to the internet	86.8%	95.1%	73.6%
25	Percentage of schools which are not connected to the internet	13.2%	4.9%	26.4%

No.	Indicator		General 76	Basic 589	Combined 375
26	Percentage of schools which are not connected to the internet according to certain reasons	26-1 no internet coverage	100%	96.6%	99%
		26-2 social and cultural reasons	0.0%	0.0%	0.0%
		26-3 high prices of equipments and services	20%	6.9%	9.1%
		26-4 lack of knowledge/skills	0.0%	0.0%	0.0%
		26-5 language barrier	0.0%	0.0%	0.0%
		26-6 no need for the internet	0.0%	0.0%	0.0%
27	Percentage of schools connected to the internet according to connection service	27-1 ISDN	1.5%	3.9%	1.5%
		27-2 DSL	21.1%	62.5%	26.1%
		27-3 Cable Modem	15.2%	8.8%	13.1%
		27-4 Mobile Broadband	39.4%	16.4%	31.2%
		27-5 Other	22.7%	8.4%	28.1%
28	Percentage of computers connected to the internet		20.1%	52.4%	20.3%
29	Ratio student/computer		17.1	11.9	8.5
30	Percentage of schools which have intranet		67.1%	92.7%	75.2%
31	Percentage of schools which have radio (one or more) used for educational purposes		92.1%	99.2%	97.6
32	Percentage of schools which have televisions (one or more) used for educational purposes		59.2%	70.1%	69.1%
33	Ratio student/computer in computer laboratories		1	1	1
34	Ratio student/computer in learning resource centers		2	2	2
35	Percentage of schools which provide training courses/workshops to administrative and teaching staff in the field of information and communication technology		85.5%	93%	88.8%

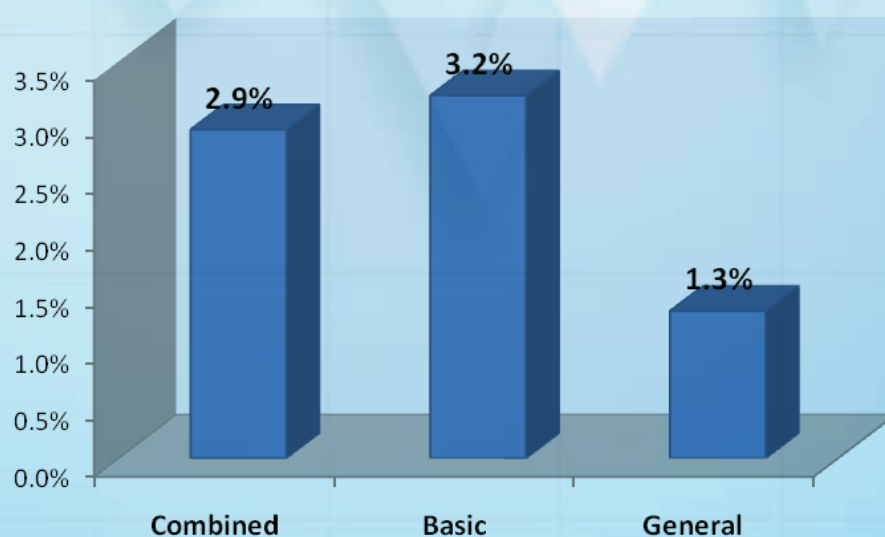


Figure (8) : Graph representing percentage of schools which have websites on the Internet to the total number of government schools

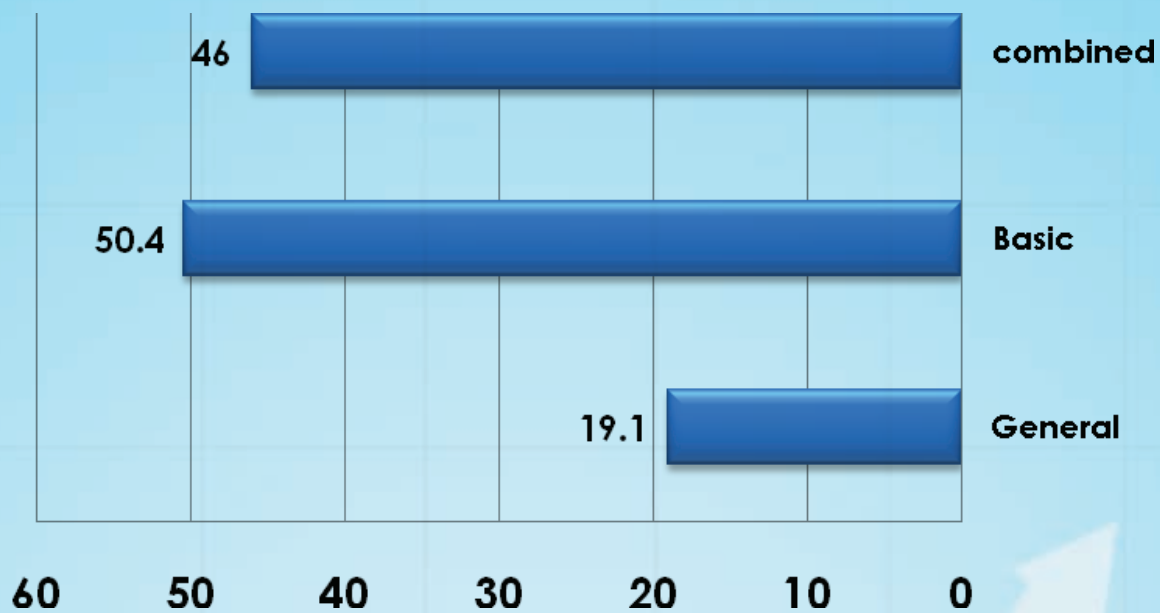


Figure (9): Graph representing ratio of computers/school in government schools according to type of education

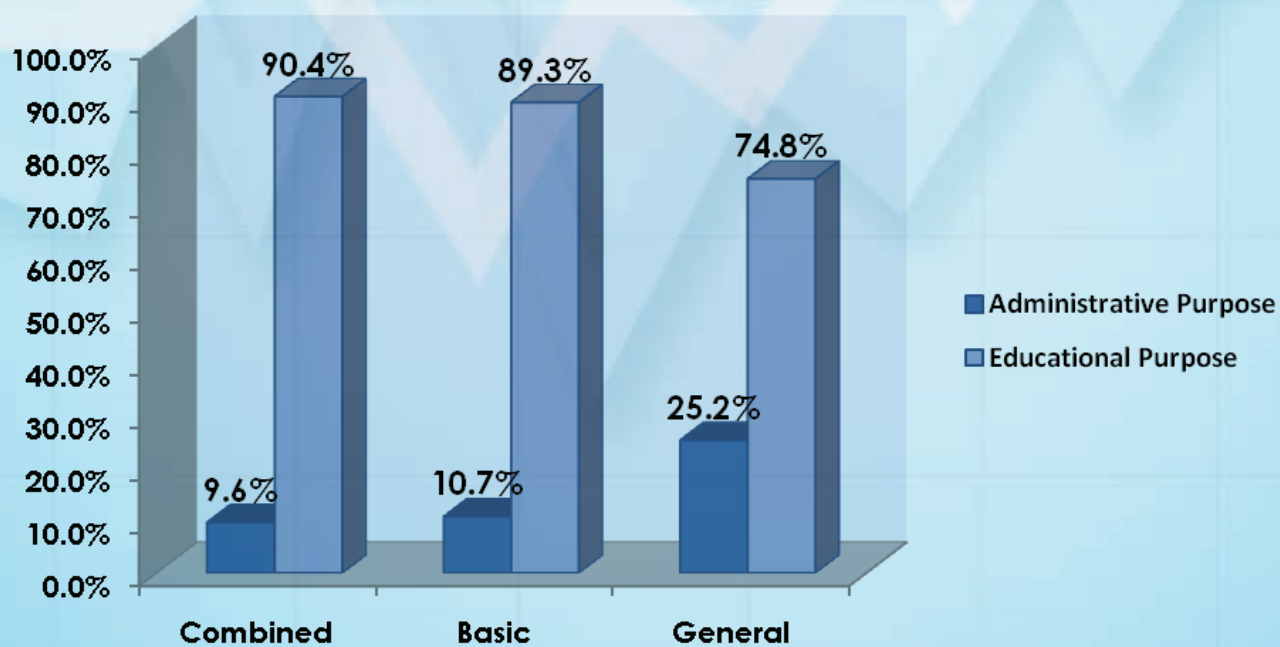


Figure (10): Representing percentage of computers used in government schools according to purposes of usage

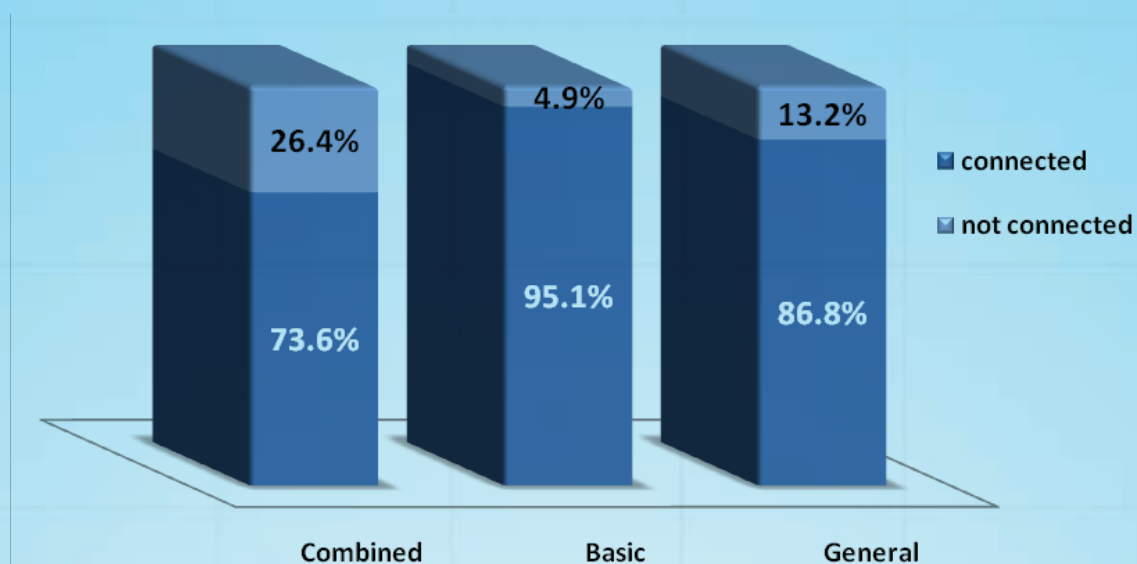


Figure (11): Graph representing percentage of government schools connected to the internet to the total number of schools

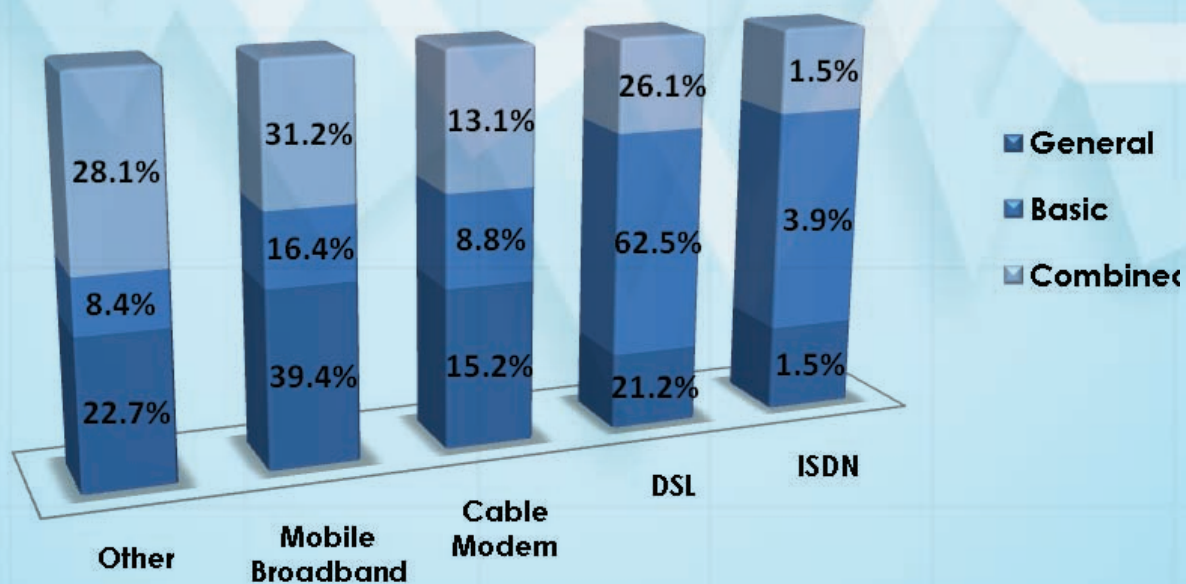


Figure (12): Graph representing percentage of government schools connected to the internet according to type of connection service

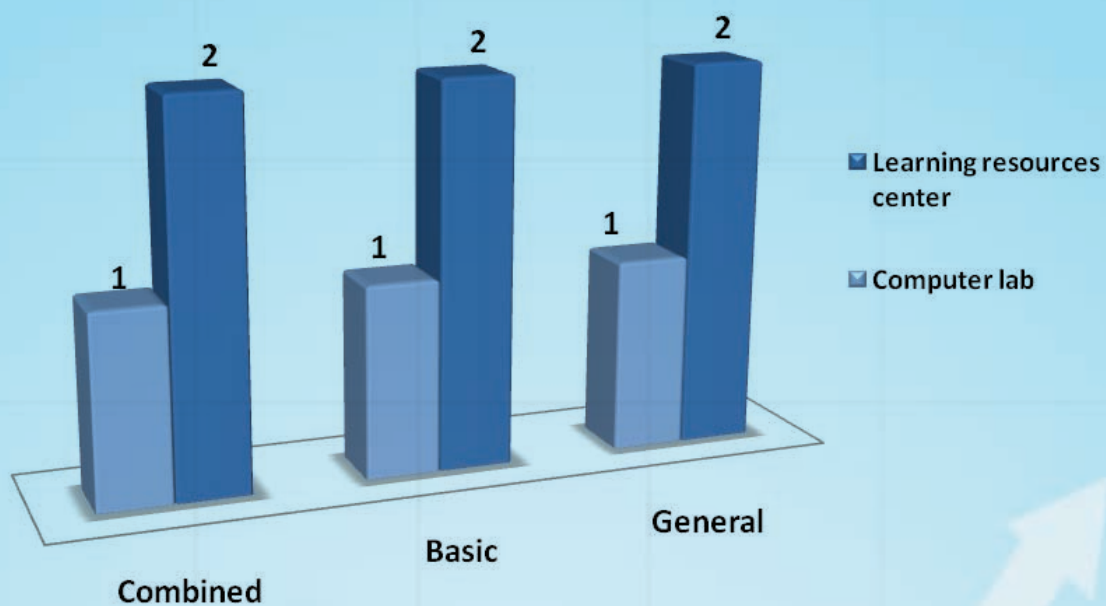


Figure (13): Graph representing ratio of student/computer in computer laboratories and learning resource centers in government schools according to type of education

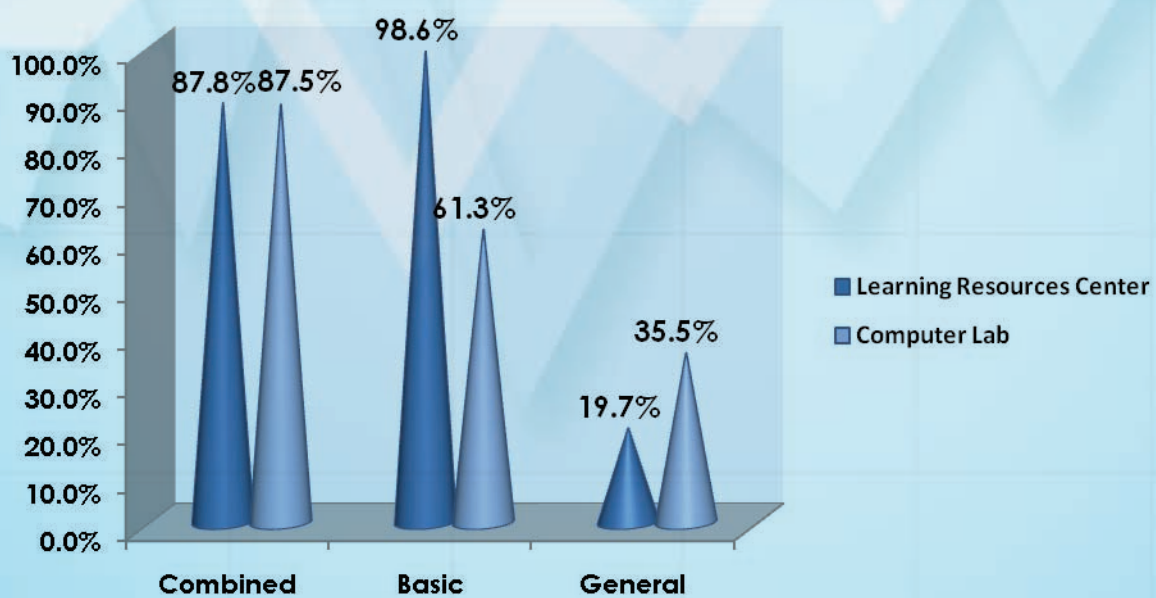


Figure (14) : Graph representing percentage of government schools which have computer laboratories and learning resource centers

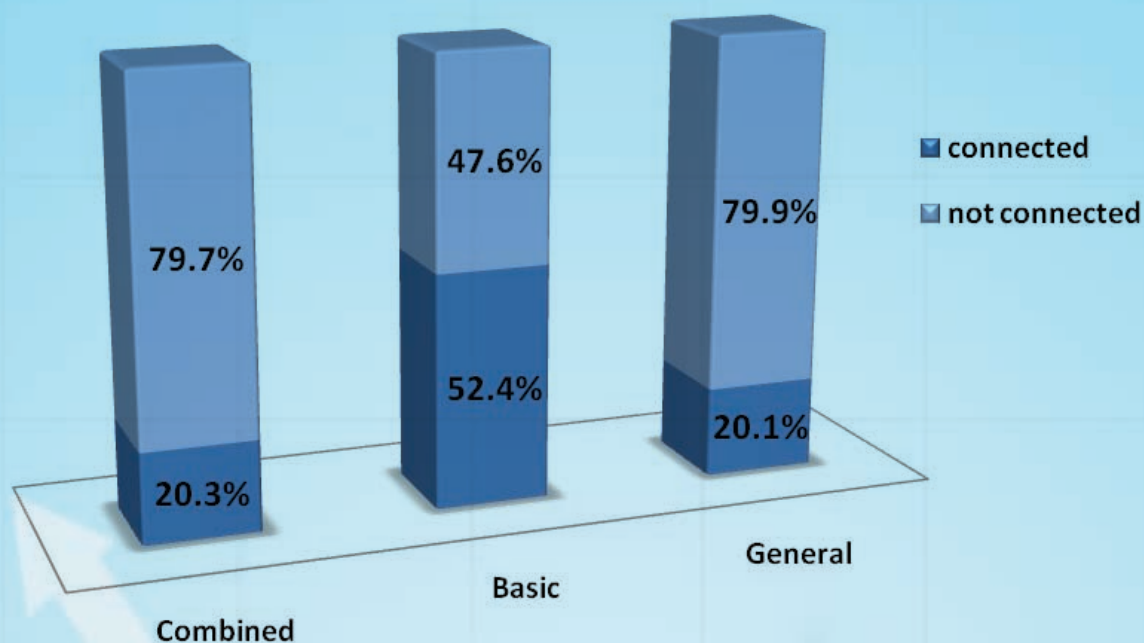


Figure (15): Graph representing percentage of computers connected to the internet to the total number of computers available in government schools

Indicators in table (3) confirm facts previously concluded. It is again, clear that the percentage of schools which have websites is very low in all types of education. The percentage of computers per school in general education is also low. This type of education needs to be provided with more computers. However, the percentage of schools which have computers connected to the internet in the other two types of education does not exceed, in best circumstances, 50% which means half of schools. This matter requires that more attention must be paid to provide more schools with computers. There is also a need to reduce the ratio of students/computer in learning resource centers. It is observed that low percentages generally occur in general education, and they may equalize sometimes with the percentages recorded in the other two types of education.

1.1.3. Indicators of government schools according to gender

Table (4) below shows indicators of schools as per percentages of technology recorded for government schools according to gender

Table (4)
Indicators of government schools according to gender

No.	Indicator		Males 473	Females 201	Combined 492
1	Percentage of schools which have fixed telephone line or mobile phone to the total number of schools		98.6%	99.5%	89.1%
2	Percentage of schools which have fixed telephone line		88.8%	95.5%	72.8%
3	Percentage of schools which have mobile phone		9.8%	4%	16.3%
4	Percentage of schools which have fixed telephone line and mobile phone to the total number of schools		0%	1.2%	1.3%
5	Percentage of schools which have no communication means		1.4%	0.5%	10.9%
6	Percentage of schools which have web sites on the internet		4.6%	3%	1.8%
7	Percentage of schools which have web sites on the internet as per the services provided by the web site	7-1 school plan	25%	16.7%	0%
		7-2 data	56.3%	50%	11.1%
		7-3 statistics	43.8%	33.3%	22.2%
		7-4 lessons	93.8%	66.7%	77.8%
		7-5 information	37.5%	16.7%	22.2%
		7-6 others	37.5%	66.7%	33.3%
8	Percentage of schools which use the educational portal of Oman		100%	100%	100%
9	Percentage of schools which do not use the educational portal of Oman for certain reasons		0.0%	0.0%	0.0%
10	Percentage of schools which use the school management program		100%	100%	98.8%
11	Percentage of schools which do not use the school management due to the fact that this program is not available of the total number of schools which do not use the program		0.0%	0.0%	0.02%
12	Percentage of schools which use computerized programs in processing administrative practices other than the school management program or the educational portal of Oman		4.3%	2%	3.3%



No.	Indicator		Males 473	Females 201	Combined 492
13	Ratio of computers/school		54.9%	70.6%	30.8%
14	Ratio of computers to schools which have computers		54.9%	70.6%	30.8%
15	Ratio of computers used for administrative purposes to the total number of schools which have computers		5.1	6.1	4.5
16	Ratio of computers used for educational purposes to the total number of schools which have computers		49.7	64.5	26.3
17	Percentage of computers used for administrative purposes to the total number of computers		9.4%	8.7%	14.5%
18	Percentage of computers used for educational purposes to the total number of computers		91.6%	91.3%	85.5%
19	Percentage of schools which have learning resource centers		83.9%	96.5%	89.9%
20	Percentage of schools which have computer laboratories		88.5%	96.5%	43.7%
21	Percentage of schools which have computers inside classrooms		3.2%	10%	13.2%
22	Percentage of schools which have periodical maintenance to their computers		95.1%	94.5%	95.5%
23	Percentage of schools which receive instructions from any source on how to use computers		78.1%	90%	84.6%
24	Percentage of schools which are connected to the internet		88.5%	95.5%	81.9%
25	Percentage of schools which are not connected to the internet		11.5%	4.5%	18.1%
26	Percentage of schools which are not connected to the internet according to certain reasons	26-1 no internet coverage	97.5%	100%	98.9%
		26-2 social and cultural reasons	0%	0%	0%
		26-3 high prices of equipments and services	0.8%	0%	11.2%
		26-4 lack of knowledge/skills	0%	0%	0%
		26-5 language barrier	0%	0%	0%
		26-6 no need for the internet	0%	0%	0%
27	Percentage of schools connected to the internet according to connection service	27-1 ISDN	0.3%	5.2%	0.2%
		27-2 DSL	51.1%	58.9%	41.2%
		27-3 Cable Modem	0.8%	10.9%	12.7%
		27-4 Mobile Broadband	23.8%	15.1%	25.3%
		27-5 Other	24%	9.9%	21.6%

No.	Indicator	Males 473	Females 201	Combined 492
28	Percentage of computers connected to the internet	37.3%	54.7%	29.6%
29	Ratio student/computer	9.7	10.1	13.1
30	Percentage of schools which have intranet	86.7%	90.5%	80.5%
31	Percentage of schools which have radio (one or more) used for educational purposes	97.4%	99%	97.8%
32	Percentage of schools which have televisions (one or more) used for educational purposes	66.3%	64.7%	72.6%
33	Ratio student/computer in computer laboratories	1	1	1
34	Ratio student/computer in learning resource centers	2	2	2
35	Percentage of schools which provide training courses/ workshops to administrative and teaching staff in the field of information and communication technology	88.8%	93.5%	91.5%

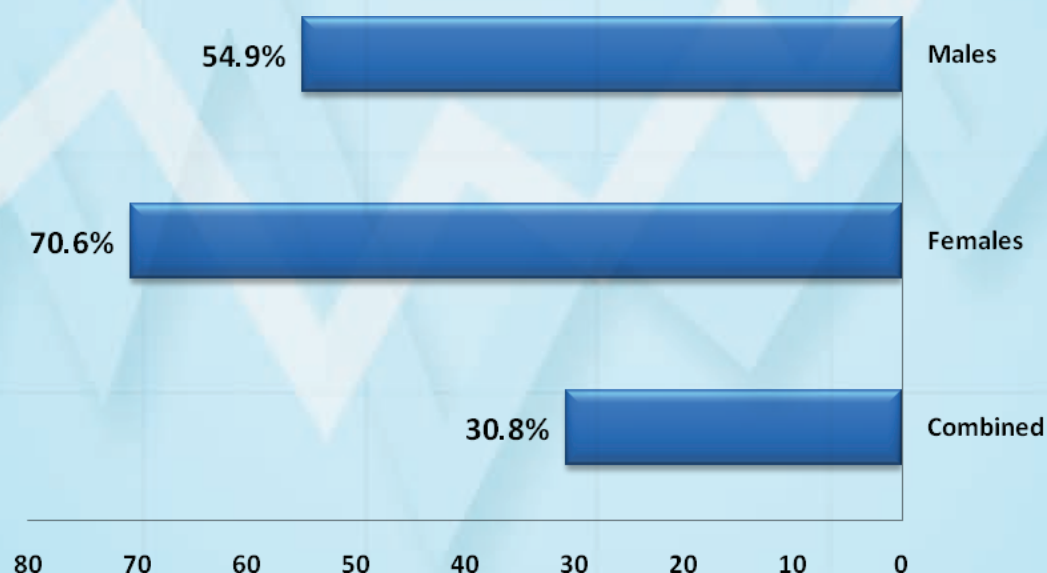


Figure (16): Graph representing ratio of computer/school in government schools according to gender

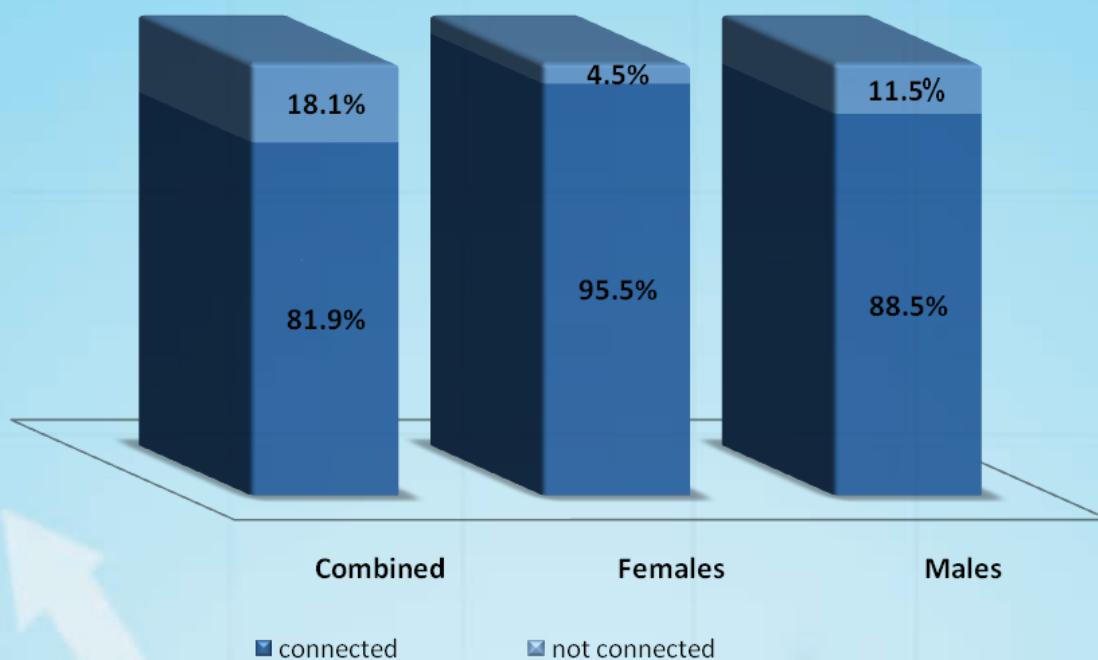


Figure (17): Graph representing percentage of government schools connected to the internet to the total number of government schools

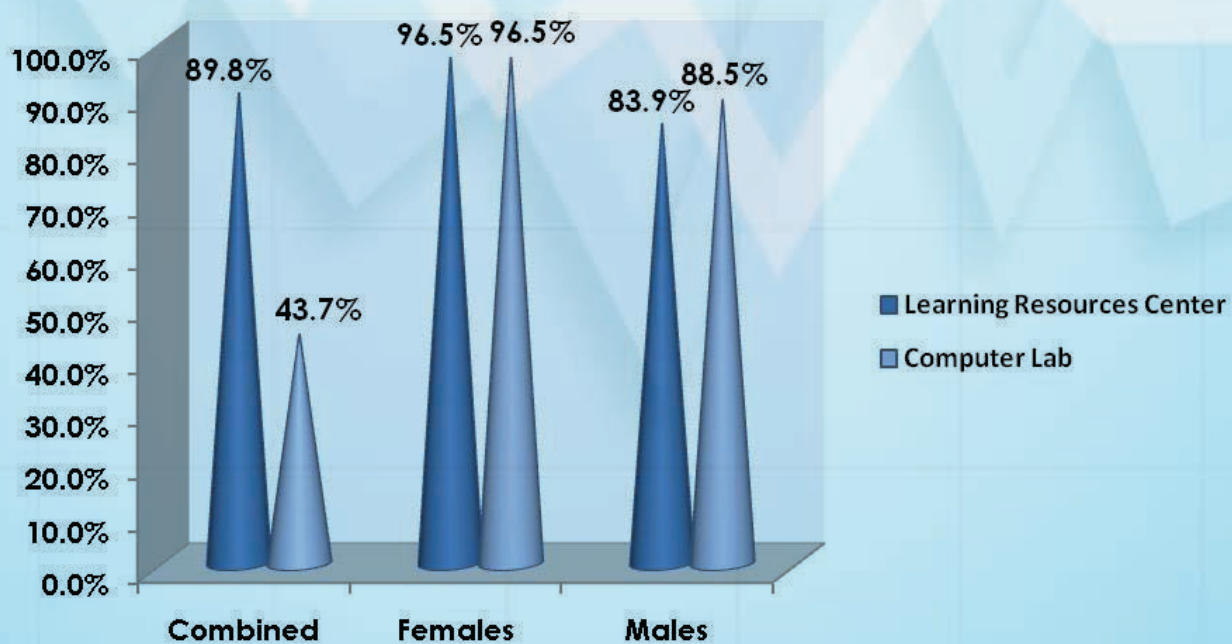


Figure (18) : Graph representing percentage of government schools which have computer laboratories and learning resource centers

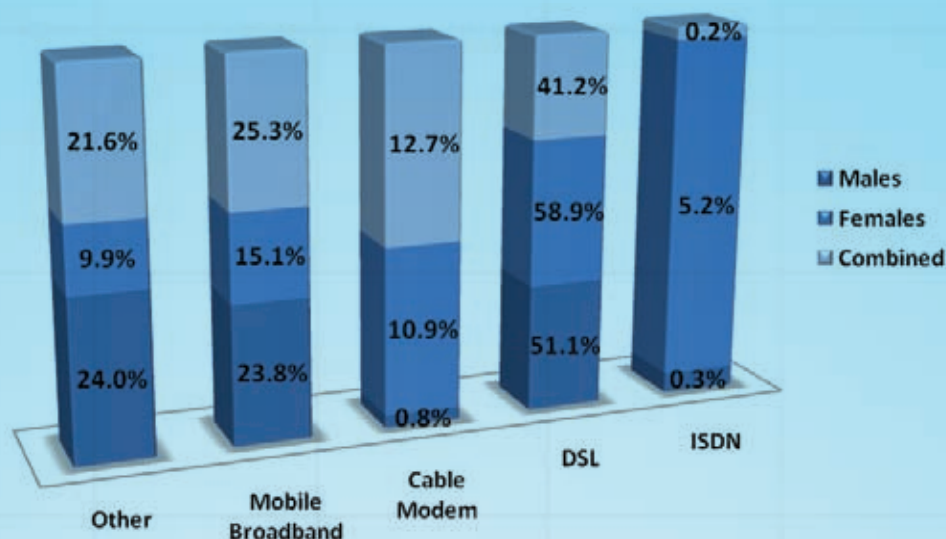


Figure (19) : Graph representing the percentage of government schools which are connected to the internet according to type of communication service

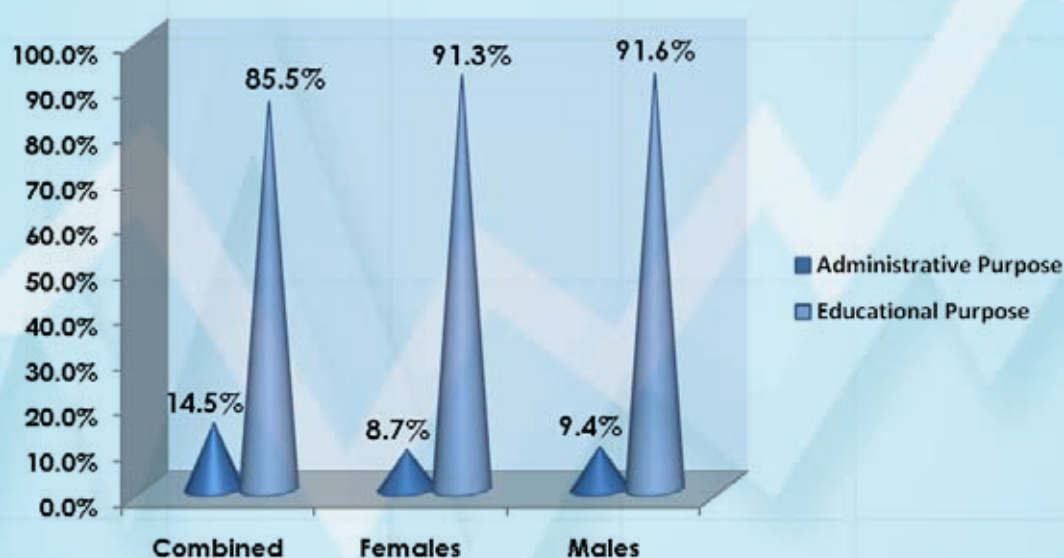


Figure (20) : Graph representing the percentage of usage of computers according to purposes of use

Table (4) shows indicators of government schools according to gender variable. It is observed that percentages of males, females and combined schools are close to each other, which indicate that the indicators between these schools are equivalent with regard to this variable, and ensures that any digital divide* in the information and communication technology in Omani schools cannot be attributed to the gender variable.

*digital divide is an expression which is used to indicate the gap between those who possess knowledge and abilities to use information technology, computers and the internet on one hand, and those who do not possess these on the other hand.

1.2. Administrative and teaching staff indicators

1.2.1. General Indicators of Administrative and teaching staff

Table (5) shows administrative and teaching staff indicators according to percentages of each targeted categories.

Table (5) Administrative and teaching staff indicators (n=49273)

No.	Indicator	Percentage
1	Percentage of administrative and teaching staff who have an specialized academic qualification in information and communication technology to the total number of staff.	15.1%
2	Percentage of administrative and teaching staff who have diplomas in information and communication technology to the total number of staff.	3.2%
3	Percentage of administrative and teaching staff who have bachelor degrees in information and communication technology to the total number of staff.	11.6%
4	Percentage of administrative and teaching staff who have master degrees in information and communication technology to the total number of staff.	0.2%
5	Percentage of administrative and teaching staff who have doctorates in information and communication technology to the total number of staff.	0.1%
6	Percentage of trained administrative and teaching staff in information and communication technology in education to the total number of staff.	37.7%
7	Percentage of administrative and teaching staff who have mobile telephones to the total number of staff.	99.9%
8	Percentage of administrative and teaching staff who use digital cameras to the total number of staff.	86.3%
9	Percentage of administrative and teaching staff who the internet to the total number of staff	89.1%
10	Percentage of administrative and teaching staff who have active electronic mail accounts to the total number of staff	88.9%
11	Percentage of administrative and teaching staff who use electronic mail to communicate with students to the total number of staff	8.5%
12	Percentage of administrative and teaching staff who have personal computers at home to the total number of staff	94.4%

No.	Indicator		Percentage
13	Percentage of administrative and teaching staff who do not have personal computers at home due to different reasons.	13-1 high cost	55.9%
		13-2 social reason	14.5%
		13-3 lack of sufficient knowledge	19%
		13-4 waste of time	1.7%
		13-5 language barrier	2%
		13-6 no need	21.7%
6	Percentage of trained administrative and teaching staff in information and communication technology in education to the total number of staff.		37.7%
14	Percentage of administrative and teaching staff who have an internet connection at home to the total number of staff.		81.6%
15	Percentage of administrative and teaching staff who use Oman educational portal to the total number of staff.		86.8%
16	Percentage of administrative and teaching staff who use the school management program to the total number of staff.		85.1%
17	Percentage of administrative and teaching staff who use computers for educational purposes to the total number of staff.		64.8%
18	Percentage of administrative and teaching staff who use television for educational purposes to the total number of staff.		62.5%
19	Percentage of administrative and teaching staff who use radio for educational purposes to the total number of staff.		60.9%
20	Percentage of administrative and teaching staff who use computer laboratories for educational purposes to the total number of staff.		59.4%
21	Percentage of administrative and teaching staff who use learning resource centers for educational purposes to the total number of staff.		86.5%
22	Percentage of administrative and teaching staff who use educational software as from the total number of staff		12.6%

IT Specializations

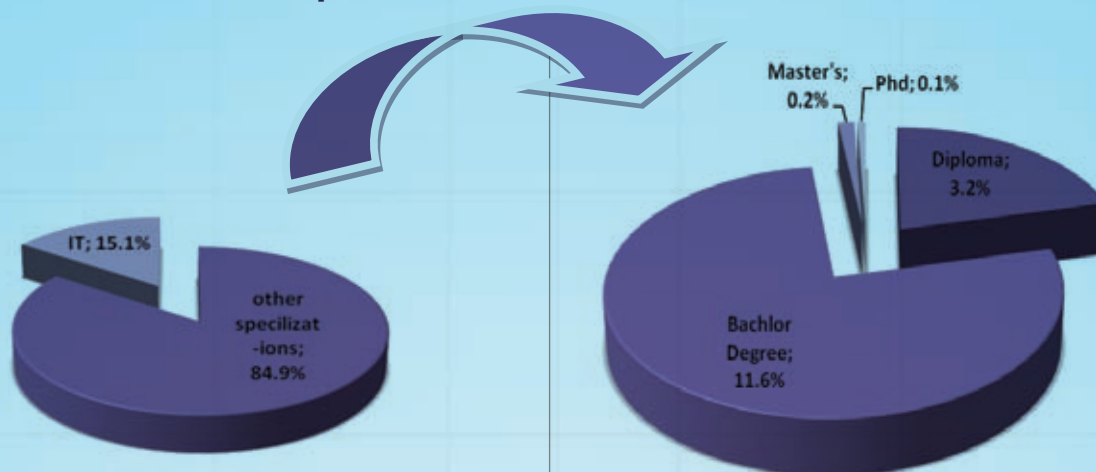


Figure (21): representing the percentage of administrative and teaching staff who have specialized academic qualifications in ICT as from the total number of staff of government schools

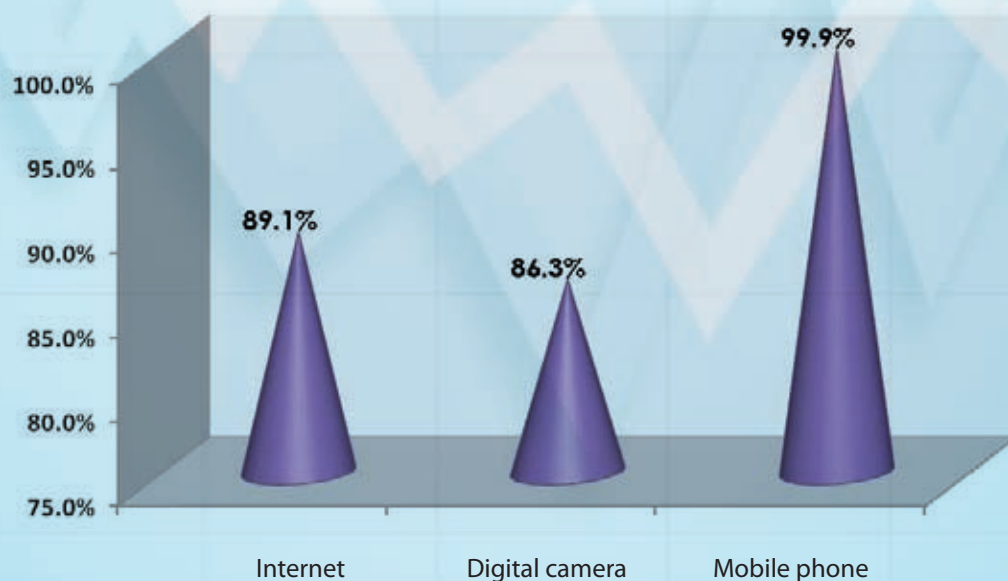


Figure (22) representing administrative and teaching staff of government schools who use modern technology communication devices

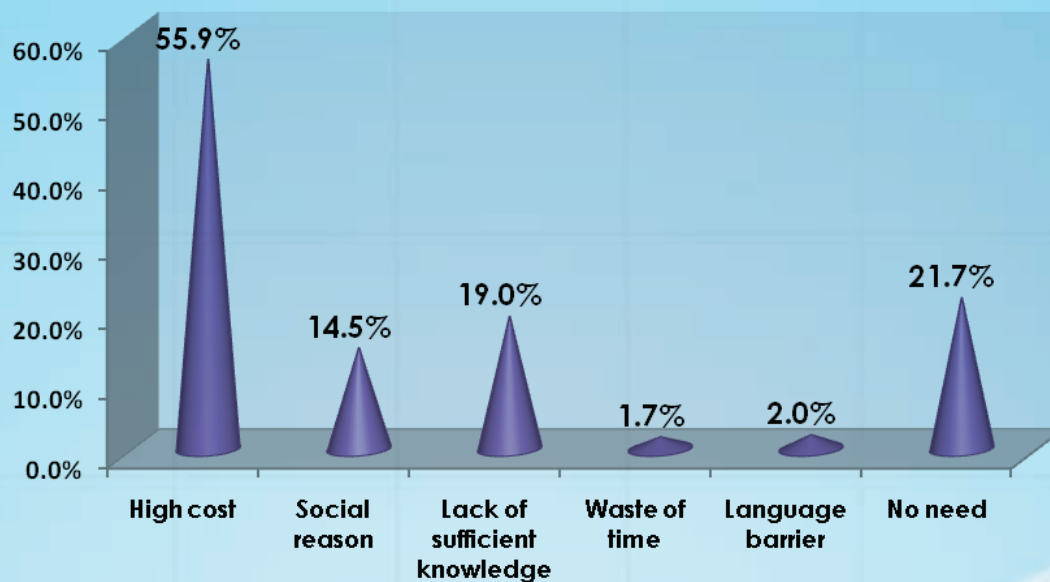


Figure (23): Graph representing percentage of administrative and teaching staff in government schools who do not have personal computers at home due to different reasons

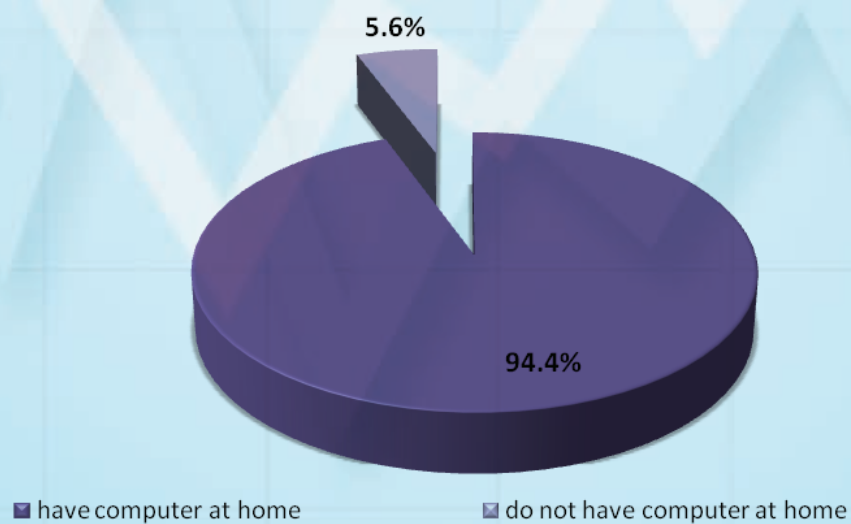


Figure (24) representing the percentage of administrative and teaching staff of government schools who have personal computers at home

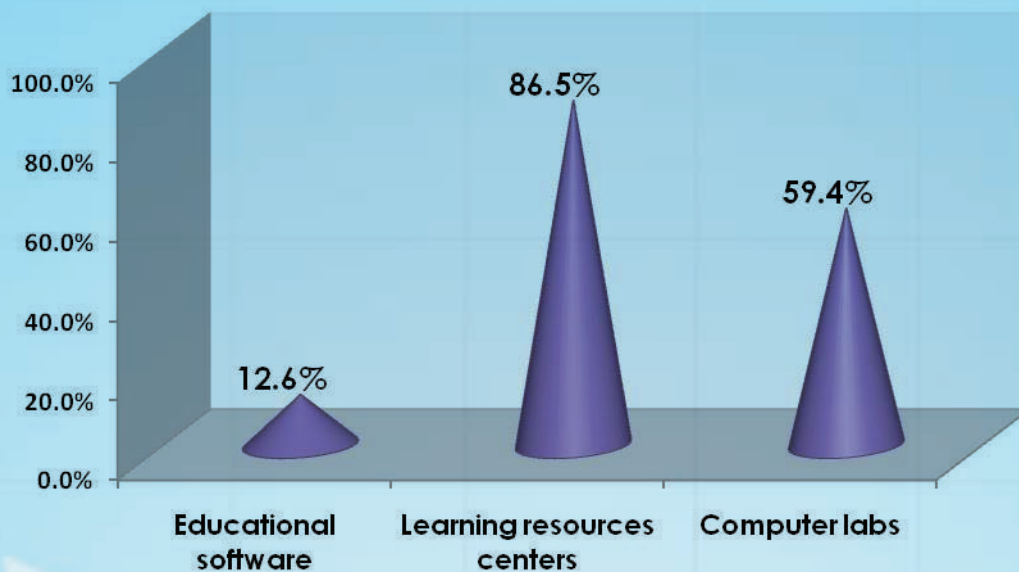


Figure (25) Graph representing percentage of administrative and teaching staff of government schools who use learning resource centers, computer laboratories and educational software for educational purposes to the total number of staff

The percentage of indicators of administrative and teaching staff shown in table (5) indicate the following facts:

a) There are eight high indicators (81.6% - 99.9%):

- Possession of mobile telephones.
- Use of digital cameras.
- Use of the internet.
- Having active e-mail accounts.
- Possession of personal computers at home.
- Access to the internet at home.
- Use of Oman educational portal.
- Use of school management program.
- Use of learning resource centers for educational purposes.

b) There are six medium indicators (33.1% - 64.8%):

- Use of computers for educational purposes.
- Use of television for educational purposes.
- The percentage of administrative and teaching staff who use radio for educational purposes.

- Use of computer laboratories for educational purposes.
- Training in the field of using information and communication technology in education.

c) There are seven low indicators (0.1% - 15.2%):

- Obtaining a specialized academic qualification in the field of information and communication technology.
- Obtaining a diploma in the field of information and communication technology.
- Obtaining a bachelor degree in the field of information and communication technology.
- Obtaining a master's degree in the field of information and communication technology.
- Obtaining a doctorate in the field of information and communication technology.
- Use of electronic mail in communicating with students.
- Use of educational software.

The indicators in table (5) indicate that there is a clear tendency among administrative, teaching and technical staff in the Sultanate of Oman towards possessing advanced technological devices, especially mobile telephones. These indicators conform with the contents of both reports of the Telecommunications Regulatory Authority of the United Arab Emirates (2008) and the Supreme Council of Information and Communication Technology of the State of Qatar (2009). Meanwhile, medium indicators indicate the importance of providing targeted categories, especially teachers, with skills of using technology in teaching and learning activities. These indicators are further justified by the existence of low indicators which indicate that certain percentages of the targeted categories do not own personal computers at home. Moreover, they do not obtain qualifications or specialized certificates in information and communication technology. Although this factor does not seem to be of an urgent nature at present, yet it helps, when it exists, in enabling members of the staff to effectively employ technologies in educational sector. The previous medium indicators are also supported by the fact of the low percentage of 12.6% of usage of educational software. This is a low percentage which indicates the urgent need of targeted categories, especially teachers, for training on methods of employing software in learning and teaching.

The Ministry of Education pays more care for using technology in education. It recently launched the (Intel Teach) initiative which aims at training all teachers on using technology in teaching and learning situations. The table also shows a level of 8.5% for the use of electronic mail in communicating with students. This low percentage may be due to the fact that the Ministry has focused, at the early stages of using electronic mail, on administrative processes. The Ministry is planning now to direct and encourage teachers to use e-mail in teaching and learning practices. In addition, there are plans to provide all ten, eleven and twelve students with e-mail accounts. This indicators conform with the outcomes of the study of Al Musawi in 2007 on the status of educational technology in the Omani higher education institutions. Some of the indicators included in this report were also included in Al Musawi study of 2007.

1.2.2 Indicators of Administrative and teaching staff according to gender

Table (6) below shows indicators of administrative and teaching staff according to gender percentage in government schools of the Sultanate of Oman

No.	Indicator	Males 18419	Females 30854
1	Percentage of administrative and teaching staff who have an specialized academic qualification in information and communication technology as from the total number of staff.	18.1%	15.5%
2	Percentage of administrative and teaching staff who have diplomas in information and communication technology to the total number of staff.	3.7%	3%
3	Percentage of administrative and teaching staff who have bachelor degrees in information and communication technology to the total number of staff.	13.9%	10.3%
4	Percentage of administrative and teaching staff who have master degrees in information and communication technology to the total number of staff.	0.4%	0.2%
5	Percentage of administrative and teaching staff who have doctorates in information and communication technology to the total number of staff.	0.1%	0.1
6	Percentage of trained administrative and teaching staff in information and communication technology in education to the total number of staff.	35.5%	39.1%
7	Percentage of administrative and teaching staff who have mobile telephones to the total number of staff.	99.8%	99.9%
8	Percentage of administrative and teaching staff who use digital cameras to the total number of staff.	82.9%	88.3%
9	Percentage of administrative and teaching staff who the internet to the total number of staff	86.2%	90.8%
10	Percentage of administrative and teaching staff who have active electronic mail accounts to the total number of staff	88.5%	89.1%
11	Percentage of administrative and teaching staff who use electronic mail to communicate with students to the total number of staff	11.7%	6.6%
12	Percentage of administrative and teaching staff who have personal computers at home to the total number of staff	90.5%	96.7%

No.	Indicator		Males 18419	Females 30854
13	Percentage of administrative and teaching staff who do not have personal computers at home due to different reasons.	13-1 high cost	58%	52.5%
		13-2 social reason	12.4%	18%
		13-3 lack of sufficient knowledge	20.2%	16.8%
		13-4 waste of time	2.1%	1.1%
		13-5 language barrier	2.2%	1.8%
		13-6 no need	21.6%	21.9%
14	Percentage of administrative and teaching staff who have an internet connection at home to the total number of staff.		72.2%	87.2%
15	Percentage of administrative and teaching staff who use Oman educational portal to the total number of staff.		84.2%	88.3%
16	Percentage of administrative and teaching staff who use the school management program to the total number of staff.		78%	89.3%
17	Percentage of administrative and teaching staff who use computers for educational purposes to the total number of staff.		59.9%	67.7%
18	Percentage of administrative and teaching staff who use television for educational purposes to the total number of staff.		56.8%	65.8%
19	Percentage of administrative and teaching staff who use radio for educational purposes to the total number of staff.		65.7%	74.3%
20	Percentage of administrative and teaching staff who use computer laboratories for educational purposes to the total number of staff.		64.5%	56.4%
21	Percentage of administrative and teaching staff who use learning resource centers for educational purposes to the total number of staff.		81.9%	89.4%
22	Percentage of administrative and teaching staff who use educational software to the total number of staff		16.4%	10.3%

IT Specializations

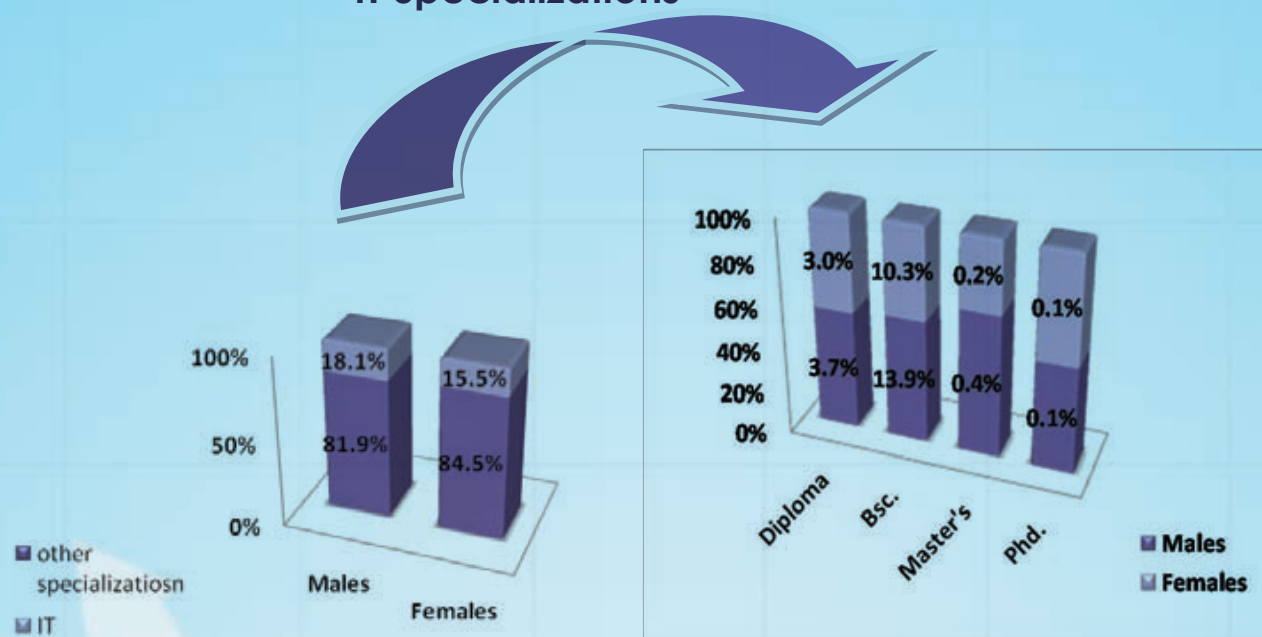


Figure (26): representing the percentage of administrative and teaching staff who have an specialized academic qualification in information and communication technology according to gender as from the total number of staff of government schools

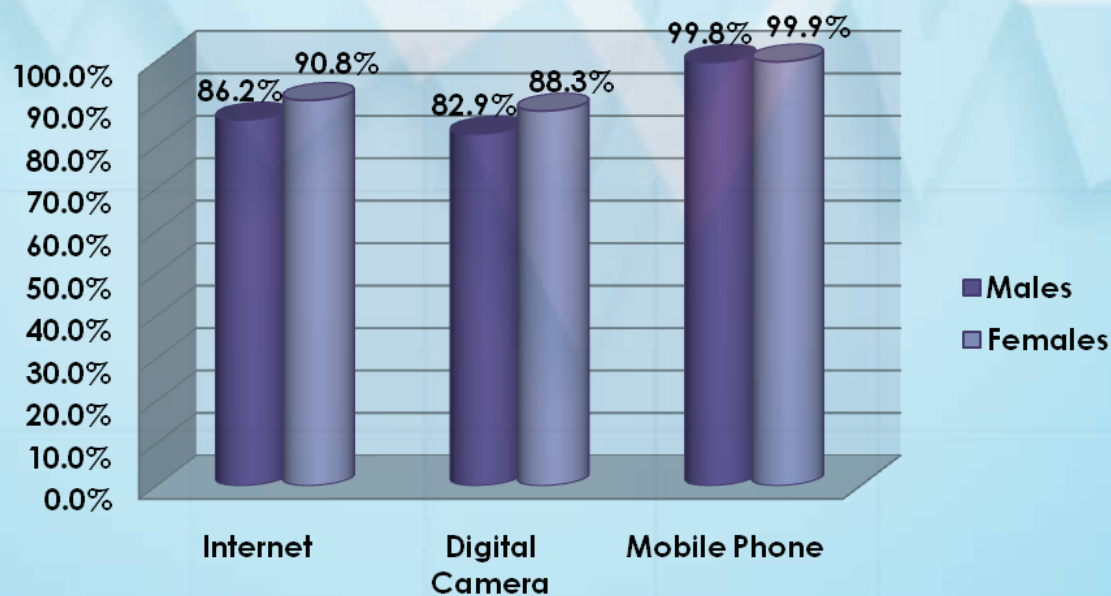


Figure (27) representing administrative and teaching staff of government schools who use modern technology communication devices according to gender

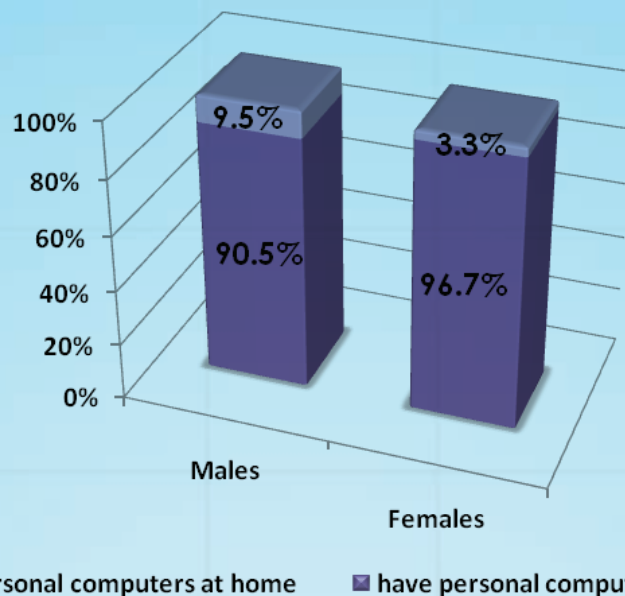


Figure (28): Graph representing percentage of administrative and teaching staff in government schools who have personal computers at home

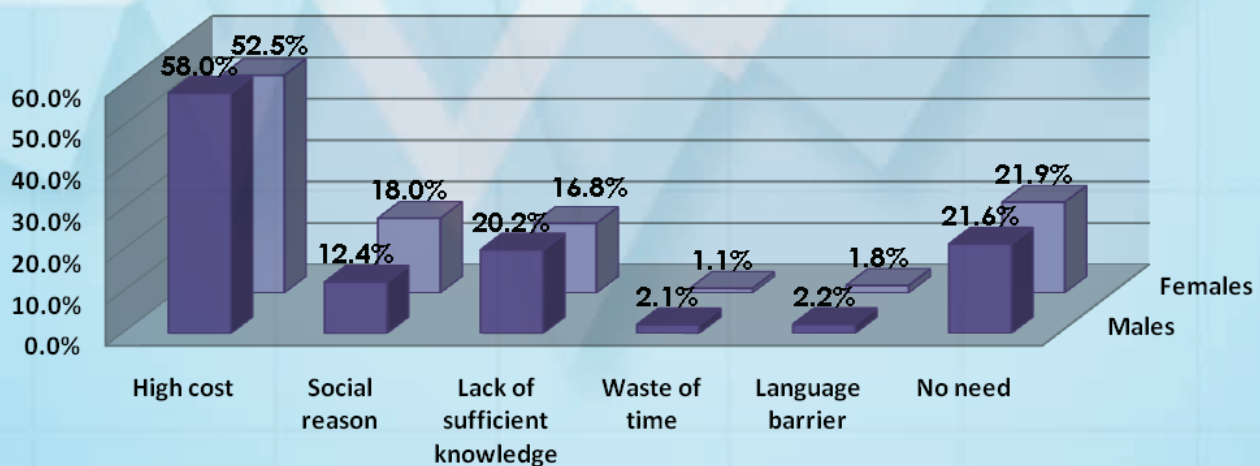


Figure (29): Graph representing percentage of administrative and teaching staff in government schools who do not have personal computers at home due to different reasons according to gender

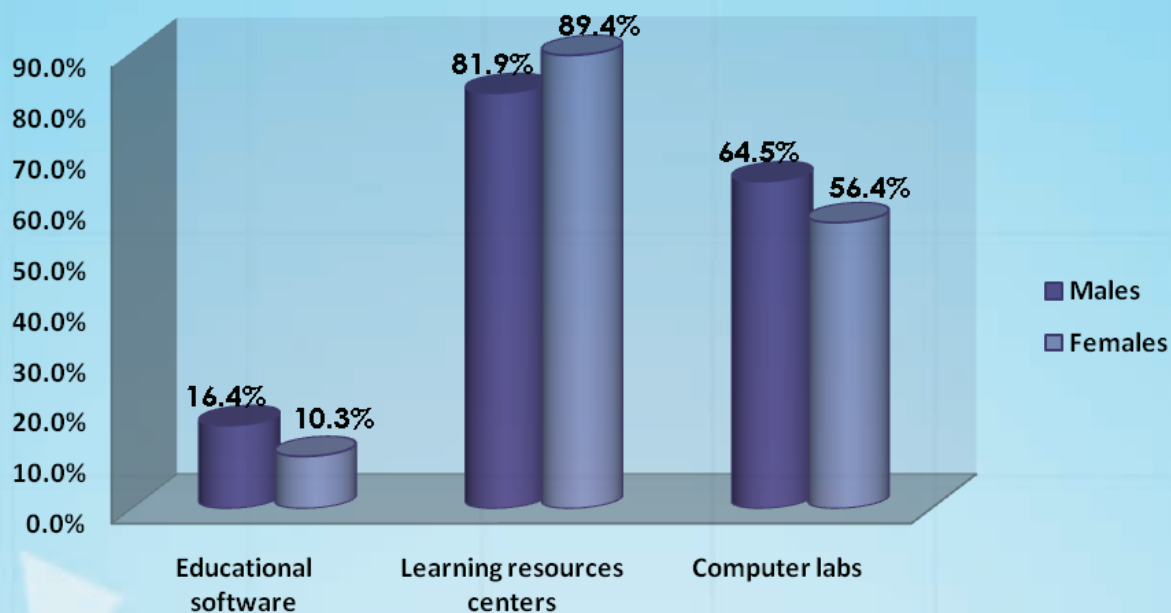


Figure (30) : Graph representing percentage of administrative and teaching staff of government schools according to gender who use learning resource centers, computer laboratories and educational software for educational purposes to the total number of staff

It is observed from table (6) above that the percentages of males and females are closer to each others. This indicates that there is no digital divide between males and females of the administrative and teaching staff. It also means that there is no digital divide between administrators and teachers based on the gender variable with regard to availability and use of information and communication technology in the schools of the Sultanate of Oman.

1.2.3. Indicators of administrative and teaching staff according to occupation

Table (7) below shows indicators of administrative and teaching staff according to occupation percentage in government schools

No.	Indicator	Adm. 2988	Teach. 46285
1	Percentage of administrative and teaching staff who have specialized academic qualification in information and communication technology to the total number of staff.	13.1%	15.3%
2	Percentage of administrative and teaching staff who have diplomas in information and communication technology to the total number of staff.	7.3%	3%
3	Percentage of administrative and teaching staff who have bachelor degrees in information and communication technology to the total number of staff.	5.4%	12%
4	Percentage of administrative and teaching staff who have master's degrees in information and communication technology to the total number of staff.	0.3%	0.2%
5	Percentage of administrative and teaching staff who have doctorates in information and communication technology to the total number of staff.	0.1%	0.1%
6	Percentage of trained administrative and teaching staff in information and communication technology in education to the total number of staff.	51.9%	36.9%
7	Percentage of administrative and teaching staff who have mobile telephones to the total number of staff.	99.9%	99.9%
8	Percentage of administrative and teaching staff who use digital cameras to the total number of staff.	87%	86.2%
9	Percentage of administrative and teaching staff who use the internet to the total number of staff	92.1%	88.9%
10	Percentage of administrative and teaching staff who have active electronic mail accounts to the total number of staff	95.8%	88.4%
11	Percentage of administrative and teaching staff who use electronic mail to communicate with students to the total number of staff	8.8%	8.5%
12	Percentage of administrative and teaching staff who have personal computers at home to the total number of staff	96.2%	94.3%

No.	Indicator		Adm. 2988	Teach. 46285
13	Percentage of administrative and teaching staff who do not have personal computers at home due to different reasons.	13-1 high cost	47.4%	56.3%
		13-2 social reason	19.3%	14.2%
		13-3 lack of sufficient knowledge	21.9%	18.8%
		13-4 waste of time	2.6%	0.01%
		13-5 language barrier	3.5%	2%
		13-6 no need	27.2%	21.5%
14	Percentage of administrative and teaching staff who have an internet connection at home to the total number of staff.		86.7%	81.3%
15	Percentage of administrative and teaching staff who use Oman educational portal to the total number of staff.		92.8%	86.4%
16	Percentage of administrative and teaching staff who use the school management program to the total number of staff.		96.6%	84.4%
17	Percentage of administrative and teaching staff who use computers for educational purposes to the total number of staff.		34.1%	66.8%
18	Percentage of administrative and teaching staff who use television for educational purposes to the total number of staff.		35.8%	64.1%
19	Percentage of administrative and teaching staff who use radio for educational purposes to the total number of staff.		39.9%	73%
20	Percentage of administrative and teaching staff who use computer laboratories for educational purposes to the total number of staff.		34.6%	61%
21	Percentage of administrative and teaching staff who use learning resource centers for educational purposes to the total number of staff.		50.4	88.9%
22	Percentage of administrative and teaching staff who use educational software to the total number of staff		6.2%	13%

IT Specilizations

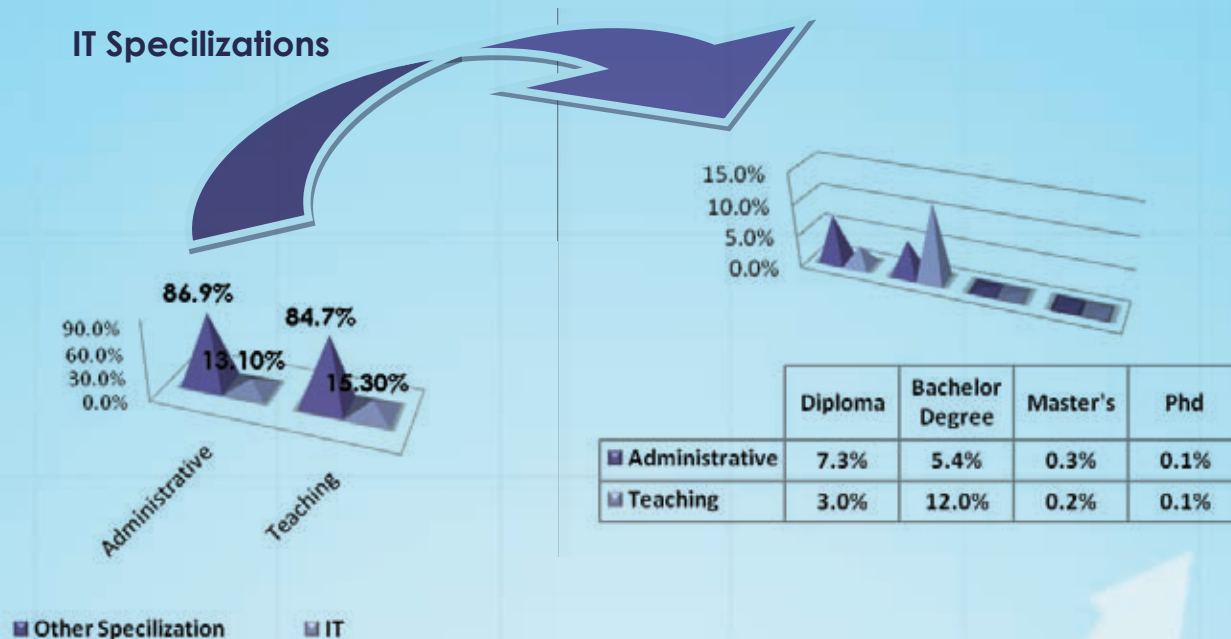


Figure (31): Representing the percentage of administrative and teaching staff who have an specialized academic qualification in information and communication technology according to occupation to the total number of staff of government schools

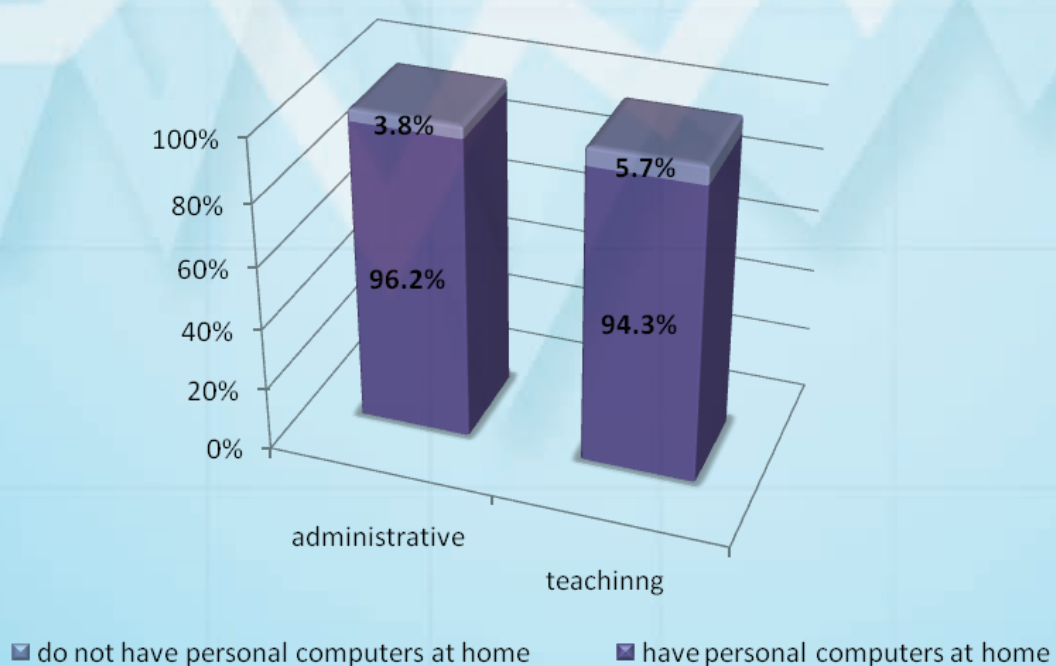


Figure (32): Graph representing percentage of administrative and teaching staff in government schools according to occupation who have personal computers at home

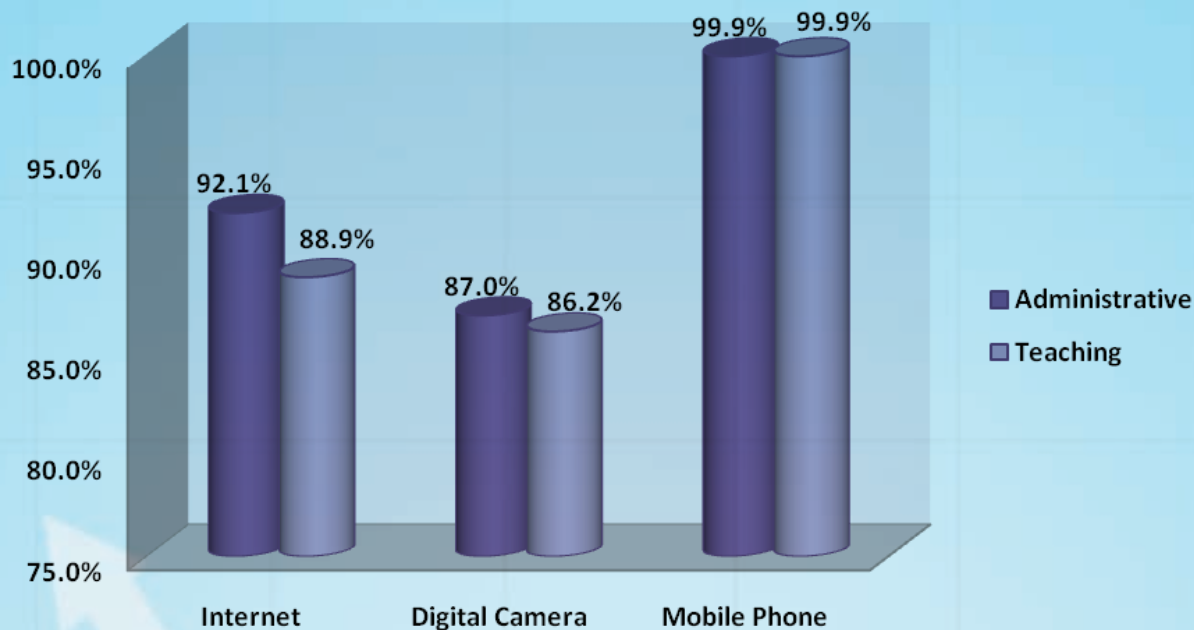


Figure (33) representing administrative and teaching staff of government schools according to occupation who use modern technology communication devices

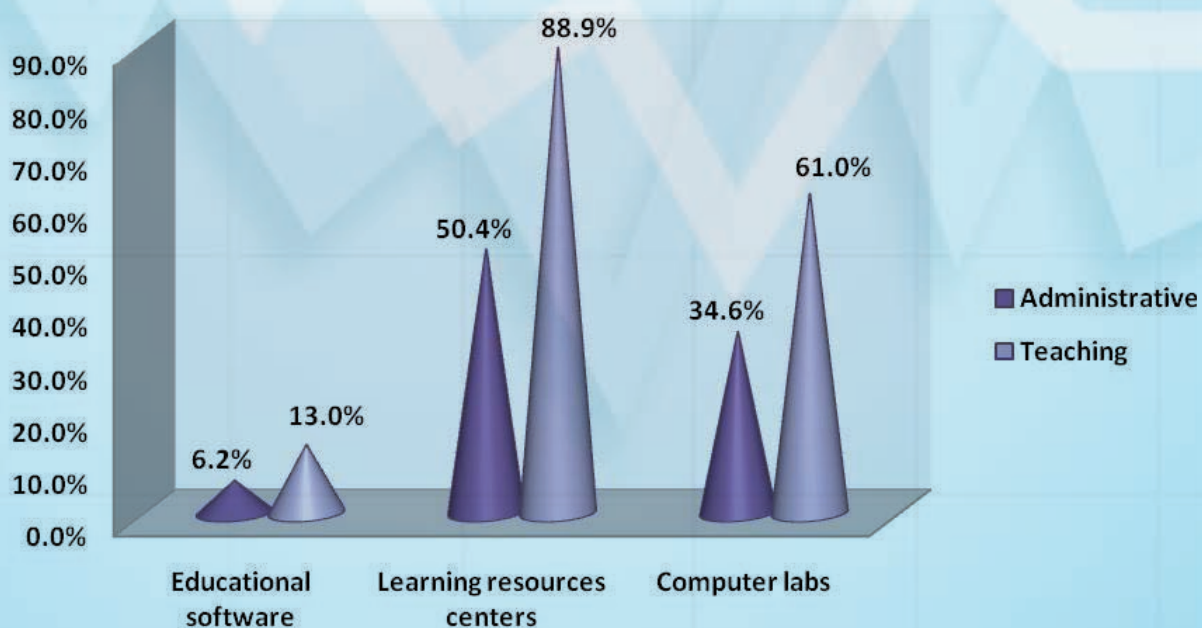


Figure (34) Graph representing percentage of administrative and teaching staff of government schools according to occupation who use learning resource centers, computer laboratories and educational software for educational purposes to the total number of staff

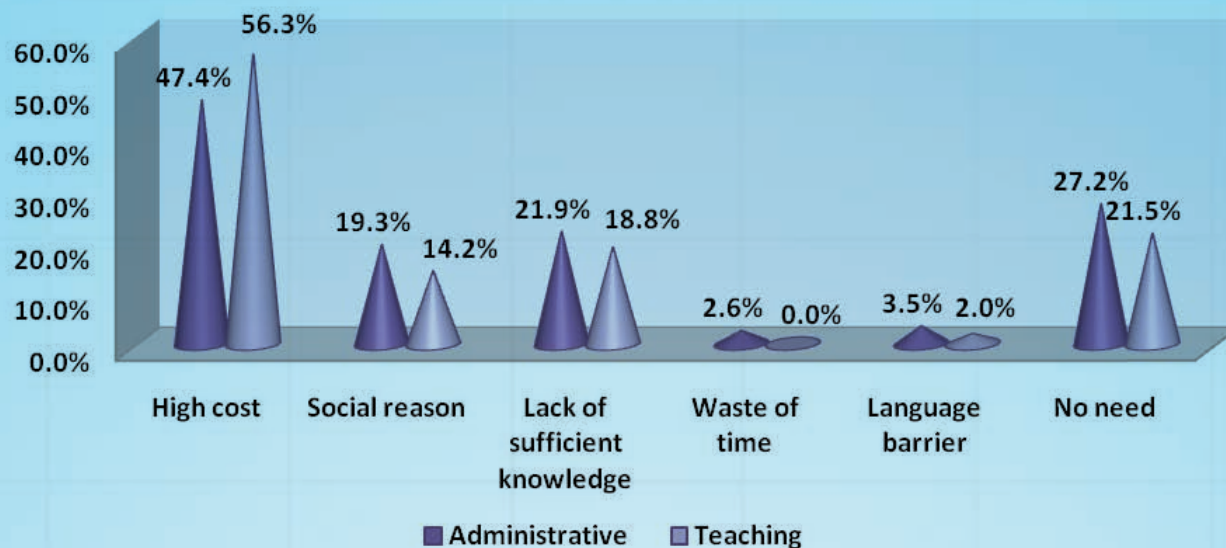


Figure (35): Graph representing percentage of administrative and teaching staff in government schools according to occupation who do not have personal computers at home due to different reasons

It is observed from table (7) above that the percentages of administrators and teachers are closer to each other except in teaching practices which are high in favor of teachers. The indicator that draws the attention is that one concerned with administrators and teachers who received training in the use of information and communication technology in education. A high percentage is shown in favor of administrators compared to a lower percentage of 36.9% shown for teachers. This requires conducting intensive training courses to narrow this digital divide between the two categories so as to improve this indicator in the future. The initiative of the Information Technology Authority aiming at training all the civil service employees, including teachers. This initiative was launched last year to award participants an IC3 certificate. Nearly 7000 teachers have already passed this course.

1.3. Students' Indicators

1.3.1. General indicators of students

Table (8) shows students' indicators according to percentage of possession and use of information and communication technology:

Table (8)
Indicators of grade 1-12 students in
government schools in the Sultanate of Oman (n=505633)

No.	Indicator		Percentage
1	Percentage of students who have mobile telephones to the total number of students.		33%
2	Percentage of students who have computers at home to the total number of students.		69%
3	Percentage of students who use computers to the total number of students.		89.4%
4	Percentage of students who use computers according to location of use to the total number of students	at school	88.7%
		at home	70.2%
		in other places	31.4%
5	Percentage of students who can use computers at schools to do activities and school assignments to the total number of students		38.9%
6	Percentage of students who can use digital cameras to the total number of students.		59.4%
7	Percentage of students who can establish a web page to the total number of students.		14.9%
8	Percentage of students who use the internet according to location of use to the total number of students	at school	19.1%
		at home	37.4%
		at other places	19.2%
9	Percentage of students who use the internet according to purpose of use to the total number of students who use the internet	to obtain information	77.8%
		for entertainment	68.8%
		to have access to the portal	37.8%
		for study	60.8%
		to communicate with others	26.2%
10	Percentage of number of periods per week in which students use computers in schools to the total number of weekly periods.		5.5%
11	Percentage of number of periods per week in which students use the internet in schools to the total number of weekly periods.		1.1%

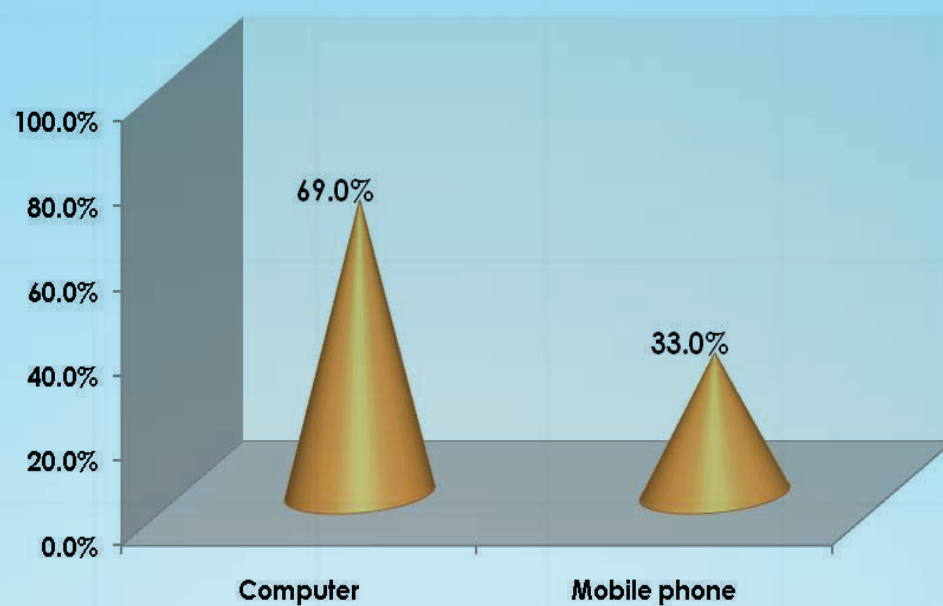
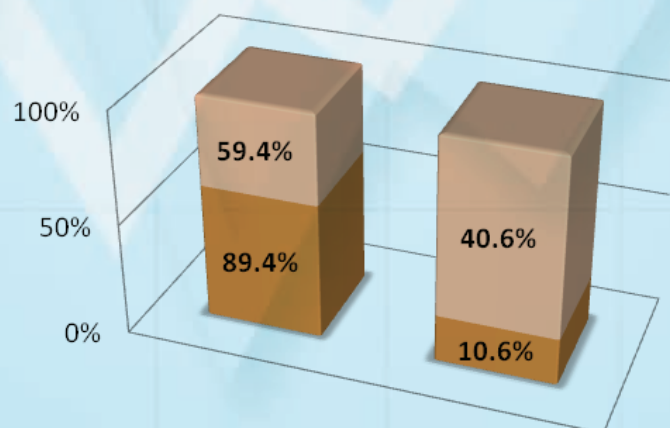


Figure (36) : Graph representing the percentage of students of government schools who have technological devices to the total number of students



	use	do not use
digital camera	59.4%	40.6%
computer	89.4%	10.6%

Figure (37): Graph representing the percentage of students of government schools who use computers and digital cameras to the total number of students

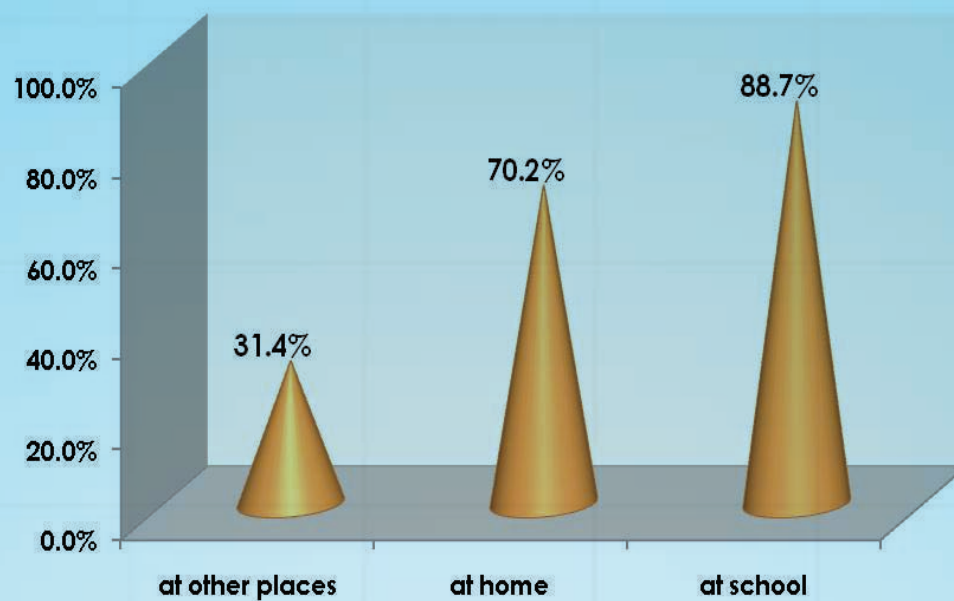


Figure (38): Graph representing the percentage of students of government schools who use computers according to locations to the total number of students

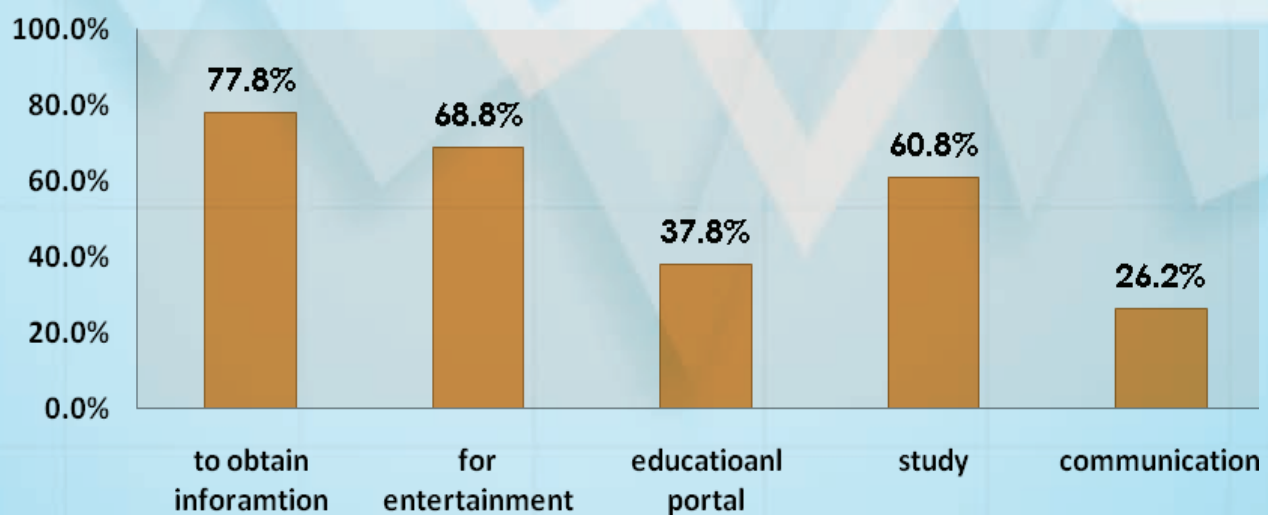


Figure (39): Graph representing the percentage of students of government schools who use the internet according to purpose of use to the total number of students

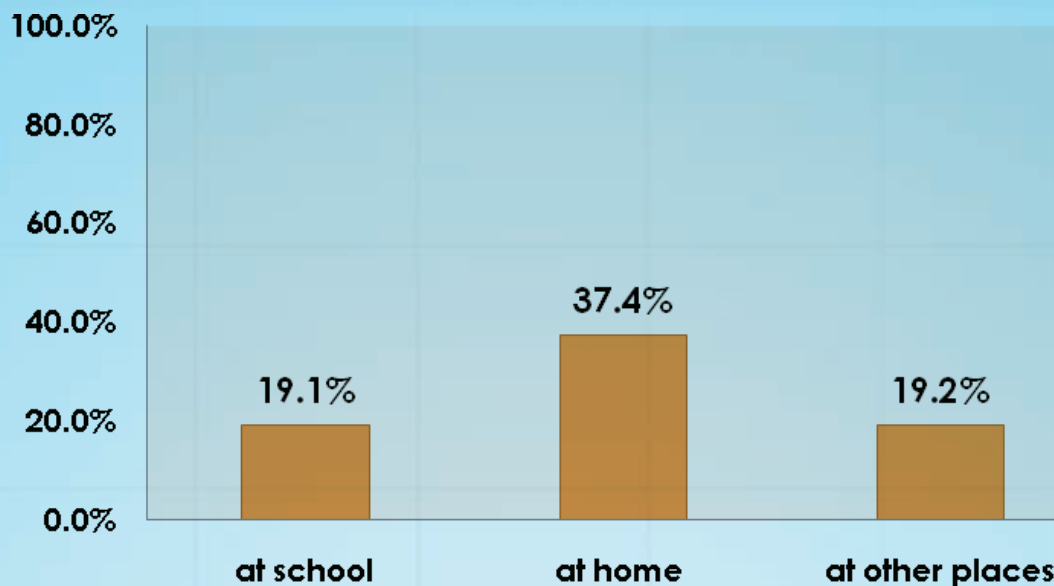


Figure (40): Graph representing the percentage of students of government schools who use the internet for different purposes according to location of use to the total number of students

The percentages in table (8) indicate that students use computers and the internet at schools and other places for different purposes. Yet, there is a need to emphasize the culture of using the internet at schools to do learning activities and school assignments since the percentage is only 38.9%. This may be due to the shortage in numbers of computers or to instability of the internet service since students are in need to make use of electronic resources. It is recommended that more efforts should be made to increase this percentage. Students should, also, be trained on using digital cameras and on establishing web pages as per required by international indicators. On the other hand, the percentages of number of periods of using the computers and the internet at schools are generally low and they are need to be increased so as to match international trends in this fields. It may be necessary to increase also students' access to the educational portal by providing interactive school curricula, electronic textbooks and learning objects. The Ministry of Education is currently implementing the project of the electronic learning in one school. Digital contents were designed to be used by students and teachers of the selected school. The electronic learning is a major system of the educational portal although it is not activated till now because of lack of the required infrastructure at schools. The Ministry has, also, started building the interactive digital contents in accordance with international standards. Teams were formed in all educational regions of Oman for the implementation of the electronic learning project.

1.3.2. Indicators of students according to type of education

Table (9) shows students' indicators according to percentage of possession and use of information and communication technology based on type of education.

No.	Indicator		General 24498	Basic 340583	Combined 140552
1	Percentage of students who have mobile telephones to the total number of students.		21.4%	34.0%	32.7%
2	Percentage of students who have computers at home to the total number of students.		59.6%	72.5%	61.4%
3	Percentage of students who use computers to the total number of students.		66.1%	93.5%	83.7%
4	Percentage of students who use computers according to location of use to the total number of students	at school	17.7%	86.7%	72.0%
		at home	51.0%	66.6%	55.6%
		in other places	18.8%	30.5%	23.8%
5	Percentage of students who can use computers at schools to do activities and school assignments to the total number of students		20.8%	41.5%	35.8%
6	Percentage of students who can use digital cameras to the total number of students.		59.6%	60.0%	58.0%
7	Percentage of students who can establish a web page to the total number of students.		5.8%	17.0%	11.3%
8	Percentage of students who use the internet according to location of use to the total number of students	at school	3.1%	23.1%	12.3%
		at home	24.2%	41.1%	30.7%
		at other places	11.0%	21.5%	15.3%
9	Percentage of students who use the internet according to purpose of use to the total number of students who use the internet	to obtain information	64.3%	77.3%	81.7%
		for entertainment	58.8%	70.0%	66.7%
		to have access to the portal	24.2%	38.4%	38.2%
		for study	47.0%	61.6%	61.1%
		to communicate with others	13.1%	28.2%	22.3%

No.	Indicator	General 24498	Basic 340583	Combined 140552
10	Percentage of number of periods per week in which students use computers in schools to the total number of weekly periods.	1.6%	5.7%	6.1%
11	Percentage of number of periods per week in which students use the internet in schools to the total number of weekly periods.	0.4%	1.5%	0.8%

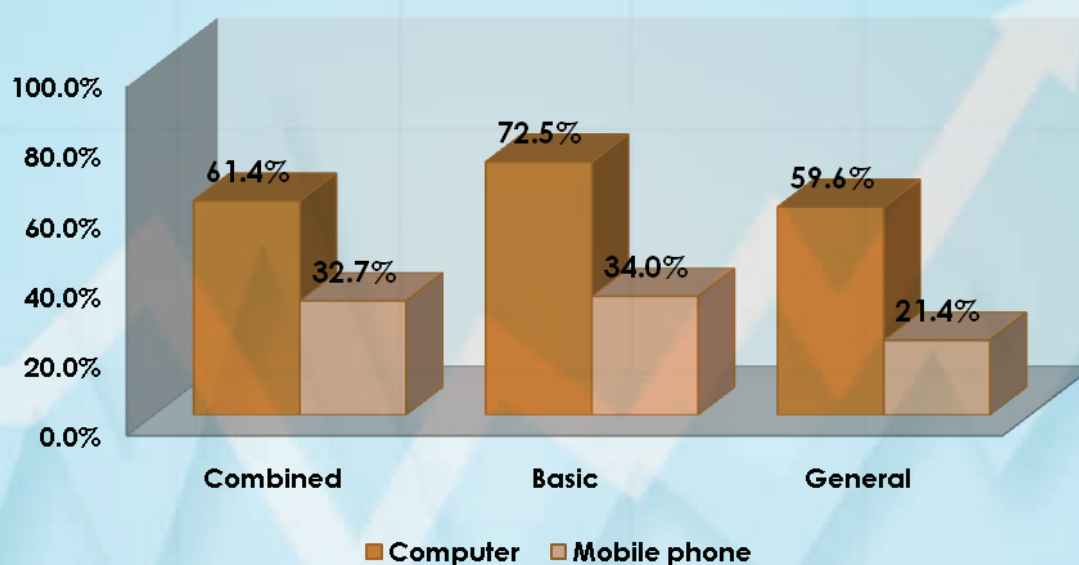
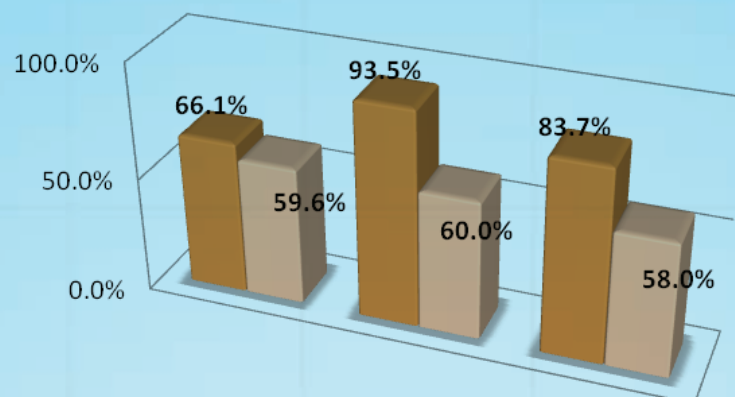


Figure (41): Graph representing percentage of students who have technological devices to the total number of students of government schools



	General	Basic	Combined
computer	66.1%	93.5%	83.7%
digital camera	59.6%	60.0%	58.0%

Figure (42): Graph representing percentage of student s who use technological devices to the total number of students of government schools

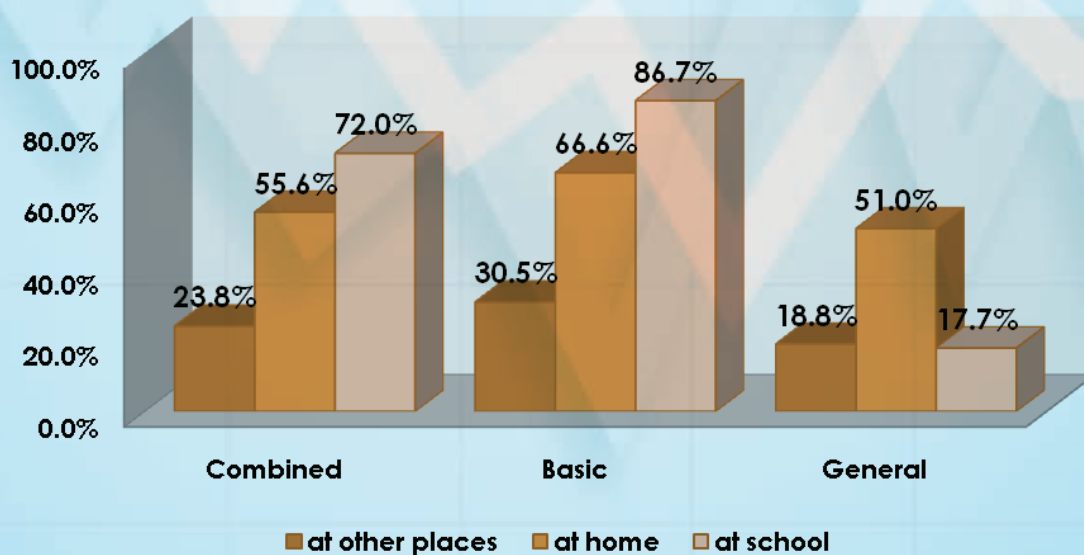


Figure (43): Graph representing percentage of students who use computers according to location of usage to the total number of students of government schools

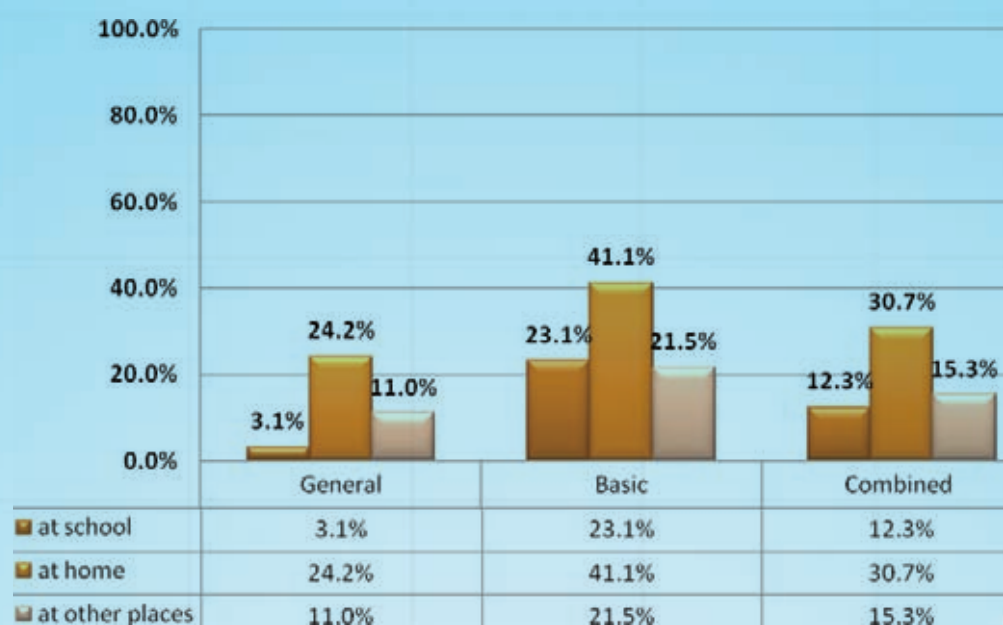


Figure (44): Graph representing percentage of students who use the internet according to location of usage to the total number of students of government schools

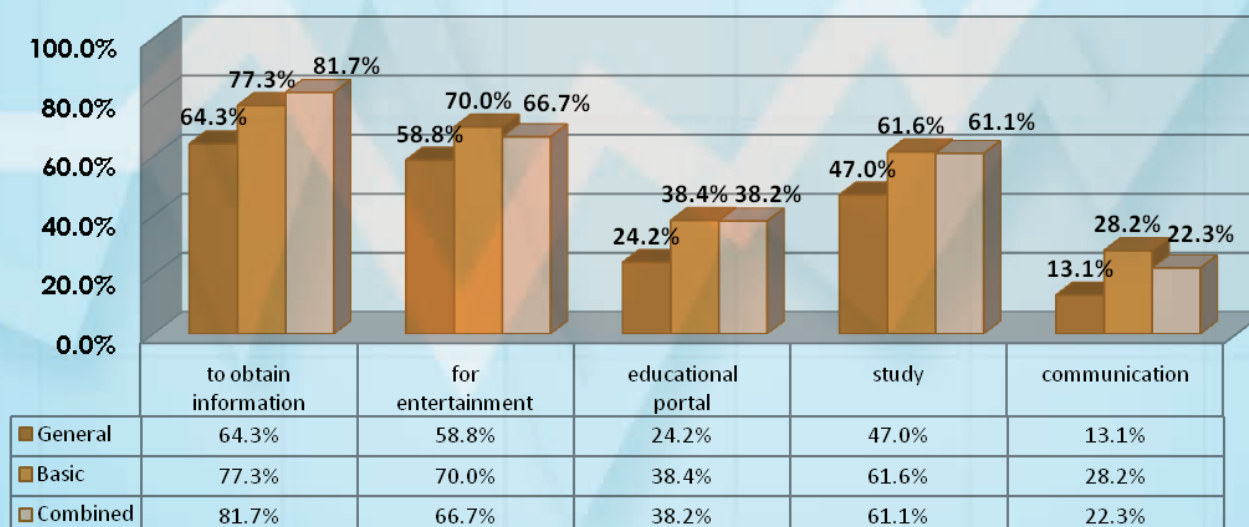


Figure (45): Graph representing percentage of students who use the internet according to purposes of usage to the total number of students of government schools

Indicators of table (9) confirm the previously concluded students' indicators in government schools. They show that the percentages of students of these schools are almost equal as per type of education. This means that the availability of technology devices and their usage are closely similar.

1.3.3. Indicators of students according to gender

Table (10) shows government schools students' indicators according to percentage of possession and use of information and communication technology based on gender.

No.	Indicator		Males 175471	Females 136887	Combined 140552
1	Percentage of students who have mobile telephones to the total number of students.		57.5%	28.5%	14.1%
2	Percentage of students who have computers at home to the total number of students.		69.9%	78.6%	60.8%
3	Percentage of students who use computers to the total number of students.		84.4%	91.2%	93.4%
4	Percentage of students who use computers according to location of use to the total number of students	at school	70.9%	78.5%	87.4%
		at home	63.5%	75.8%	53.1%
		in other places	33.7%	38.7%	15.4%
5	Percentage of students who can use computers at schools to do activities and school assignments to the total number of students		38.8%	55.5%	27.2%
6	Percentage of students who can use digital cameras to the total number of students.		56.7%	67.7%	55.9%
7	Percentage of students who can establish a web page to the total number of students.		19.1%	24.7%	4.2%
8	Percentage of students who use the internet according to location of use to the total number of students	at school	25.1%	32.2%	4.4%
		at home	41.3%	55.7%	21.0%
		at other places	27.0%	28.8%	5.4%
9	Percentage of students who use the internet according to purpose of use to the total number of students who use the internet	to obtain information	89.3%	100%	37.2%
		for entertainment	82.7%	75.3%	44.9%
		to have access to the portal	48.0%	52.2%	9.5%
		for study	72.0%	83.5%	21.9%
		to communicate with others	37.8%	31.5%	6.5%

No.	Indicator	Males 175471	Females 136887	Combined 140552
10	Percentage of number of periods per week in which students use computers in schools to the total number of weekly periods.	6.7%	7.1%	4.1%
11	Percentage of number of periods per week in which students use the internet in schools to the total number of weekly periods.	1.6%	1.9%	0.5%

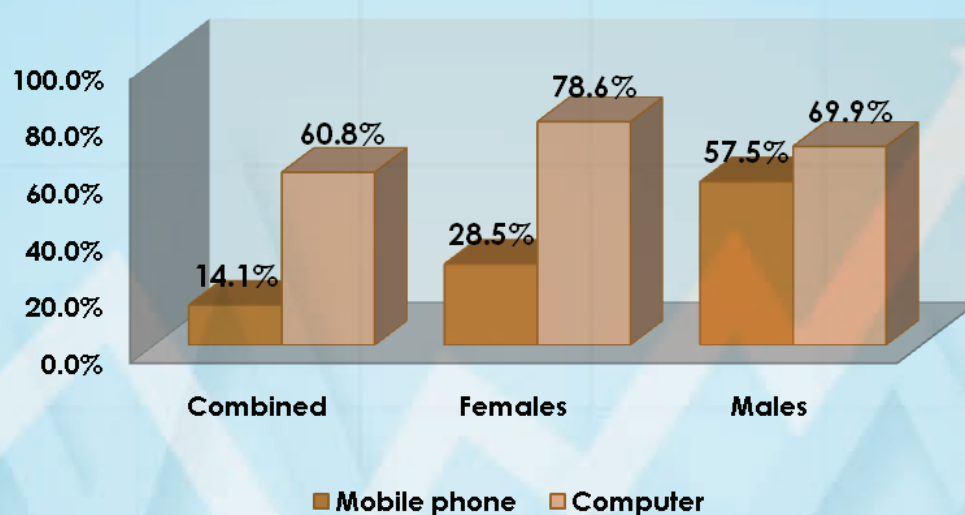


Figure (46): Graph representing percentage of students who have technological devices as from the total number of students of government schools based on gender

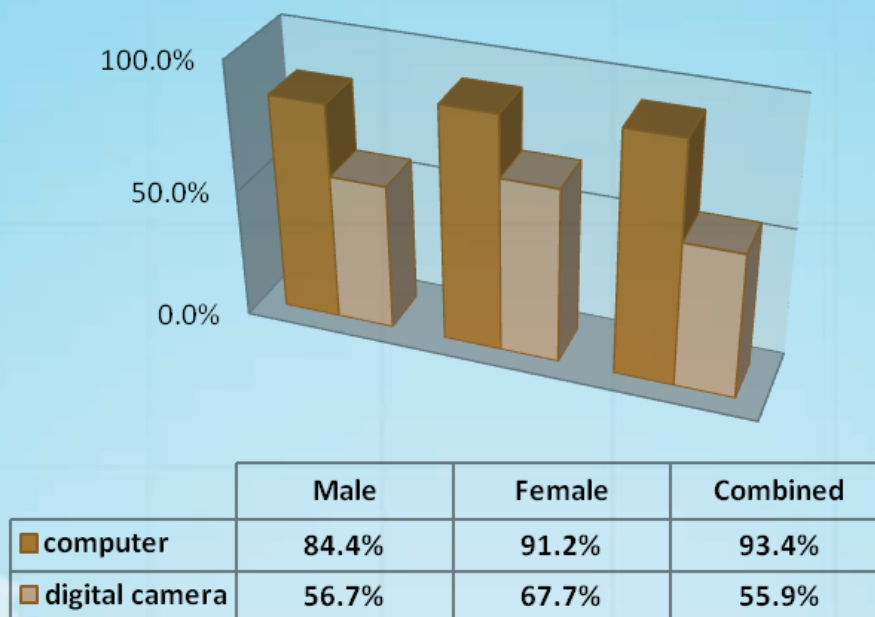


Figure (47): Graph representing percentage of student s who use technological devices as from the total number of students of government schools based on gender

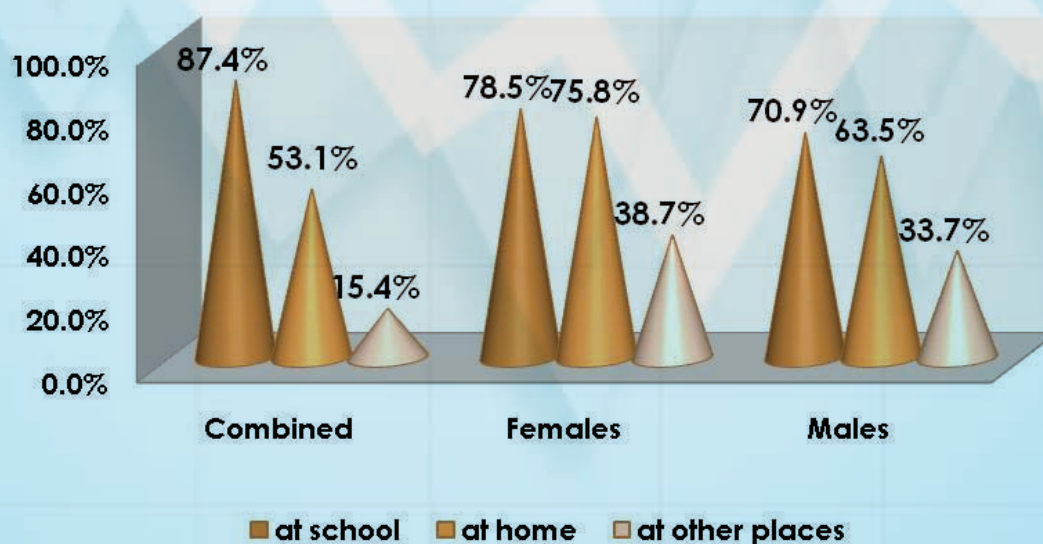


Figure (48): Graph representing percentage of students who use computers according to location of usage as from the total number of students of government schools based on gender

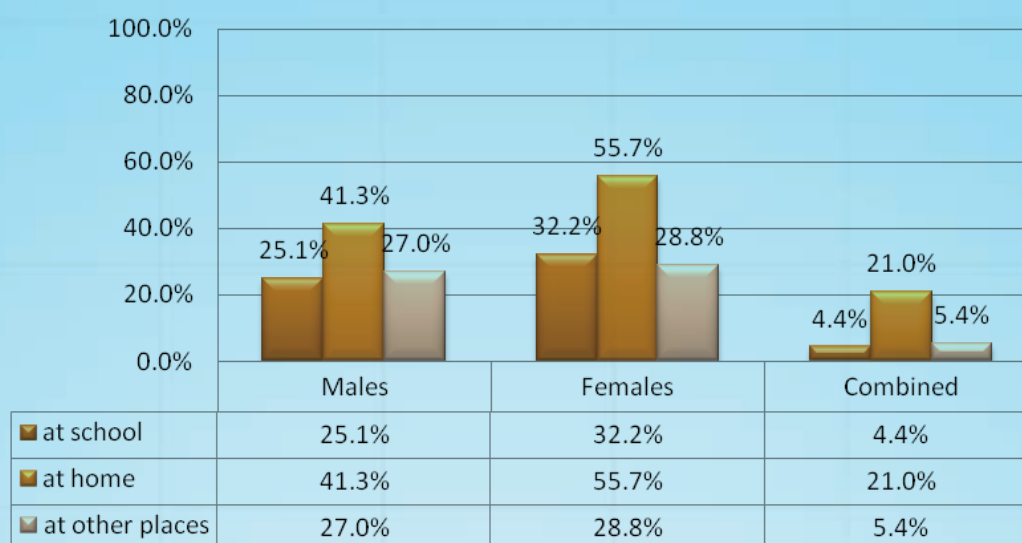


Figure (49): Graph representing percentage of students who use the internet according to location of usage to the total number of students of government schools based on gender

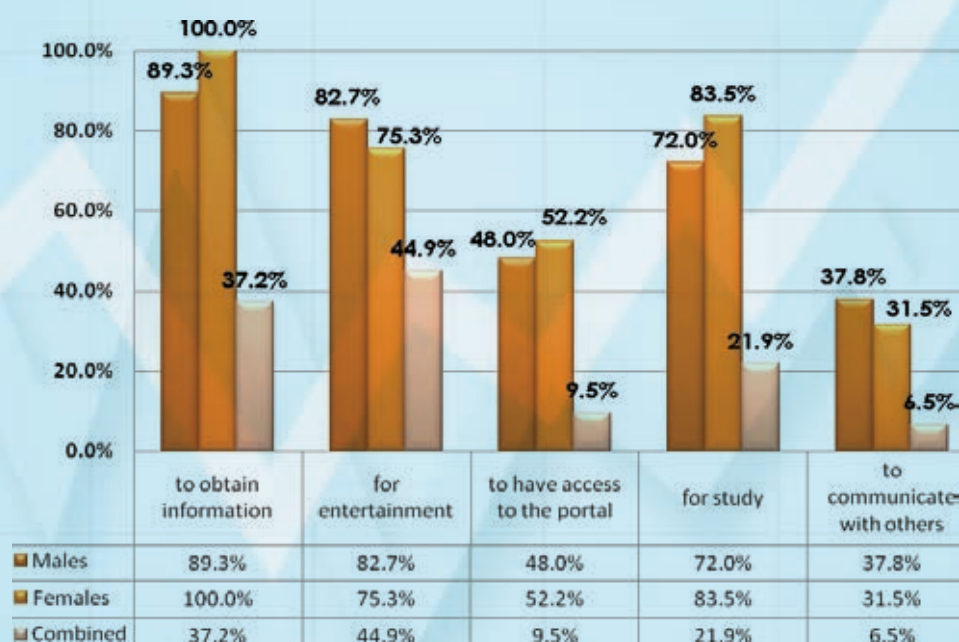


Figure (50): Graph representing percentage of students who use the internet according to purposes of usage to the total number of students of government schools

Table (10) shows that indicators of availability and usage of technological devices by male and female students are almost close to each other except for the possession of mobile telephones which is in favor of males. Yet, other indicators are low in combined schools, which may be referred to the fact that these schools are basic education cycle one schools, especially the low percentage of 27.2% of students who can use computers at schools to do their activities and assignments. This percentage is not far from the percentage of 38.8% of boys schools. It is, therefore, necessary to increase this percentage by identifying reasons and then finding methods of addressing them.

Second: Outcomes of Private Schools

Table (11) shows school indicators according to percentage of availability of ICT in private schools in the Sultanate of Oman.

Table (11)
Private Schools Indicators (n= 181)

No.	Indicator		Percentage
1	Percentage of schools which have fixed telephone line or mobile phone of total number of schools		96.7%
2	Percentage of schools which have fixed telephone line		67.4%
3	Percentage of schools which have mobile phone		29.3%
4	Percentage of schools which have fixed telephone line and mobile phone of total number of schools		0%
5	Percentage of schools which have no communication means		3.3%
6	Percentage of schools which have web sites on the internet		33.1%
7	Percentage of schools which have web sites on the internet as per the services provided by the web site	7-1 school plan	40%
		7-2 data	50%
		7-3 statistics	43.3%
		7-4 lessons	81.7%
		7-5 information	23.3%
		7-6 others	46.7%
8	Percentage of schools which use the educational portal of Oman		98.9%
9	Percentage of schools which do not use the educational portal of Oman for certain reasons		100%
10	Percentage of schools which use the school management program		67.4%
11	Percentage of schools which do not use the school management program to the total number of schools which do not use the program	11-1 this program is not available	72.9%
		11-2 lack of training	59.3%

No.	Indicator		Percentage
12	Percentage of schools which use computerized programs in processing administrative practices other than the school management program or the educational portal of Oman		22.1%
13	Ratio of computers/school		17.53
14	Ratio of computers to schools which have computers		17.53
15	Ratio of computers used for administrative purposes to the total number of schools which have computers		3.4
16	Ratio of computers used for educational purposes to the total number of schools which have computers		13.9
17	Percentage of computers used for administrative purposes to the total number of computers		19.5%
18	Percentage of computers used for educational purposes to the total number of computers		80.5%
19	Percentage of schools which have learning resource centers		40.9%
20	Percentage of schools which have computer laboratories		9.9%
21	Percentage of schools which have computers inside classrooms		9.4%
22	Percentage of schools which have periodical maintenance to their computers		97.8%
23	Percentage of schools which receive instructions from any source on how to use computers		65.2%
24	Percentage of schools which are connected to the internet		87.8%
25	Percentage of schools which are not connected to the internet		12.2%
26	Percentage of schools which are not connected to the internet according to certain reasons	26-1 no internet coverage	50%
		26-2 social and cultural reasons	4.6%
		26-3 high prices of equipments and services	31.8%
		26-4 lack of knowledge/skills	0%
		26-5 language barrier	4.6%
		26-6 no need for the internet	18.2%

No.	Indicator	Percentage
27	27-1 ISDN	3.8%
	27-2 DSL	42.1%
	27-3 Cable Modem	14.5%
	27-4 Mobile Broadband	24.5%
	27-5 Other	15.1%
28	Percentage of schools connected to the internet	30.2%
29	Ratio student/computer	12.1
30	Percentage of schools which have intranet	51.4%
31	Percentage of schools which have radio (one or more) used for educational purposes	33.1%
32	Percentage of schools which have televisions (one or more) used for educational purposes	33.1%
33	Ratio student/computer in computer laboratories	1
34	Ratio student/computer in learning resource centers	2
35	Percentage of schools which provide training courses/workshops to administrative and teaching staff in the field of information and communication technology	46.4%

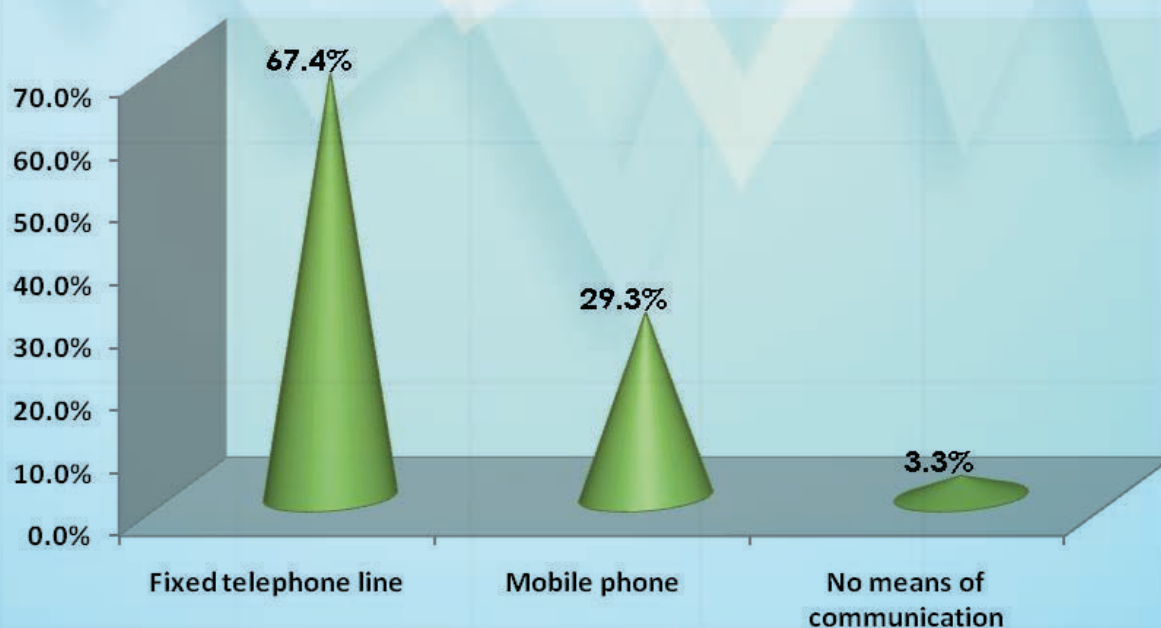


Figure (51): Graph representing the percentage of private schools according to means of communication

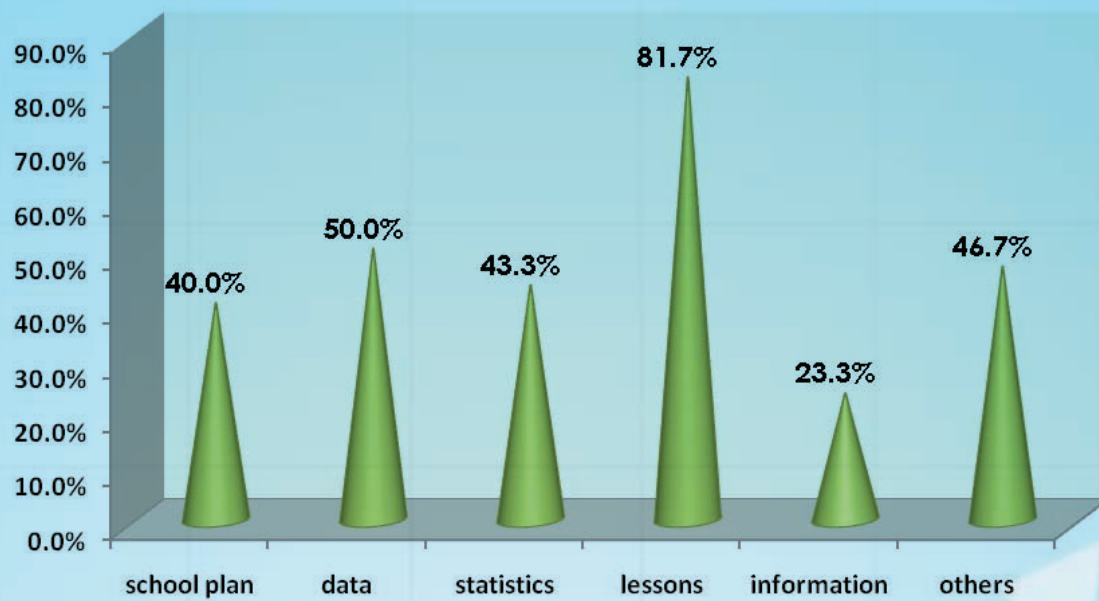


Figure (52): Graph representing percentage of private schools which have web sites on the internet according to services provided by web sites

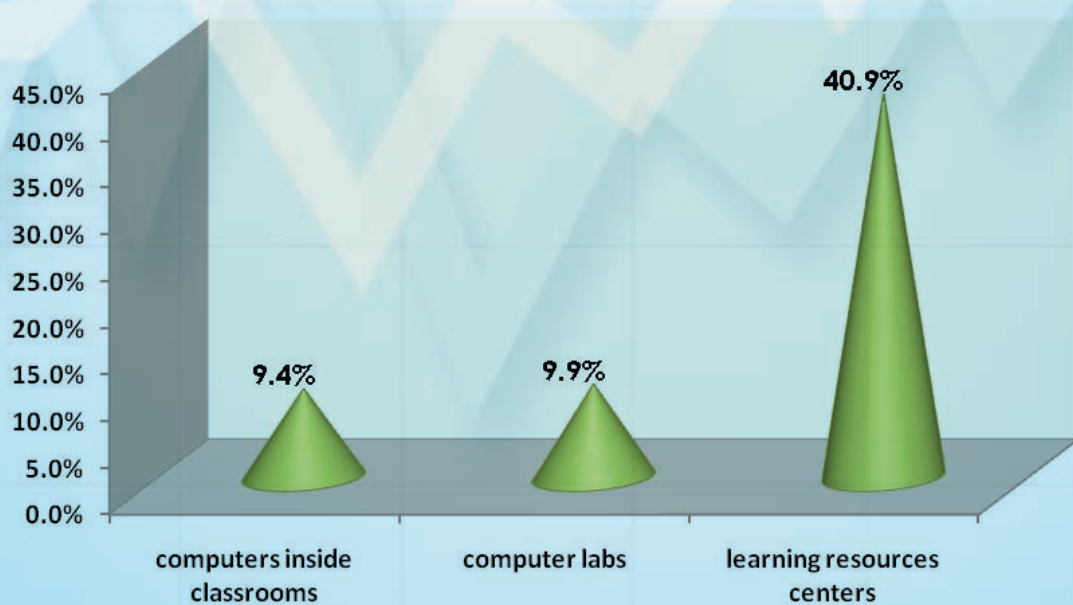


Figure (53): Graph representing percentage of private schools which have learning resource centers, computer labs and computers inside classrooms

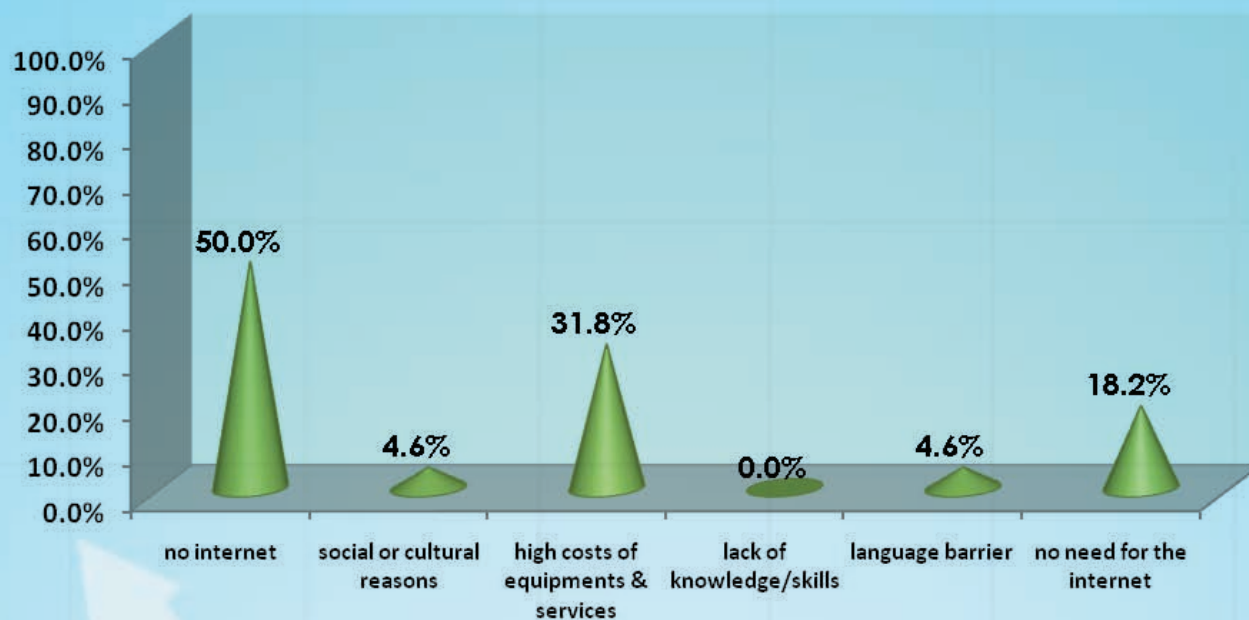


Figure (54): Graph representing the percentage of private schools which are not connected to the internet according to reasons of non-connection

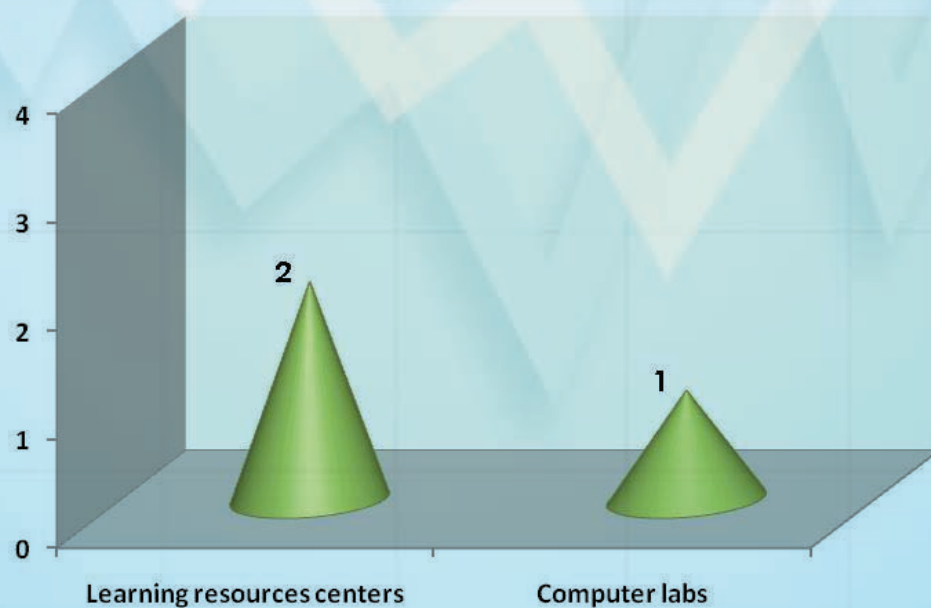
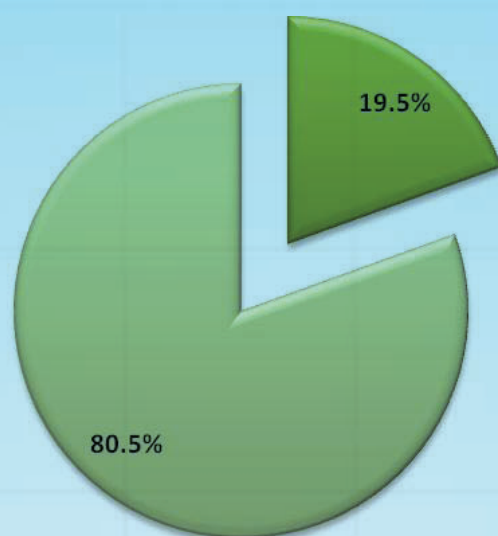
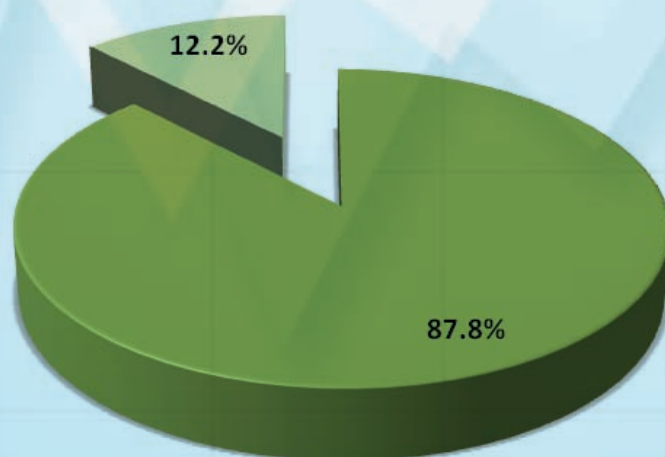


Figure (55): Graph representing the ratio of students/computers in learning resource centers and computers labs in private schools



■ administrative purposes ■ educational purposes

Figure (56) representing the percentage of computers used in private schools according to purpose of usage



■ connected ■ not connected

Figure (57): A pie chart representing the percentage of private schools which are connected to the internet to the total number of schools

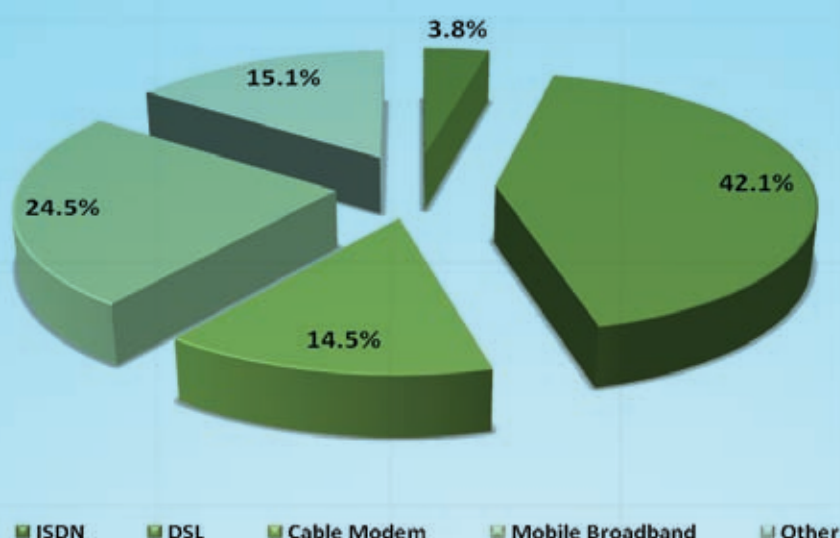


Figure (58): A pie chart representing the percentage of private schools which are connected to the internet according to communication service to the total number of schools connected to the internet

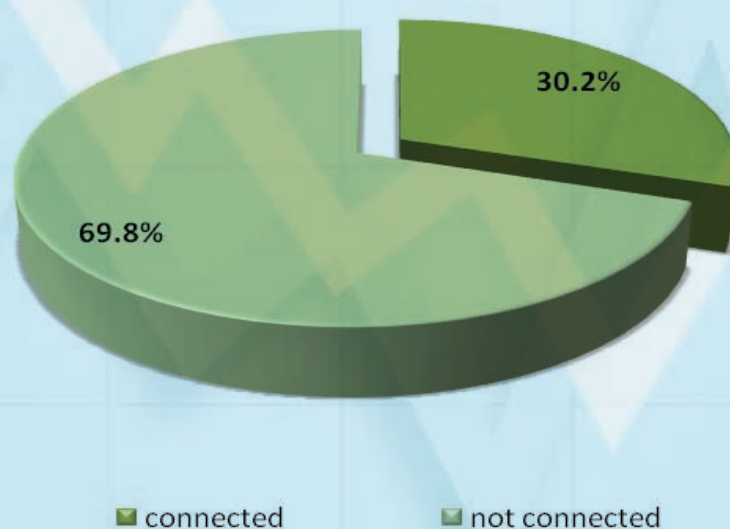


Figure (59): A pie chart representing the percentage of computers connected to the internet as from the total number of computers

Indicators of private schools shown in table (11) seem to be generally relieving. They are mostly similar to the indicators of government schools. The percentage of schools which have computers inside classrooms is 9.4%. therefore, it is essential to take appropriate actions to encourage private schools to increase numbers of computers at their disposal so that the Sultanate of Oman can cope – at least- with the other Gulf countries' indicators in this field.

2.2. Administrative and teaching staff indicators

Table (12) shows indicators of the percentage of administrative and teaching staff in private schools in the Sultanate of Oman.

**Table (12) Indicators of
administrative and teaching staff of private schools (n= 2512)**

No.	Indicator	Percentage
1	Percentage of administrative and teaching staff who have an specialized academic qualification in information and communication technology to the total number of staff.	20.5%
2	Percentage of administrative and teaching staff who have diplomas in information and communication technology to the total number of staff.	8.3%
3	Percentage of administrative and teaching staff who have bachelor degrees in information and communication technology to the total number of staff.	11.1%
4	Percentage of administrative and teaching staff who have master's degrees in information and communication technology to the total number of staff.	1%
5	Percentage of administrative and teaching staff who have doctorates in information and communication technology to the total number of staff.	0.1%
6	Percentage of trained administrative and teaching staff in information and communication technology in education to the total number of staff.	47.7%
7	Percentage of administrative and teaching staff who have mobile telephones to the total number of staff.	99.8%
8	Percentage of administrative and teaching staff who use digital cameras to the total number of staff.	85%
9	Percentage of administrative and teaching staff who the internet to the total number of staff	81.7%
10	Percentage of administrative and teaching staff who have active electronic mail accounts to the total number of staff	67.6%
11	Percentage of administrative and teaching staff who use electronic mail to communicate with students to the total number of staff	12%
12	Percentage of administrative and teaching staff who have personal computers at home to the total number of staff	90.9%



No.	Indicator		Percentage
13	Percentage of administrative and teaching staff who do not have personal computers at home due to different reasons.	13-1 high cost	49.8%
		13-2 social reason	14.4%
		13-3 lack of sufficient knowledge	16.6%
		13-4 waste of time	4.4%
		13-5 language barrier	0.1%
		13-6 no need	14%
14	Percentage of administrative and teaching staff who have an internet connection at home to the total number of staff.		78.6%
15	Percentage of administrative and teaching staff who use Oman educational portal to the total number of staff.		56.1%
16	Percentage of administrative and teaching staff who use the school management program to the total number of staff.		34.6%
17	Percentage of administrative and teaching staff who use computers for educational purposes to the total number of staff.		62.9%
18	Percentage of administrative and teaching staff who use television for educational purposes to the total number of staff.		58.2%
19	Percentage of administrative and teaching staff who use radio for educational purposes to the total number of staff.		47.1%
20	Percentage of administrative and teaching staff who use computer laboratories for educational purposes to the total number of staff.		41.5%
21	Percentage of administrative and teaching staff who use learning resource centers for educational purposes to the total number of staff.		70.7%
22	Percentage of administrative and teaching staff who use educational software to the total number of staff		16.1%

IT Specializations

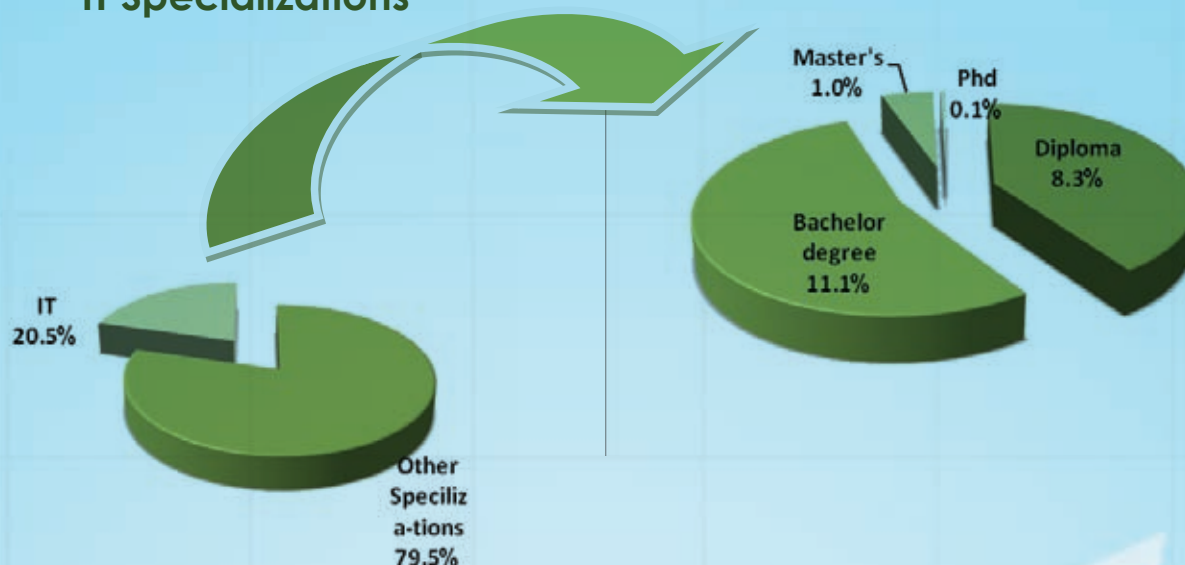


Figure (60) : Representing the percentage of private schools administrative and teaching staff who have specialized academic qualifications in the field of ICT to the total number of the staff

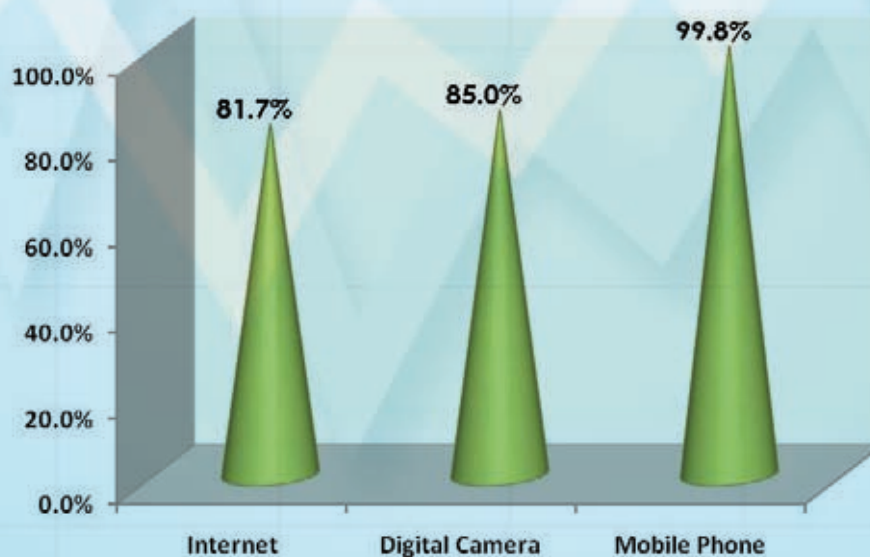


Figure (61): Graph representing the percentage of private schools administrative and teaching staff who use modern technologies in communicating with others to the total number of staff

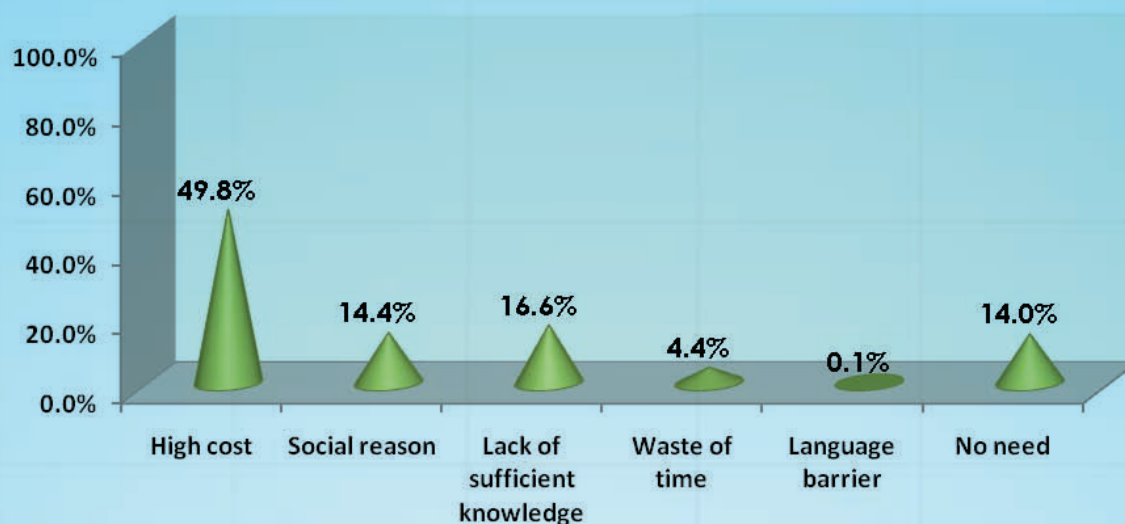


Figure (62): Graph representing percentage of administrative and teaching staff in private schools who do not have personal computers at home due to different reasons

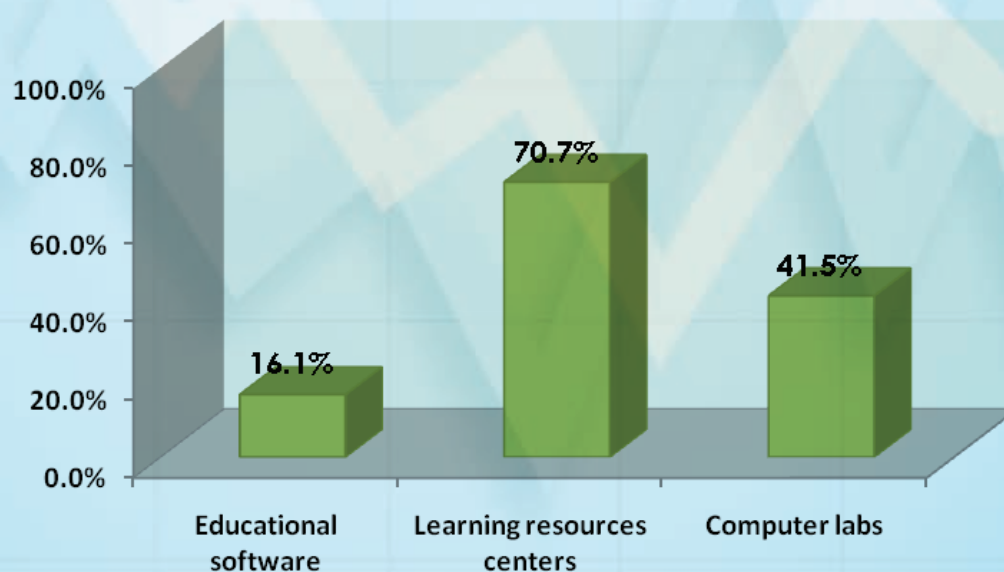
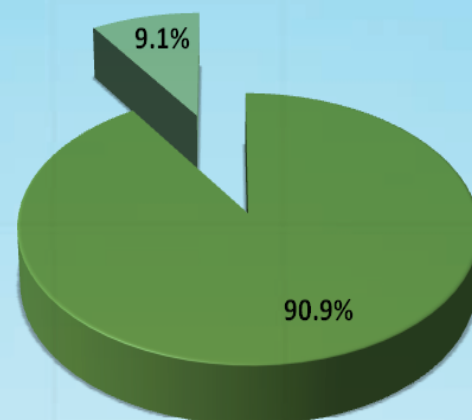


Figure (63) Graph representing percentage of administrative and teaching staff of private schools who use learning resource centers, computer laboratories and educational software for educational purposes to the total number of staff



■ have computer at home
 ■ do not have computer at home

Figure (64) representing the percentage of administrative and teaching staff of private schools who have personal computers at home

The indicators of administrative and teaching staff of private schools shown in table (12) seem to be in general moderate or modest. The 12%, for instant, of administrators and teachers who use electronic mail to communicate with students is a low indicator, especially if we take into consideration the fact that electronic mail is widely used at present. If this percentage is added to the 16.1 % of those who use educational software , then it becomes necessary to encourage private schools to rehabilitate and train their teachers, headmasters and technicians in the field of technology so as to upgrade their relevant indicators in the future, since the percentage of private schools which offer training courses/workshops in the field of ICT for the administrative and teaching staff is only 46.4% and it is the lowest in Oman when compared to the total number of schools (see table "11").

2.3. Students' Indicators

Table (13) shows private schools students' indicators according to percentage of possession and use of information and communication technology:

Table (8)
Indicators of students in
Private schools in the Sultanate of Oman (n=30369)

No.	Indicator		Percentage
1	Percentage of students who have mobile telephones to the total number of students.		30.7%
2	Percentage of students who have computers at home to the total number of students.		70.7%
3	Percentage of students who use computers to the total number of students.		92%
4	Percentage of students who use computers according to location of use to the total number of students	at school	79.7%
		at home	67.0%
		in other places	17.9%
5	Percentage of students who can use computers at schools to do activities and school assignments to the total number of students		31.4%
6	Percentage of students who can use digital cameras to the total number of students.		43.9%
7	Percentage of students who can establish a web page to the total number of students.		9.2%
8	Percentage of students who use the internet according to location of use to the total number of students	at school	27.2%
		at home	43.0
		at other places	12.8%
9	Percentage of students who use the internet according to purpose of use to the total number of students who use the internet	to obtain information	36.9%
		for entertainment	48.2%
		to have access to the portal	7.4%
		for study	28.4%
		to communicate with others	22.4%
10	Percentage of number of periods per week in which students use computers in schools to the total number of weekly periods.		5%
11	Percentage of number of periods per week in which students use the internet in schools to the total number of weekly periods.		5%

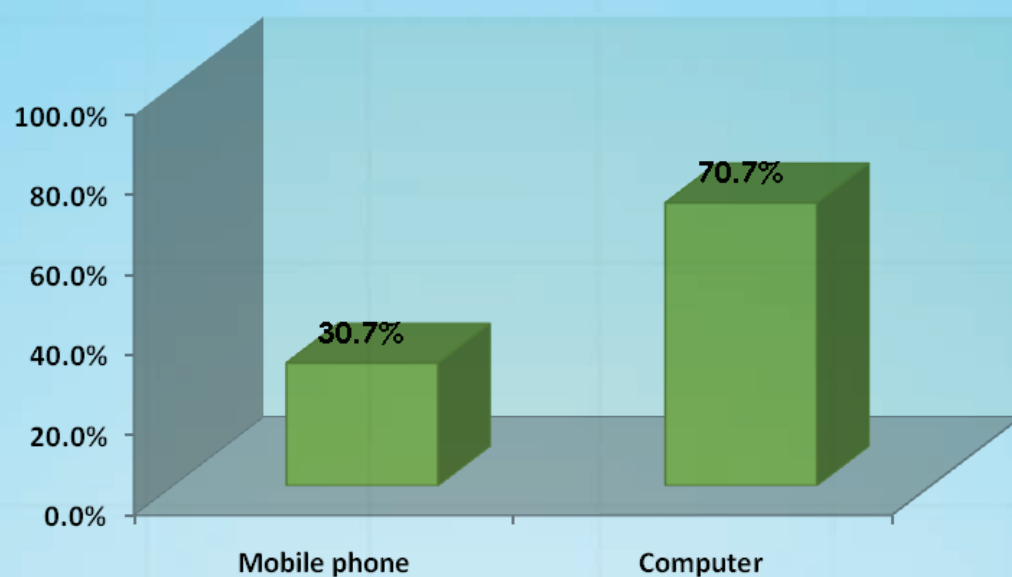


Figure (65) : Graph representing the percentage of students of private schools who have technological devices to the total number of students

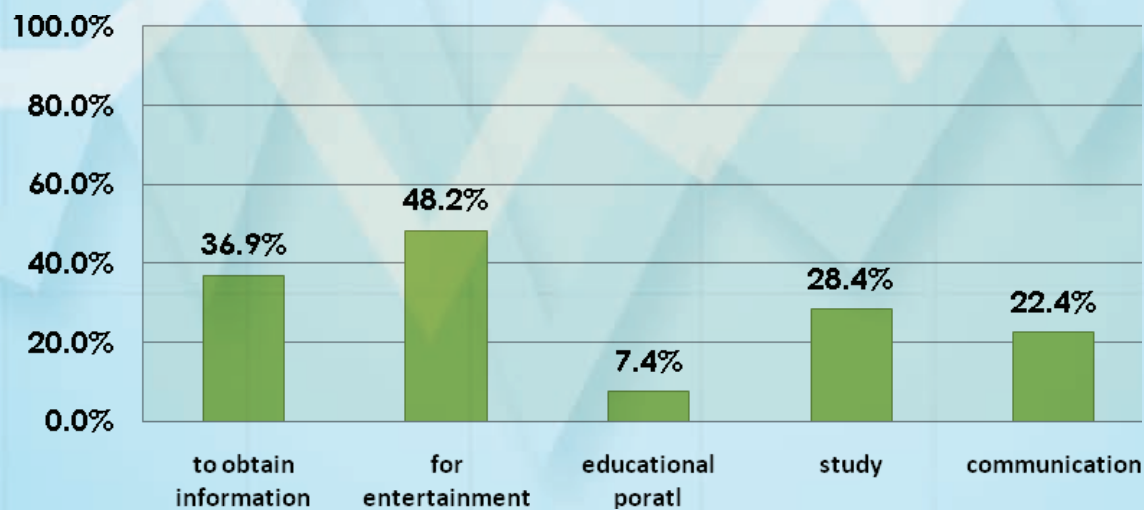
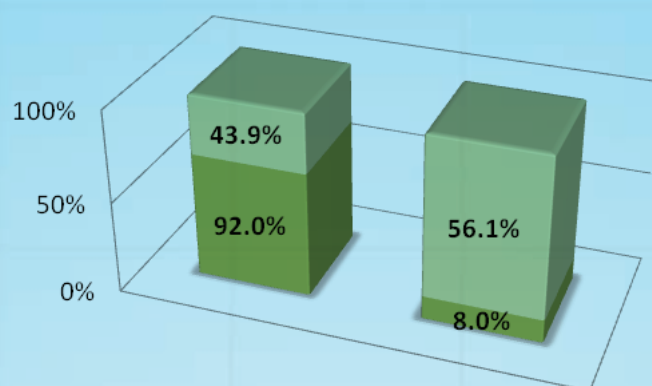


Figure (66): Graph representing the percentage of students of private schools who use the internet according to purpose of usage to the total number of students who use the internet



	use	do not use
digital camera	43.9%	56.1%
computer	92.0%	8.0%

Figure (67): Graph representing the percentage of students of private schools who use computers and digital cameras to the total number of students

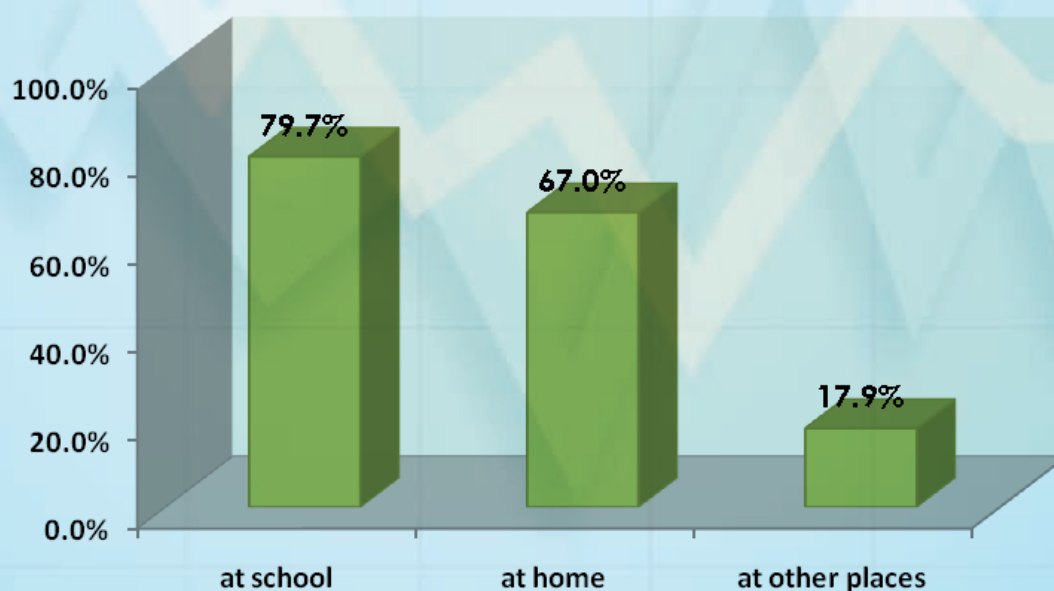


Figure (68): Graph representing the percentage of students of private schools who use computers according to locations to the total number of students who use computers

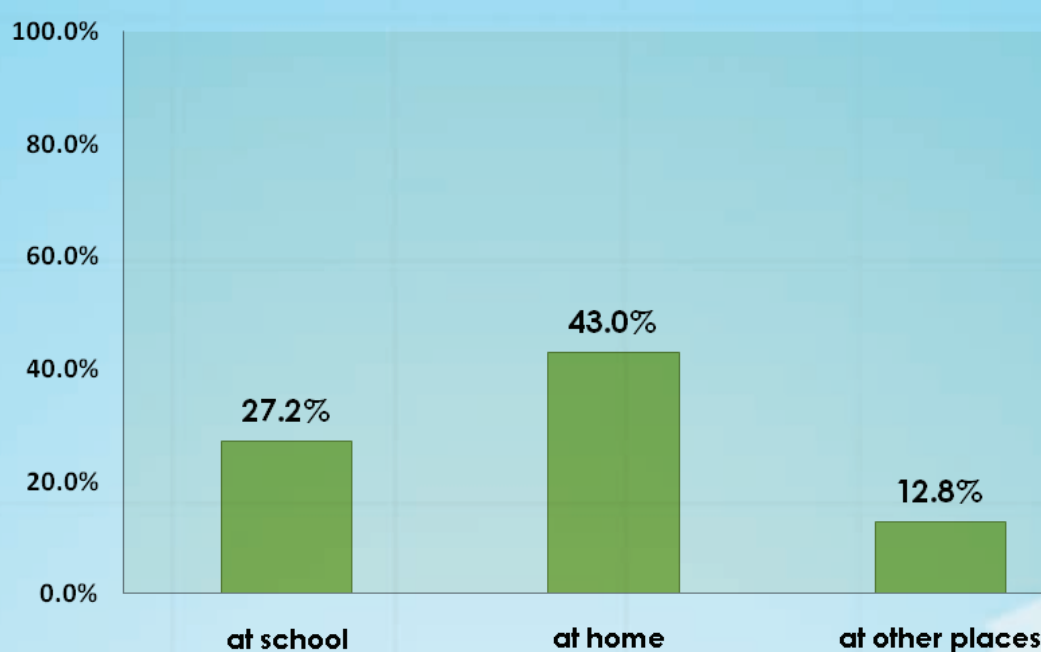


Figure (69): Graph representing the percentage of students of private schools who use the internet for different purposes according to location of use to the total number of students

It is obvious from table (13) that the indicators of students of private schools indicate that they somehow fall behind their colleagues of public schools with regard to availability of technologies and to their use of these technologies, despite the fact that the number of weekly periods allocated to them for using the internet is high. The percentage of students who can use computers in doing their school activities and assignments to the total number is low (only 31.4%) and there is no great difference of that recorded by government schools. These results require setting plans to increase using computers and providing them to private schools students.

Third: Outcomes of International Schools

3.1. School Indicators

Table (14) shows schools' indicators as per the percentages of availability of technology in international schools in the Sultanate of Oman.

General Indicators of International Schools in Oman (n=27)

No.	Indicator		Percentage
1	Percentage of schools which have fixed telephone line or mobile phone of total number of schools		96.3%
2	Percentage of schools which have fixed telephone line		96.3%
3	Percentage of schools which have mobile phone		0%
4	Percentage of schools which have fixed telephone line and mobile phone of total number of schools		0%
5	Percentage of schools which have no communication means		3.7%
6	Percentage of schools which have web sites on the internet		63%
7	Percentage of schools which have web sites on the internet as per the services provided by the web site	7-1 school plan	35.3%
		7-2 data	35.3%
		7-3 statistics	41.2%
		7-4 lessons	100%
		7-5 information	23.5%
		7-6 others	53%
8	Percentage of schools which use the educational portal of Oman		37%
9	Percentage of schools which do not use the educational portal of Oman for certain reasons	9-1 the portal is not available	64.7%
		9-2 the internet	5.9%
		9-3 others	29.4%
10	Percentage of schools which use the school management program		7.4%

No.	Indicator		Percentage
11	Percentage of schools which do not use the school management program due to the fact that this program is not available of the total number of schools which do not use the program	11-1 this program is not available	96%
		11-2 lack of training	12%
12	Percentage of schools which use computerized programs in processing administrative practices other than the school management program or the educational portal of Oman		44.4%
13	Ratio of computers/school		114.6
14	Ratio of computers to schools which have computers		114.6
15	Ratio of computers used for administrative purposes to the total number of schools which have computers		13.1
16	Ratio of computers used for educational purposes to the total number of schools which have computers		101.5
17	Percentage of computers used for administrative purposes to the total number of computers		11.5%
18	Percentage of computers used for educational purposes to the total number of computers		88.5%
19	Percentage of schools which have learning resource centers		44.4%
20	Percentage of schools which have computer laboratories		100%
21	Percentage of schools which have computers inside classrooms		44.4%
22	Percentage of schools which have periodical maintenance to their computers		96.3%
23	Percentage of schools which receive instructions from any source on how to use computers		22.2%
24	Percentage of schools which are connected to the internet		92.6%
25	Percentage of schools which are not connected to the internet		7.4%



No.	Indicator		Percentage
26	Percentage of schools which are not connected to the internet according to certain reasons	26-1 no internet coverage	100%
		26-2 social and cultural reasons	100%
		26-3 high prices of equipments and services	50%
		26-4 lack of knowledge/skills	100%
		26-5 language barrier	0%
		26-6 no need for the internet	100%
27	Percentage of schools connected to the internet according to connection service	27-1 ISDN	0%
		27-2 DSL	100%
		27-3 Cable Modem	0%
		27-4 Mobile Broadband	0%
		27-5 Other	0%
28	Percentage of computers connected to the internet		49.1%
29	Ratio student/computer		10.9
30	Percentage of schools which have intranet		63%
31	Percentage of schools which have radio (one or more) used for educational purposes		85.2%
32	Percentage of schools which have televisions (one or more) used for educational purposes		96.4%
33	Ratio student/computer in computer laboratories		1
34	Ratio student/computer in learning resource centers		2
35	Percentage of schools which provide training courses/workshops to administrative and teaching staff in the field of information and communication technology		81.5%

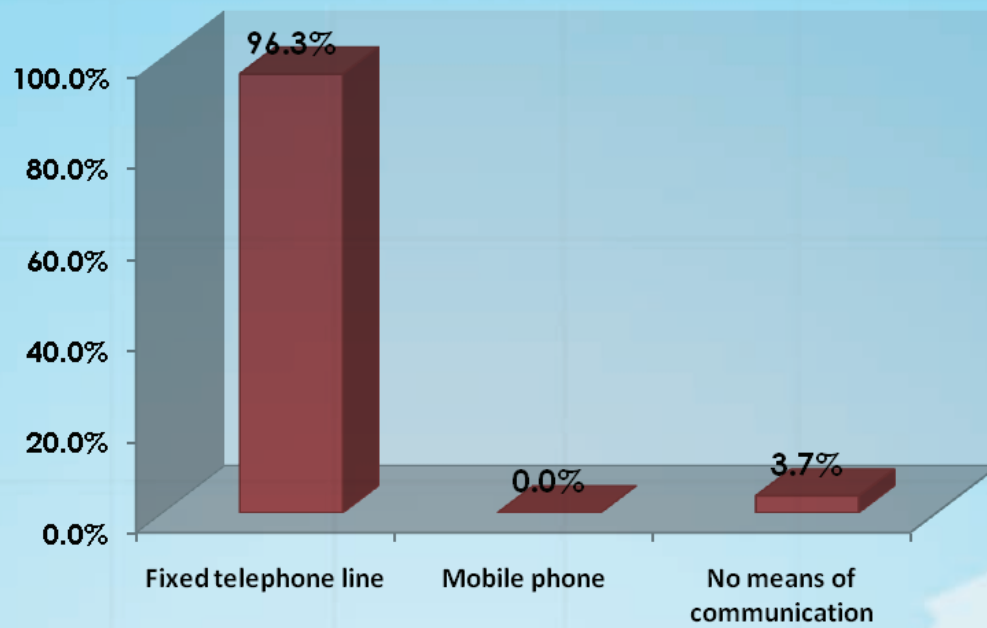


Figure (70): Graph representing the percentage of international schools according to means of communication

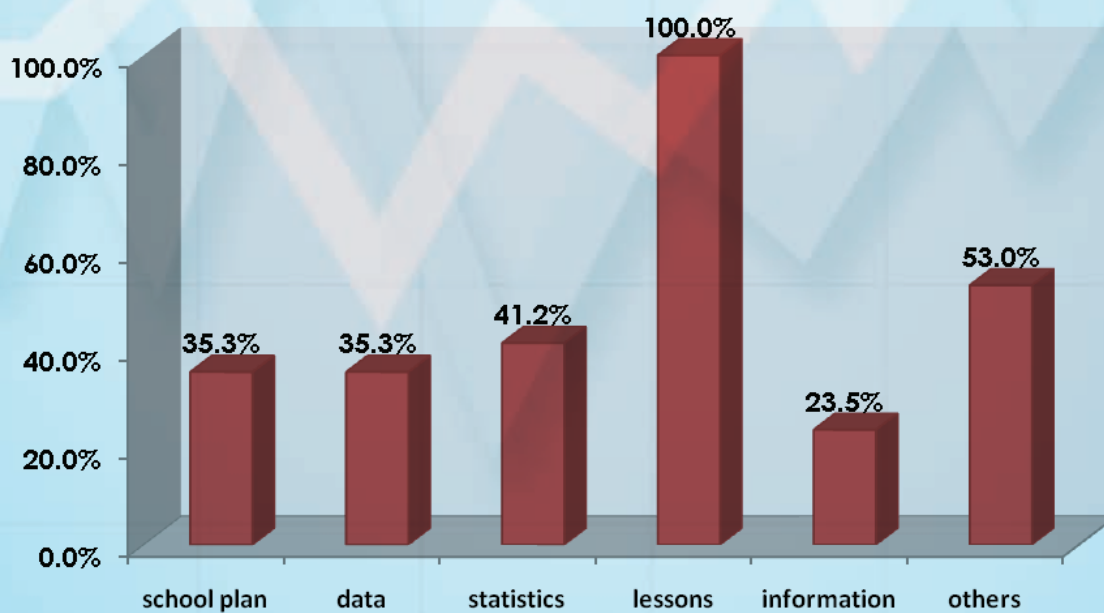


Figure (71): Graph representing percentage of international schools which have web sites on the internet according to services provided by web sites

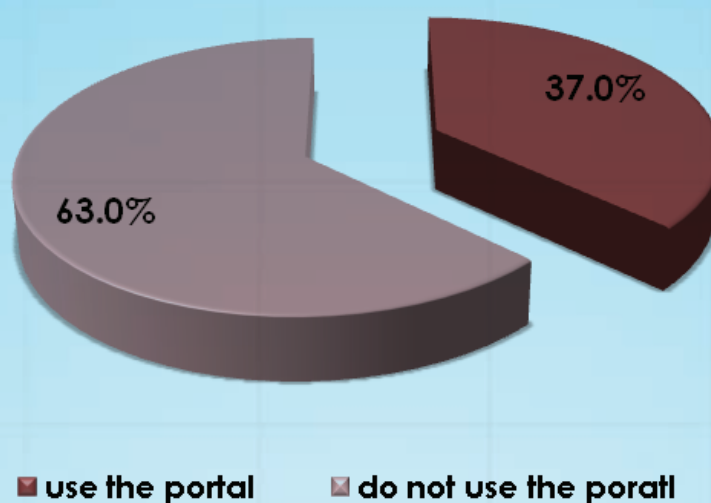


Figure (72) representing the percentage of international schools which use Oman educational portal to the total number of schools

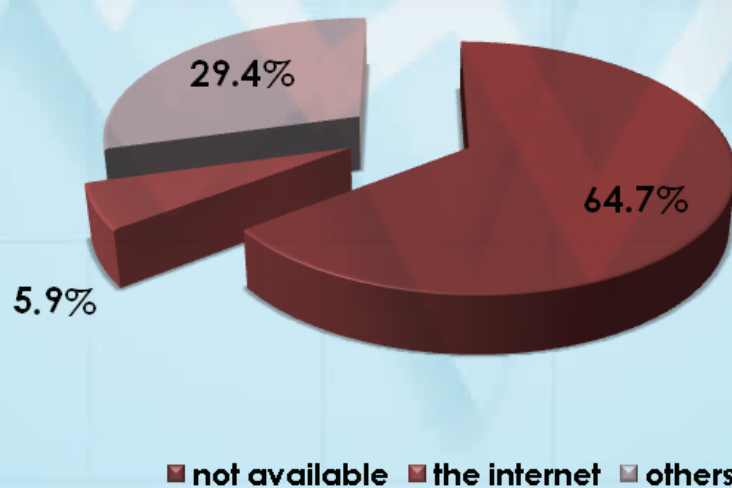
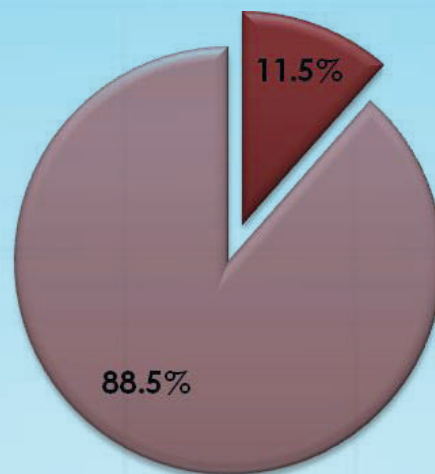
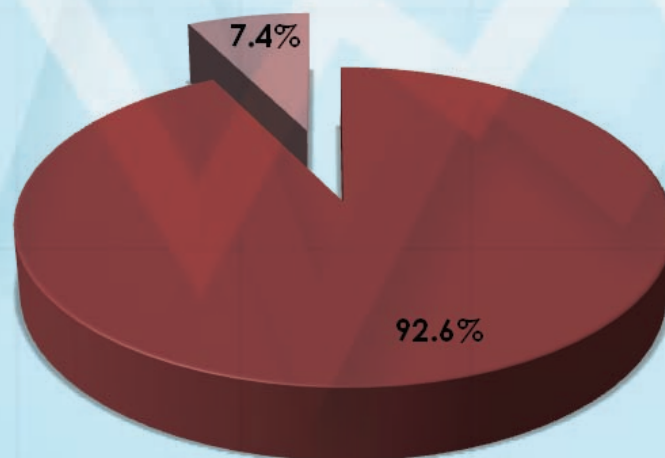


Figure (73): A pie chart representing international schools which do not use Oman educational portal according to reasons of not using it to the total number of schools which do not use Oman educational portal



■ administrative purpose ■ educational purposes

Figure (74) representing the percentage of computers used in international schools according to purpose of usage



■ connected ■ not connected

Figure (75): A pie chart representing the percentage of international schools which are connected to the internet to the total number of schools

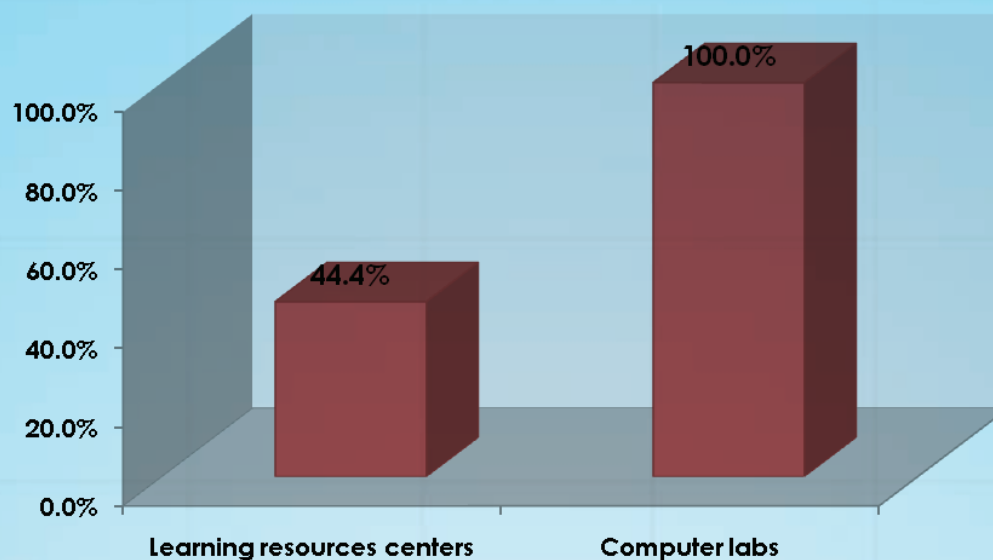


Figure (76): Graph representing percentage of international schools which have computer labs and learning resource centers

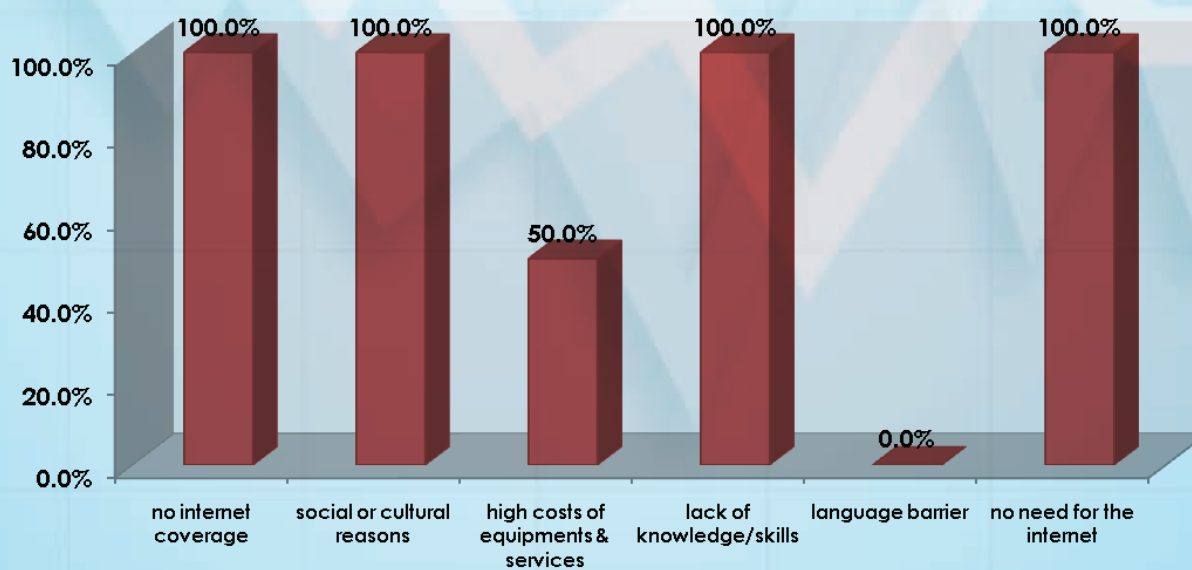


Figure (77): Graph representing the percentage of international schools which are not connected to the internet according to reasons of non-connection

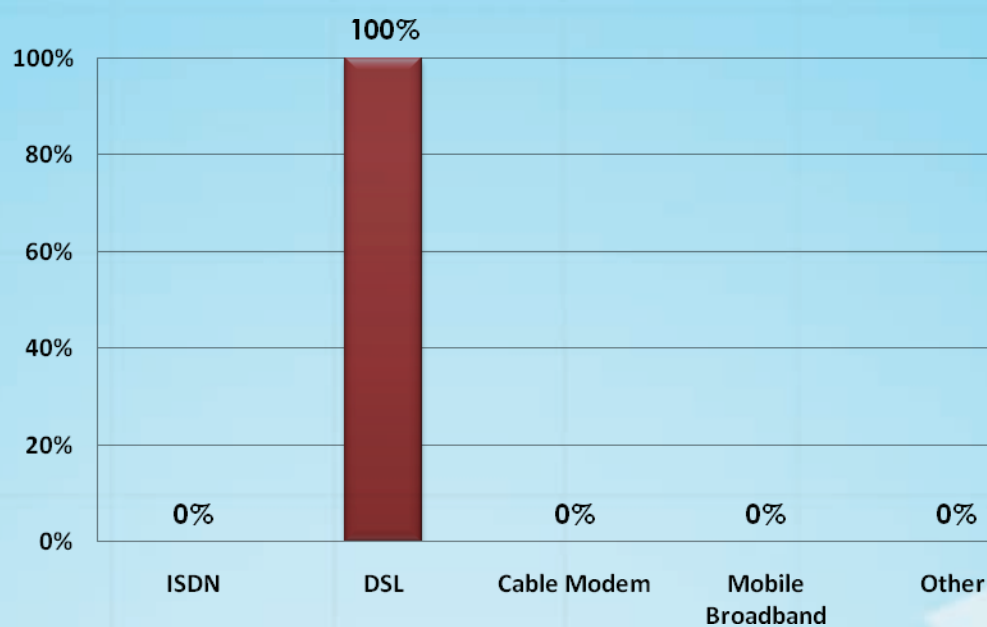


Figure (78): A pie chart representing the percentage of international schools which are connected to the internet according to communication service to the total number of schools connected to the internet

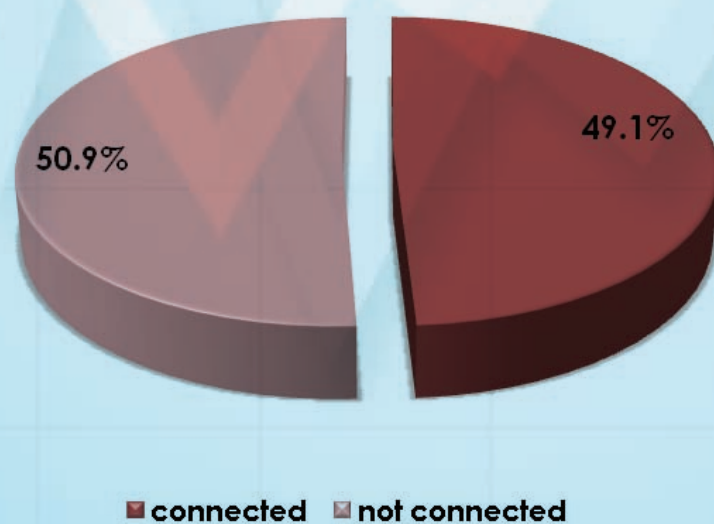


Figure (79): A pie chart representing the percentage of computers which are connected to the internet to the total number of computers in international schools

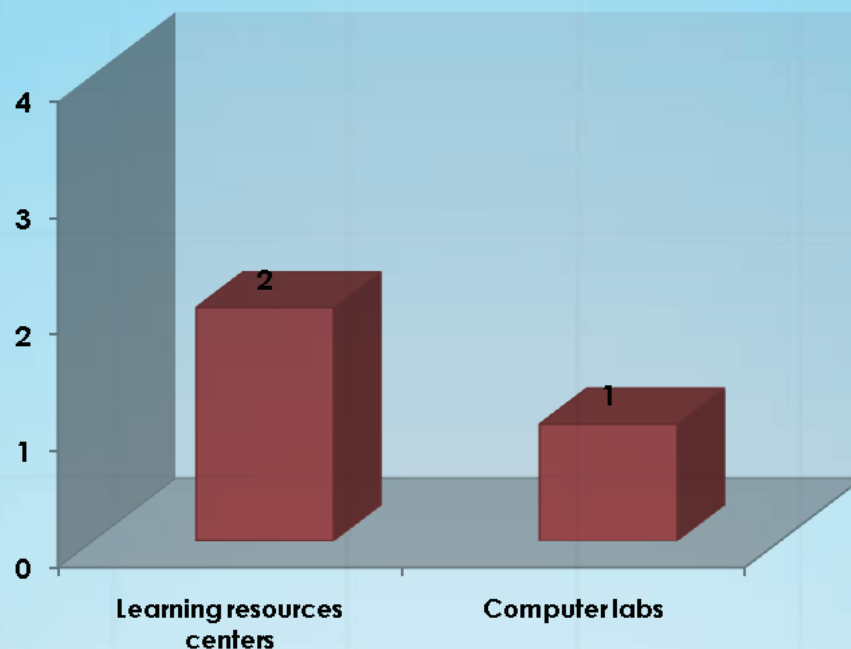


Figure (80) representing the ratio of student/computer in computer labs and LRCs in international schools

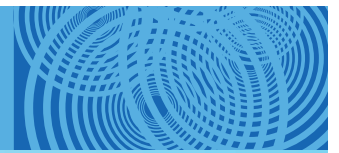
The percentages stated in table (14) indicate that the indicators of international schools are remarkably high. The student/computer ratio is similar to that of government schools of 10.9 . It is observed that the percentage of LRCs in international schools is low (44.4%). Care for training is high (81.5%) and it is the second highest percentage at the Sultanate level. It is recommended that international schools are to be encouraged to continue on the same trend and that they must be connected to Oman educational portal since the percentage for this item is 37% which is considered low when compared to government schools. This is explained by the percentage of 64.7% of non-availability of this service in these schools. Nevertheless, more than half of these schools (63%) have their own websites and 100% of them upload lessons on these sites. These indicators are similar to the reviewed gulf indicators. Among indicators which draw attention is the portion of 7.4% of international schools which are not connected to the internet and that is referred to social and cultural reasons, lack of knowledge, the non coverage of the internet, or to the reason that there is no need for the internet. These indicators require more follow up and investigation.

3.2. Administrative and teaching staff indicators

Table (15) shows indicators of the percentage of administrative and teaching staff with regard to possession and use of ICT in international schools in the Sultanate of Oman.

**Table (15) Indicators of
administrative and teaching staff of international schools (n= 1449)**

No.	Indicator	Percentage
1	Percentage of administrative and teaching staff who have specialized academic qualification in information and communication technology to the total number of staff.	23.6%
2	Percentage of administrative and teaching staff who have diplomas in information and communication technology to the total number of staff.	14.9%
3	Percentage of administrative and teaching staff who have bachelor degrees in information and communication technology to the total number of staff.	3.2%
4	Percentage of administrative and teaching staff who have master's degrees in information and communication technology to the total number of staff.	4.6%
5	Percentage of administrative and teaching staff who have doctorates in information and communication technology to the total number of staff.	0.7%
6	Percentage of trained administrative and teaching staff in information and communication technology in education to the total number of staff.	24.9%
7	Percentage of administrative and teaching staff who have mobile telephones to the total number of staff.	99.1%
8	Percentage of administrative and teaching staff who use digital cameras to the total number of staff.	87.6%
9	Percentage of administrative and teaching staff who use the internet to the total number of staff	86.6%
10	Percentage of administrative and teaching staff who have active electronic mail accounts to the total number of staff	91.8%
11	Percentage of administrative and teaching staff who use electronic mail to communicate with students to the total number of staff	35.1%
12	Percentage of administrative and teaching staff who have personal computers at home to the total number of staff	92%



13	Percentage of administrative and teaching staff who do not have personal computers at home due to different reasons.	13-1 high cost	47.4%
		13-2 social reason	2.6%
		13-3 lack of sufficient knowledge	20.3%
		13-4 waste of time	3.4%
		13-5 language barrier	0.01%
		13-6 no need	36.2%
14	Percentage of administrative and teaching staff who have an internet connection at home to the total number of staff.		79.4%
15	Percentage of administrative and teaching staff who use Oman educational portal to the total number of staff.		12.1%
16	Percentage of administrative and teaching staff who use the school management program to the total number of staff.		3.9%
17	Percentage of administrative and teaching staff who use computers for educational purposes to the total number of staff.		67.9%
18	Percentage of administrative and teaching staff who use television for educational purposes to the total number of staff.		63.6%
19	Percentage of administrative and teaching staff who use radio for educational purposes to the total number of staff.		38.2%
20	Percentage of administrative and teaching staff who use computer laboratories for educational purposes to the total number of staff.		29.5%
21	Percentage of administrative and teaching staff who use learning resource centers for educational purposes to the total number of staff.		87.8%
22	Percentage of administrative and teaching staff who use educational software to the total number of staff		27.1%

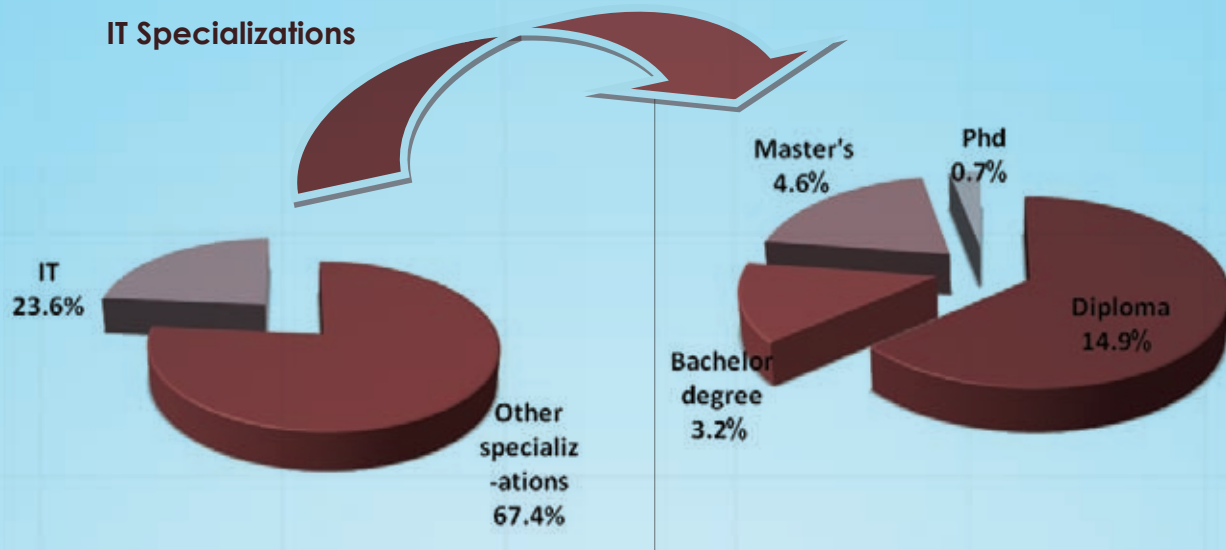


Figure (81) representing the percentage of international schools administrative and teaching staff who have specialized academic qualifications in the field of ICT to the total number of the staff

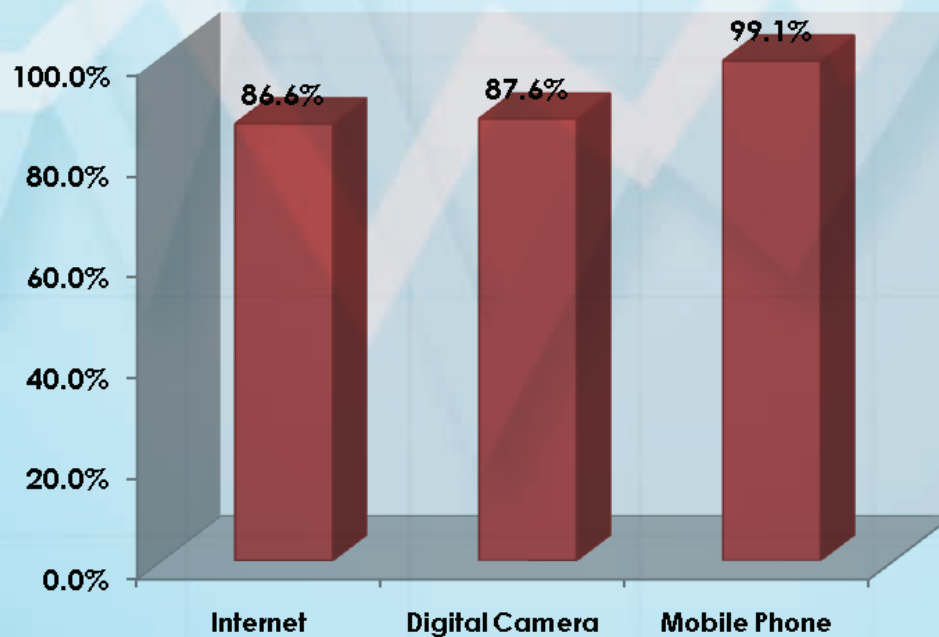
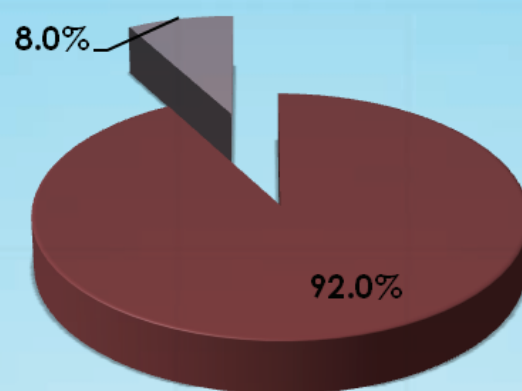


Figure (82): Graph representing the percentage of international schools administrative and teaching staff who use modern technologies in communicating with others to the total number of staff



■ have computers at home ■ do not have computers at home

Figure (83) representing the percentage of administrative and teaching staff of international schools who have personal computers at home

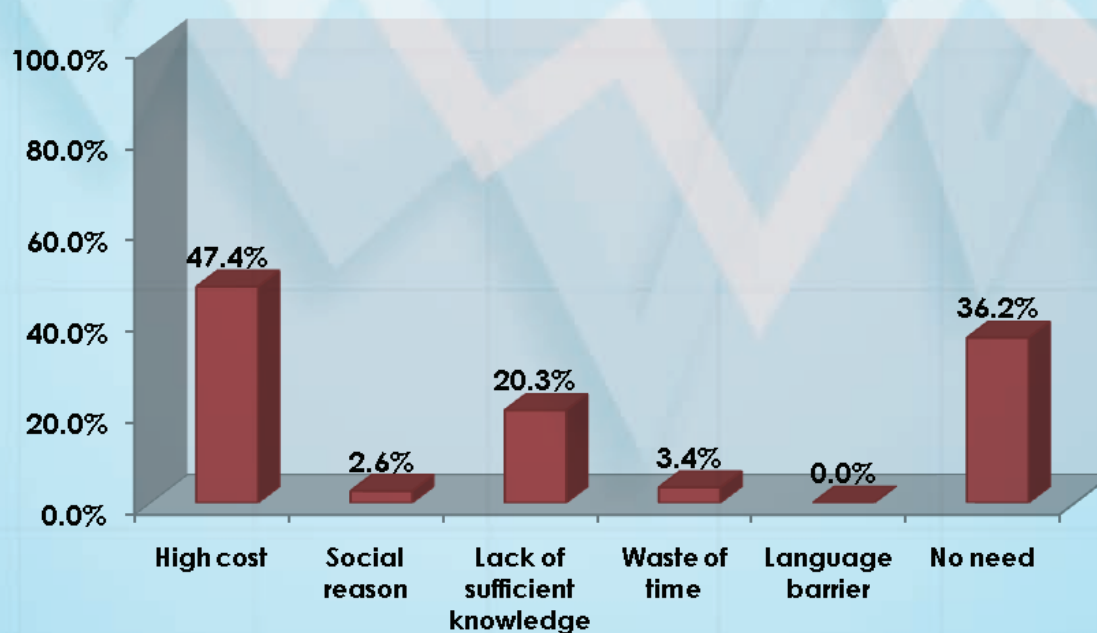


Figure (84): Graph representing percentage of administrative and teaching staff of international schools who do not have personal computers at home due to different reasons

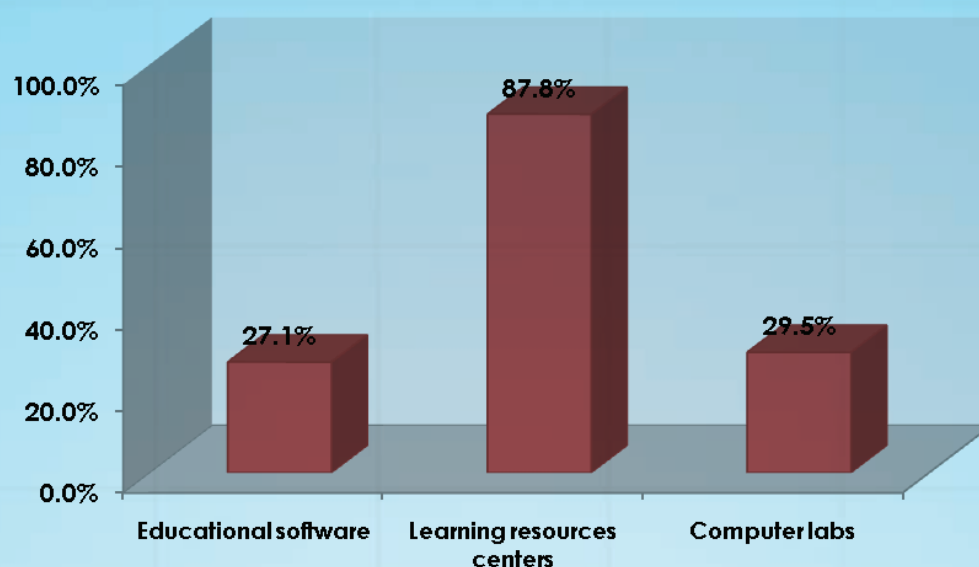


Figure (85) : A graph representing the percentage of administrative and teaching staff of international schools who use learning resource centers, computer laboratories and educational software for educational purposes to the total number of staff

Table (15) shows that the indicators of teaching and administrative staff of international schools are generally good, although the percentage of those who use educational software is low (27.1%) and these are similar to indicators recorded in government and private schools. Furthermore, the percentage of teaching and administrative staff of international schools who use computer laboratories for educational purposes (29.5%) is also low. This may be due to the fact that the number of these laboratories is limited as stated above. The international schools are characterized by their high percentage of those who use learning resource centers (87.8%) when compared to their counterparts in private and government schools. It seems, from these indicators, that the educational usages and employments of software and technical applications remain the field on which focus must be made in the future.

3.3 Students' indicators

Table (16) shows international schools students' indicators according to percentage of possession and use of information and communication technology:

Table (16)
Indicators of students in
International schools in the Sultanate of Oman (n=29872)

No.	Indicator		Percentage
1	Percentage of students who have mobile telephones to the total number of students.		44%
2	Percentage of students who have computers at home to the total number of students.		83%
3	Percentage of students who use computers to the total number of students.		95.5%
4	Percentage of students who use computers according to location of use to the total number of students	at school	84.1%
		at home	80.0%
		in other places	30.5%
5	Percentage of students who can use computers at schools to do activities and school assignments to the total number of students		43.0%
6	Percentage of students who can use digital cameras to the total number of students.		57.9%
7	Percentage of students who can establish a web page to the total number of students.		16.0%
8	Percentage of students who use the internet according to location of use to the total number of students	at school	14.4%
		at home	60.5%
		at other places	27.9%
9	Percentage of students who use the internet according to purpose of use to the total number of students who use the internet	to obtain information	69.9%
		for entertainment	71.3%
		to have access to the portal	23.5%
		for study	56.8%
		to communicate with others	51.9%
10	Percentage of number of periods per week in which students use computers in schools to the total number of weekly periods.		7.5%
11	Percentage of number of periods per week in which students use the internet in schools to the total number of weekly periods.		7.5%

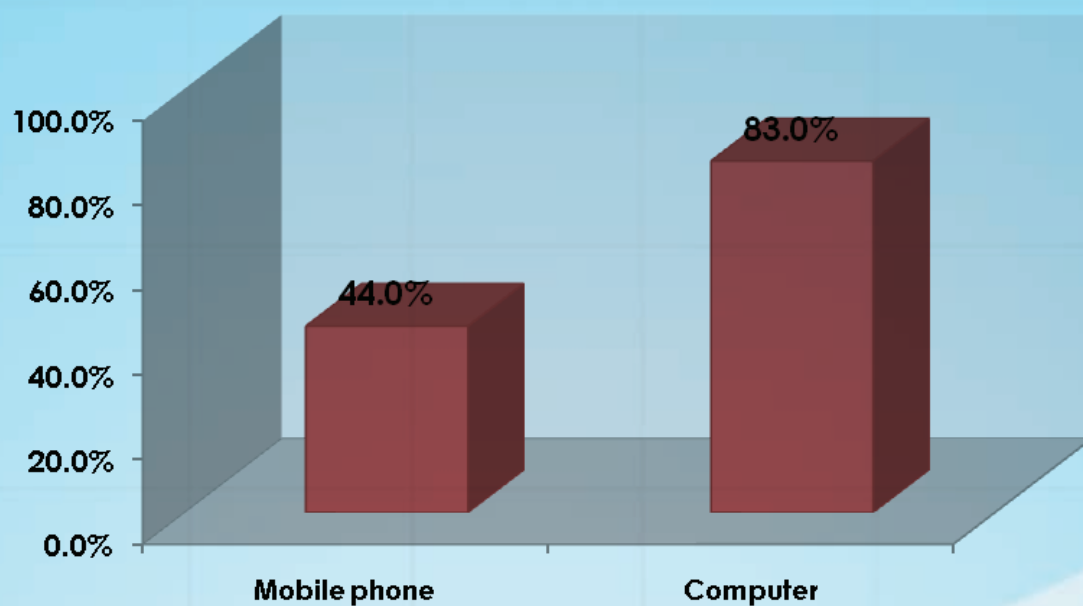
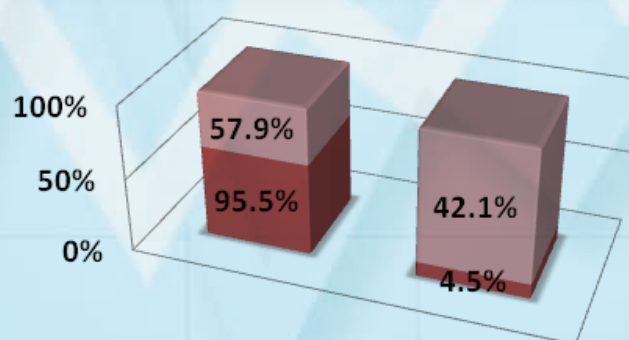


Figure (86): A graph representing students of international schools who have technological devices



	use	do not use
digital camera	57.9%	42.1%
computer	95.5%	4.5%

Figure (87): A graph representing the percentage of international schools students who use computers and digital cameras to the total number of students

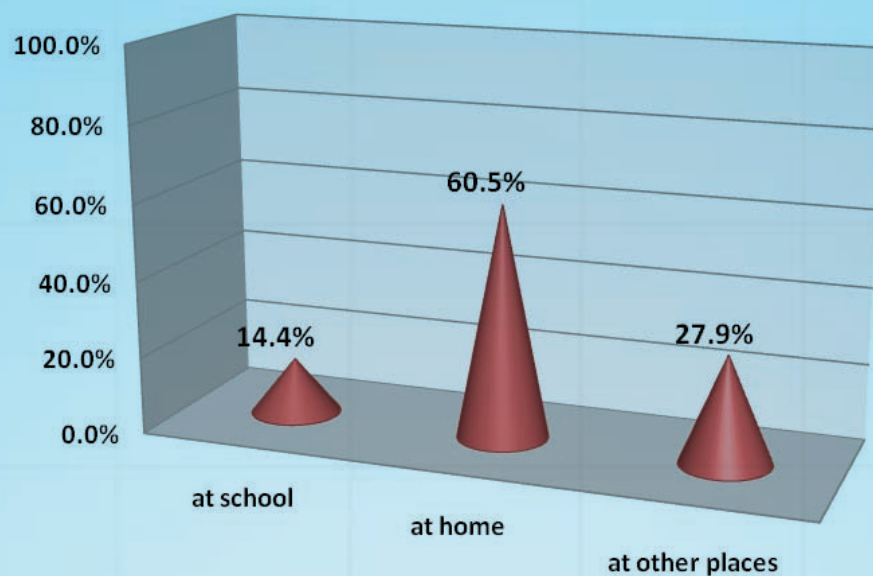


Figure (88): A graph representing students of international schools who use the internet according to locations of usage to the total number of students

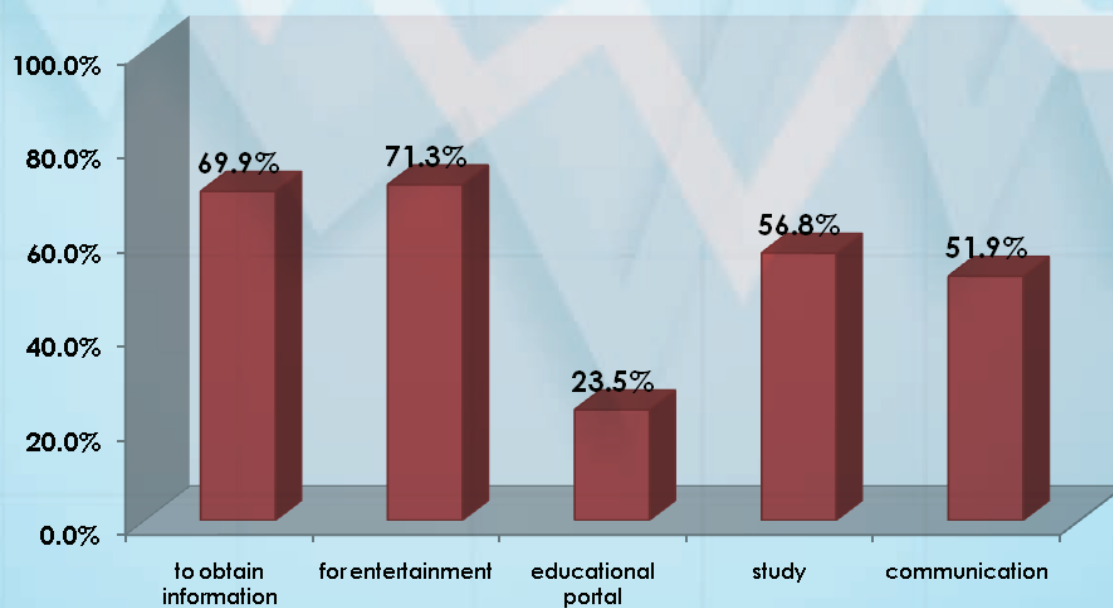


Figure (89): A graph representing the percentage of students of international schools who use the internet according to purposes of usage to the total number of students

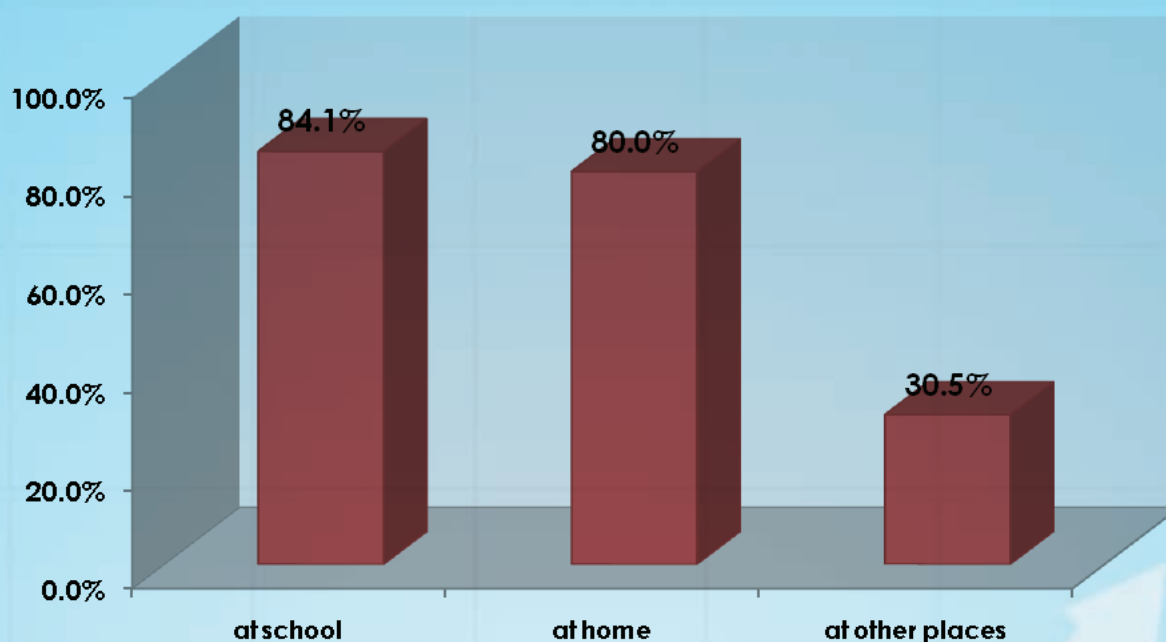


Figure (90): A graph representing international schools students who use computers according to locations of usage

Indicators of international schools students, shown in table (16), are of moderate percentages. The percentage of possessing and using computers are high. Indicators show that number of periods per week during which students use computers and the internet are somehow higher than the number of periods in government and private schools. Attention must be paid to the low percentage of using the internet at school which is only 14.4%. This low percentage may be due to the limited number of computers at learning resource centers. It seems that students use computers only during formal lessons at computer laboratories which record a high percentage of availability of 100%. (see above)

Fourth: Outcomes of Islamic Sciences Institutes

4.1. Institutes Indicators

Table (14) shows institutes' indicators as per the percentages of availability of technology in Islamic Sciences Institutes in the Sultanate of Oman.

General Indicators of Islamic Institutes in Oman (n=4)

No.	Indicator		Percentage
1	Percentage of institutes which have fixed telephone line or mobile phone of total number of schools		75%
2	Percentage of institutes which have fixed telephone line		75%
3	Percentage of institutes which have mobile phone		0%
4	Percentage of institutes which have fixed telephone line and mobile phone of total number of schools		0%
5	Percentage of institutes which have no communication means		25%
6	Percentage of institutes which have web sites on the internet		25%
7	Percentage of institutes which have web sites on the internet as per the services provided by the web site	7-1 school plan	0%
		7-2 data	0%
		7-3 statistics	0%
		7-4 lessons	100%
		7-5 information	0%
		7-6 others	100%
8	Percentage of institutes which use the educational portal of Oman		75%
9	Percentage of institutes which do not use the educational portal of Oman for undefined reasons to the total number of institutes.		100%
10	Percentage of institutes which use the school management program		0%
11	Percentage of institutes which do not use the school management program due to the fact that this program is not available to the total number of schools which do not use the program		100%
12	Percentage of institutes which use computerized programs in processing administrative practices other than the school management program or the educational portal of Oman		50%
13	Ratio of computers/ institute		88.3

No.	Indicator		Percentage
14	Ratio of computers to institutes which have computers		88.3
15	Ratio of computers used for administrative purposes to the total number of institutes which have computers		7.5
16	Ratio of computers used for educational purposes to the total number of institutes which have computers		80.8
17	Percentage of computers used for administrative purposes to the total number of computers		8.5%
18	Percentage of computers used for educational purposes to the total number of computers		91.5%
19	Percentage of institutes which have learning resource centers		0%%
20	Percentage of institutes which have computer laboratories		100%
21	Percentage of institutes which have computers inside classrooms		0%
22	Percentage of institutes which have periodical maintenance to their computers		100%
23	Percentage of institutes which receive instructions from any source on how to use computers		100%
24	Percentage of institutes which are connected to the internet		100%
25	Percentage of institutes which are not connected to the internet		0%
26	Percentage of institutes which are not connected to the internet according to certain reasons	26-1 no internet coverage	0%
		26-2 social and cultural reasons	0%
		26-3 high prices of equipments and services	0%
		26-4 lack of knowledge/skills	0%
		26-5 language barrier	0%
		26-6 no need for the internet	0%
27	Percentage of institutes connected to the internet according to connection service	27-1 ISDN	0%
		27-2 DSL	75%
		27-3 Cable Modem	0%
		27-4 Mobile Broadband	25%
		27-5 Other	0%
28	Percentage of computers connected to the internet		61.5%

No.	Indicator	Percentage
29	Ratio student/computer	9.3
30	Percentage of institutes which have intranet	100%
31	Percentage of institutes which have radio (one or more) used for educational purposes	25%
32	Percentage of institutes which have televisions (one or more) used for educational purposes	100%
33	Ratio student/computer in computer laboratories	1
34	Ratio student/computer in learning resource centers	0
35	Percentage of institutes which provide training courses/workshops to administrative and teaching staff in the field of information and communication technology	50%

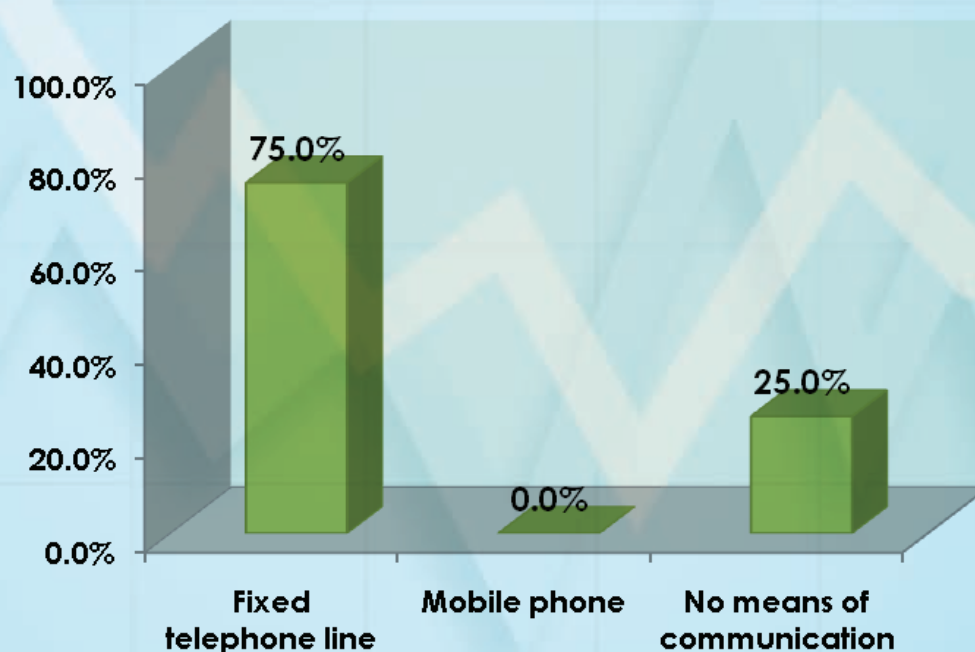


Figure (91): Graph representing the percentage of Islamic Institutes according to means of communication

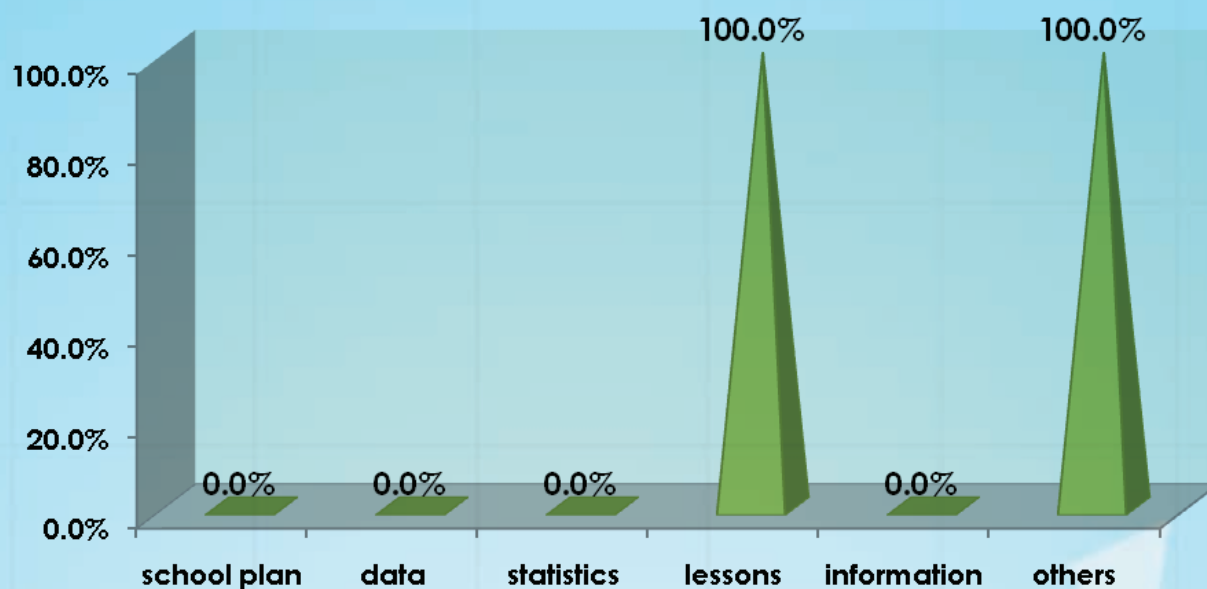


Figure (92): Graph representing percentage of Islamic Institutes which have web sites on the internet according to services provided by web sites

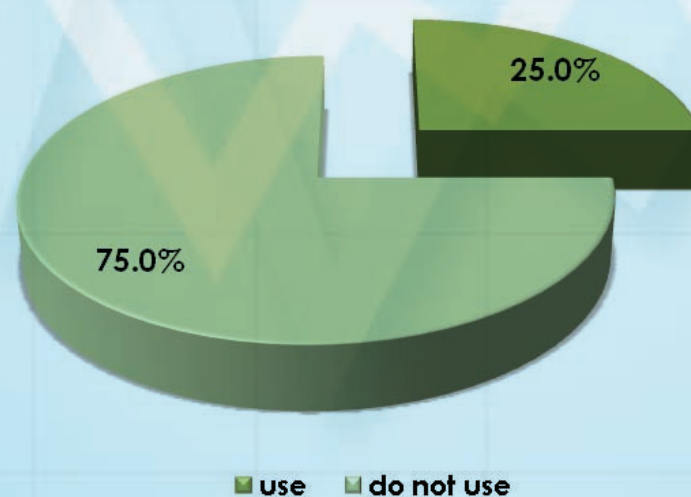


Figure (93) representing the percentage of Islamic Institutes which use Oman educational portal to the total number of schools

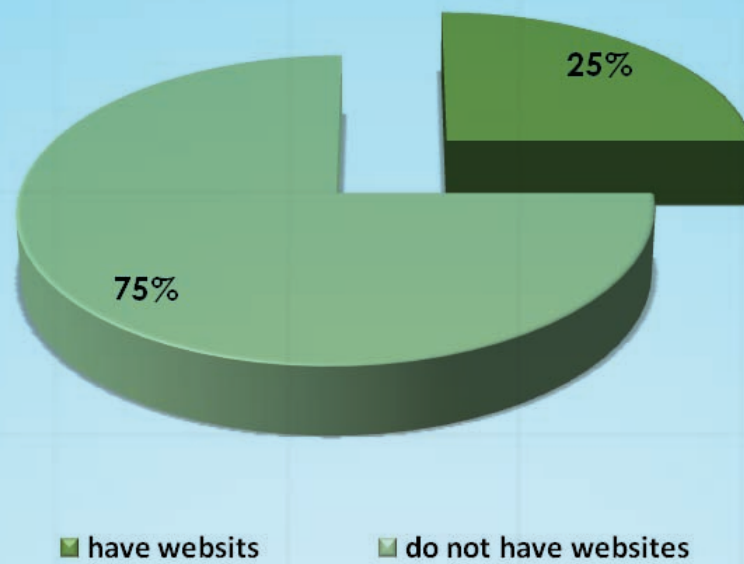


Figure (94): A pie chart representing percentage of Islamic Institutes which have web sites on the internet

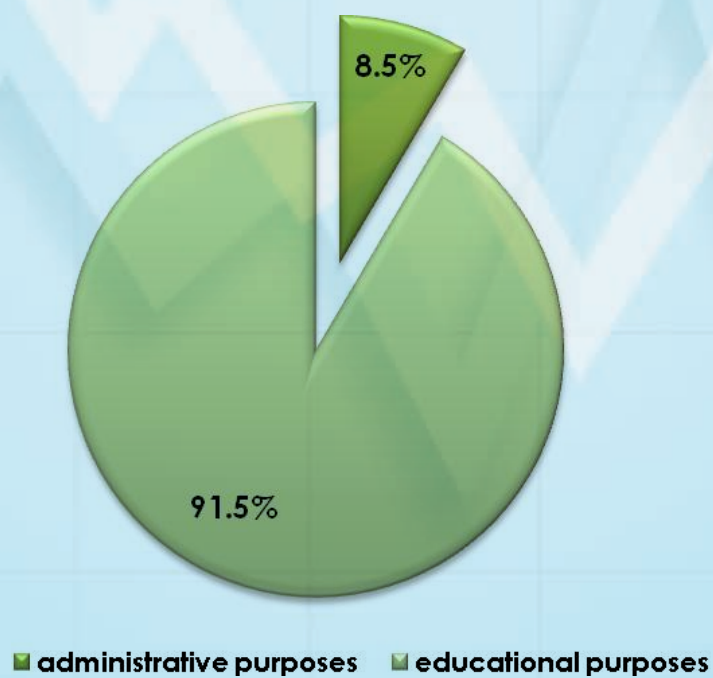


Figure (95) representing the percentage of computers used in Islamic Institutes according to purpose of usage

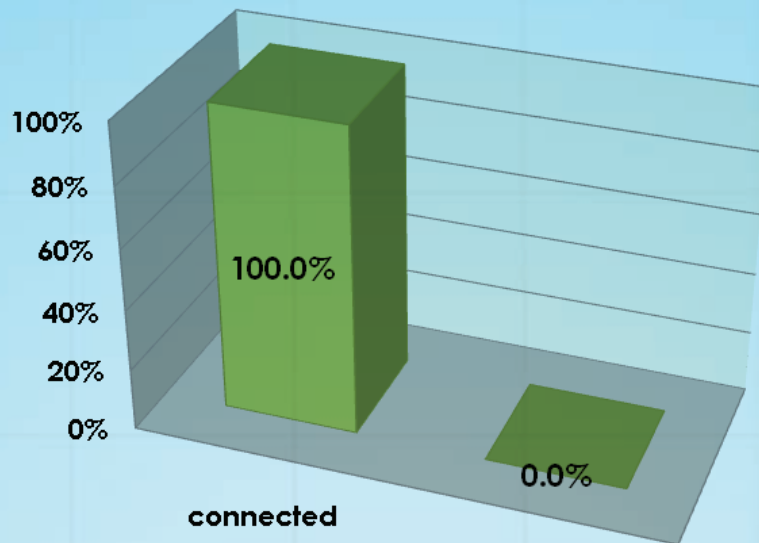


Figure (96): Graph representing the percentage of Islamic Institutes which are connected to the internet

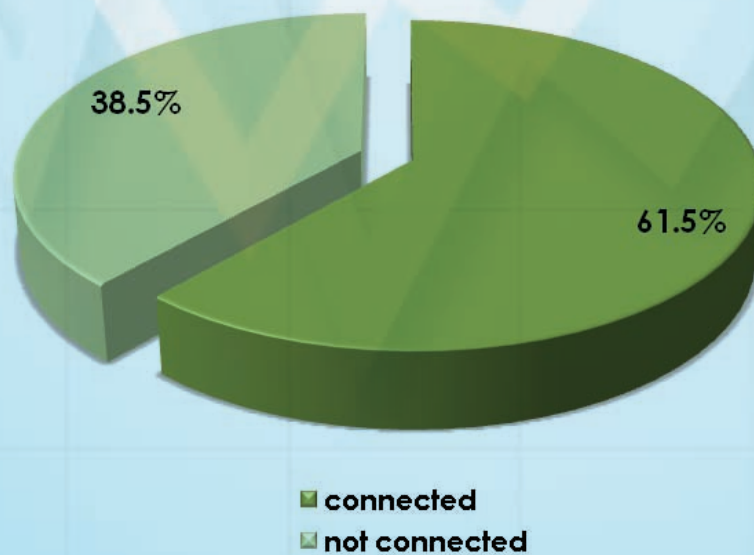


Figure (97): A pie chart representing the percentage of computers at Islamic Institutes which are connected to the internet to the total number of institutes

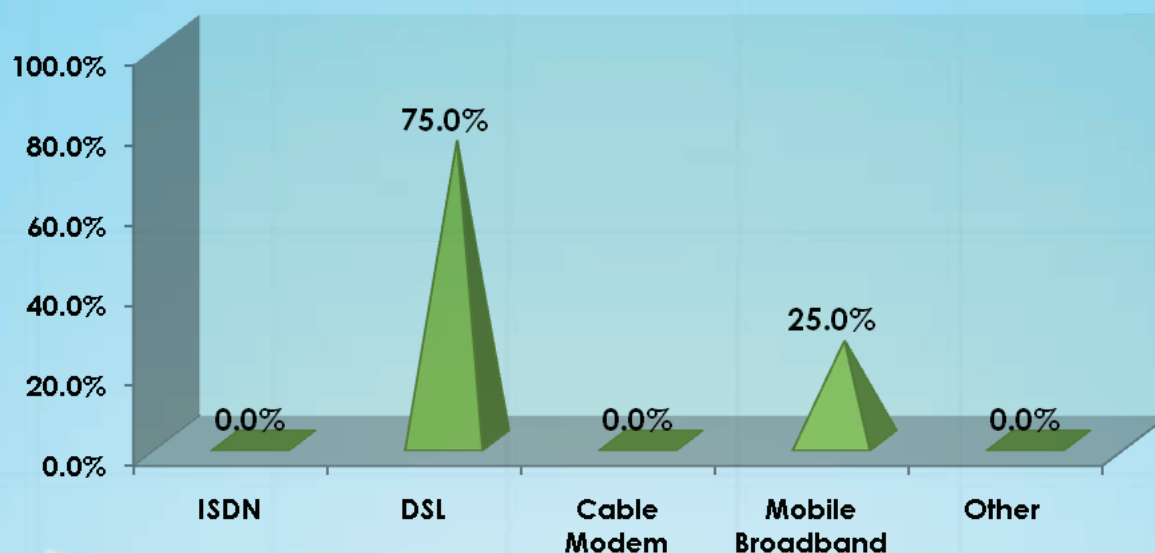


Figure (98): Graph representing the percentage of Islamic Institutes which are connected to the internet according to communication service

Table (17) shows that the indicators of Islamic Institutes are generally good especially with regard to the ratio of computer/student of 9.3 . It is a better ratio compared to the ratio recorded in government and international schools, although these institutes do not have learning resource centers. This is an indicator which should be cared for. It seems that half of these institutes give care to training since the percentage is 50%.

4.2 Administrative and teaching staff indicators

Table (18) shows indicators of the percentage of administrative and teaching staff of Islamic Institutes in the Sultanate of Oman.

**Table (18) Indicators of
administrative and teaching staff of Islamic Institutes (n= 71)**

No.	Indicator	Percentage
1	Percentage of administrative and teaching staff who have an specialized academic qualification in information and communication technology to the total number of staff.	19.1%
2	Percentage of administrative and teaching staff who have diplomas in information and communication technology to the total number of staff.	3.5%
3	Percentage of administrative and teaching staff who have bachelor degrees in information and communication technology to the total number of staff.	13.9%
4	Percentage of administrative and teaching staff who have master's degrees in information and communication technology to the total number of staff.	0.9%
5	Percentage of administrative and teaching staff who have doctorates in information and communication technology to the total number of staff.	0.9%
6	Percentage of trained administrative and teaching staff in information and communication technology in education to the total number of staff.	16.5%
7	Percentage of administrative and teaching staff who have mobile telephones to the total number of staff.	96.5%
8	Percentage of administrative and teaching staff who use digital cameras to the total number of staff.	83.5%
9	Percentage of administrative and teaching staff who the internet to the total number of staff	82.6%
10	Percentage of administrative and teaching staff who have active electronic mail accounts to the total number of staff	84.3%
11	Percentage of administrative and teaching staff who use electronic mail to communicate with students to the total number of staff	14.8%
12	Percentage of administrative and teaching staff who have personal computers at home to the total number of staff	86.1%



13	Percentage of administrative and teaching staff who do not have personal computers at home due to different reasons.	13-1 high cost	18.8%
		13-2 social reason	6.3%
		13-3 lack of sufficient knowledge	6.3%
		13-4 waste of time	6.3%
		13-5 language barrier	6.3%
		13-6 no need	68.8%
14	Percentage of administrative and teaching staff who have an internet connection at home to the total number of staff.		75.7%
15	Percentage of administrative and teaching staff who use Oman educational portal to the total number of staff.		60.9%
16	Percentage of administrative and teaching staff who use the school management program to the total number of staff.		19.1%
17	Percentage of administrative and teaching staff who use computers for educational purposes to the total number of staff.		69.6%
18	Percentage of administrative and teaching staff who use television for educational purposes to the total number of staff.		44.4%
19	Percentage of administrative and teaching staff who use radio for educational purposes to the total number of staff.		59.2%
20	Percentage of administrative and teaching staff who use computer laboratories for educational purposes to the total number of staff.		54.4%
21	Percentage of administrative and teaching staff who use learning resource centers for educational purposes to the total number of staff.		0%
22	Percentage of administrative and teaching staff who use educational software to the total number of staff		31.1%

IT Specializations

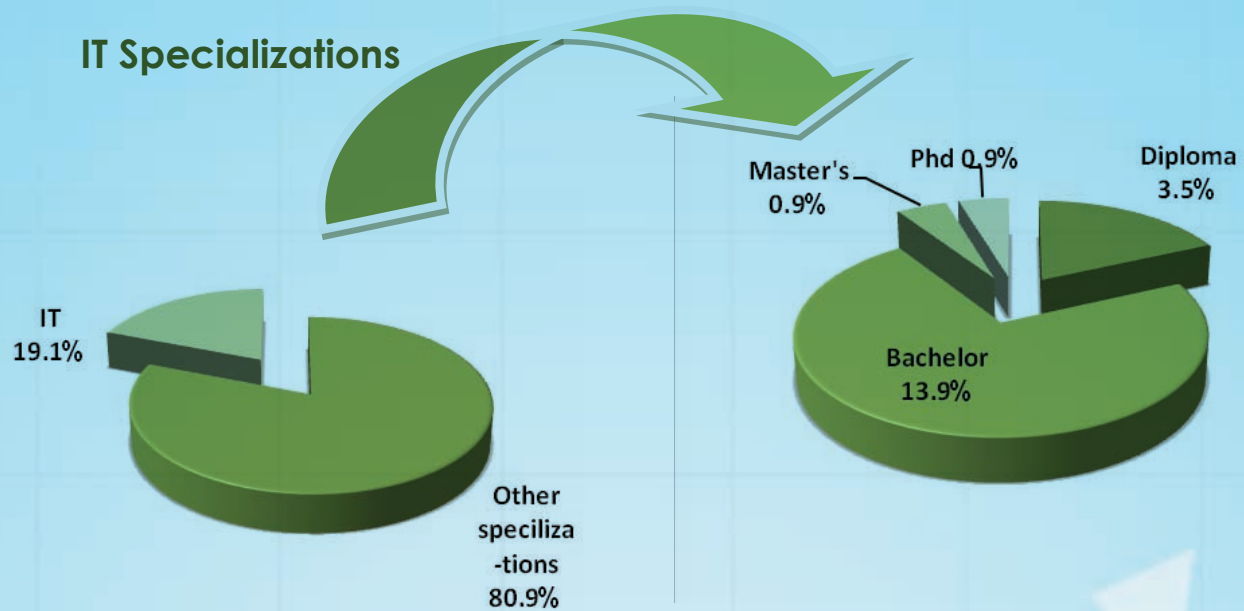


Figure (99) representing the percentage of Islamic Institutes administrative and teaching staff who have specialized academic qualifications in the field of ICT to the total number of the staff

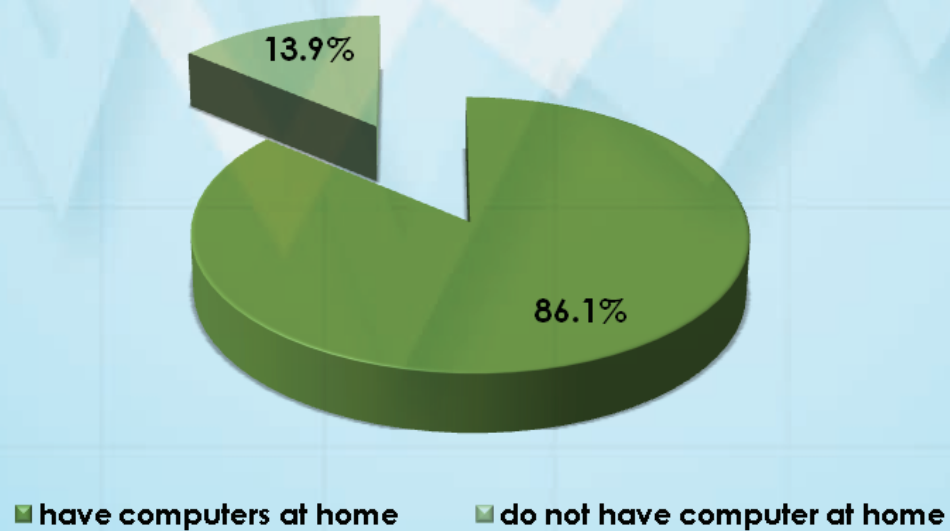


Figure (100) representing the percentage of administrative and teaching staff of Islamic Institutes who have personal computers at home

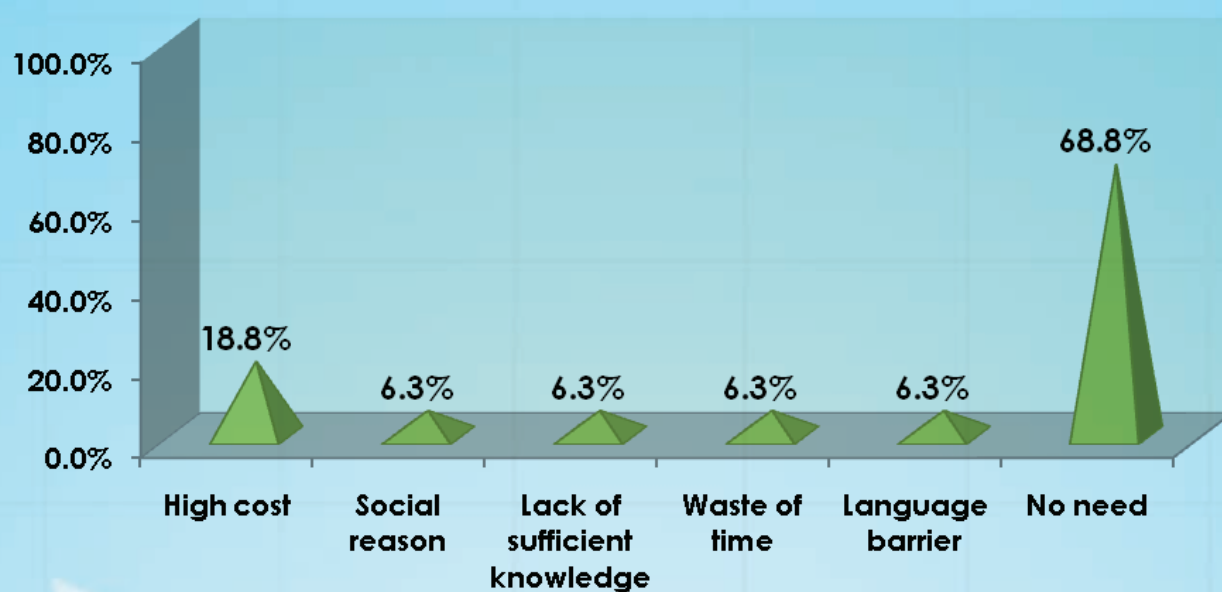


Figure (101): A graph representing percentage of administrative and teaching staff of Islamic Institutes who do not have personal computers at home due to different reasons



Figure (102): A graph representing percentage of administrative and teaching staff of Islamic Institutes who use learning resource centers, computer laboratories and educational software for educational purposes to the total number of staff

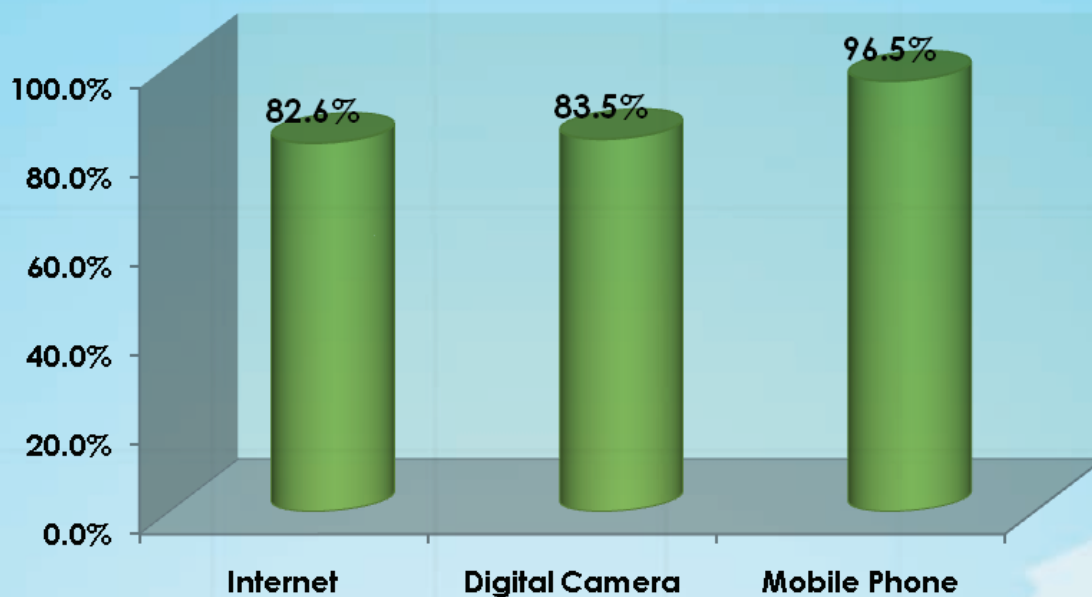


Figure (103): Graph representing the percentage of Islamic Institutes administrative and teaching staff who use modern technologies in communicating with others to the total number of staff

Table (18) shows that the indicators of the administrative and teaching staff of Islamic Institutes are generally good. Yet, there is an urgent need for employing the available technologies in effective manner. The indicators of employment of the electronic mail (14.8%) and educational software (31.3%) are either low or moderate. It is remarkable that the percentage of the administrative and teaching staff who use learning resource centers for educational purposes is (0%) due to the fact that the centers are not available in the Islamic Institutes.

4.3. Students' Indicators

Table (19) shows Islamic Institutes students' indicators according to percentage of possession and use of information and communication technology:

Table (19)
Indicators of students of
Islamic Institutes in the Sultanate of Oman (n=570)

No.	Indicator		Percentage
1	Percentage of students who have mobile telephones to the total number of students.		98.3%
2	Percentage of students who have computers at home to the total number of students.		91.4%
3	Percentage of students who use computers to the total number of students.		99.6%
4	Percentage of students who use computers according to location of use to the total number of students	At institutes	97%
		at home	91.6%
		in other places	76.3%
5	Percentage of students who can use computers at schools to do activities and school assignments to the total number of students		89.7%
6	Percentage of students who can use digital cameras to the total number of students.		89.3%
7	Percentage of students who can establish a web page to the total number of students.		53%
8	Percentage of students who use the internet according to location of use to the total number of students	At institutes	93.5%
		at home	79.3%
		at other places	79.5%
9	Percentage of students who use the internet according to purpose of use to the total number of students who use the internet	to obtain information	96.8%
		for entertainment	75.2%
		to have access to the portal	56.8%
		for study	92.6%
		to communicate with others	68.7%
10	Percentage of number of periods per week in which students use computers in schools to the total number of weekly periods.		10%
11	Percentage of number of periods per week in which students use the internet in schools to the total number of weekly periods.		5%

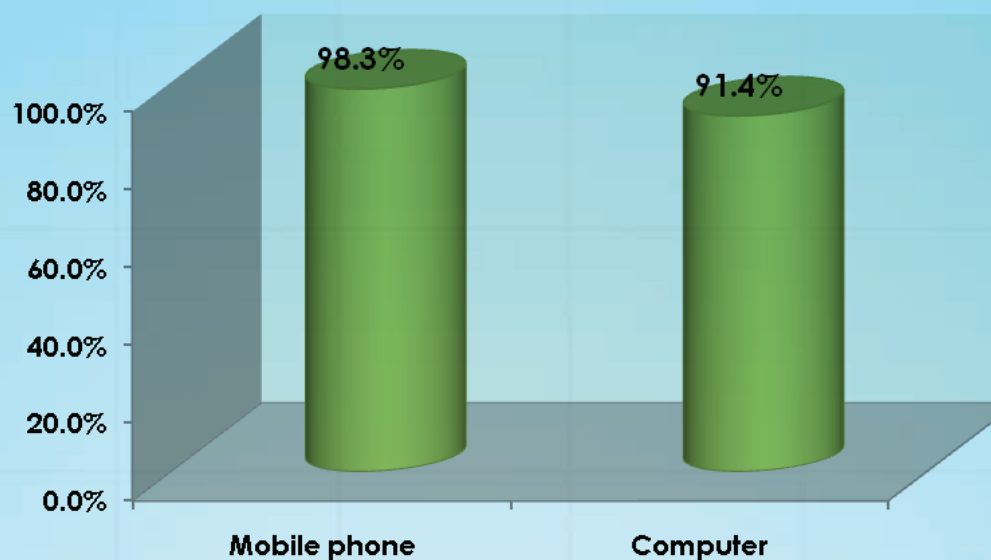


Figure (104) : Graph representing the percentage of students of Islamic Institutes who have technological devices

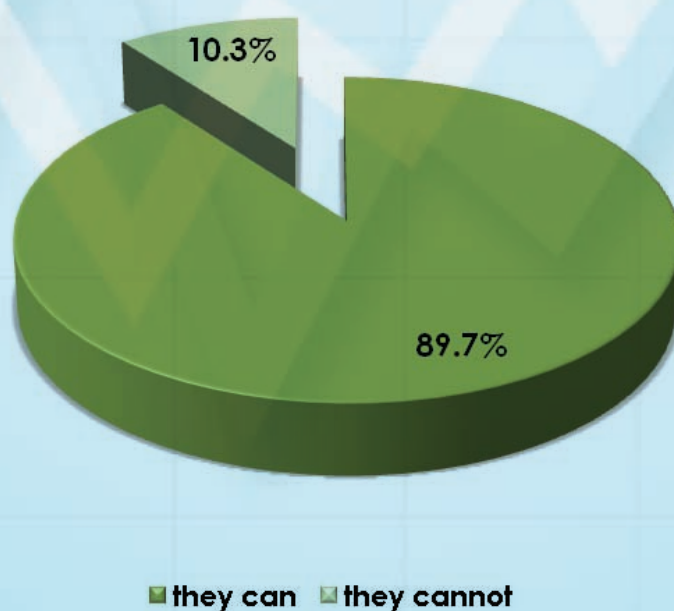


Figure (105): A pie chart representing the percentage of students of Islamic Institutes who can use computers in doing school assignments and duties to the total number of students

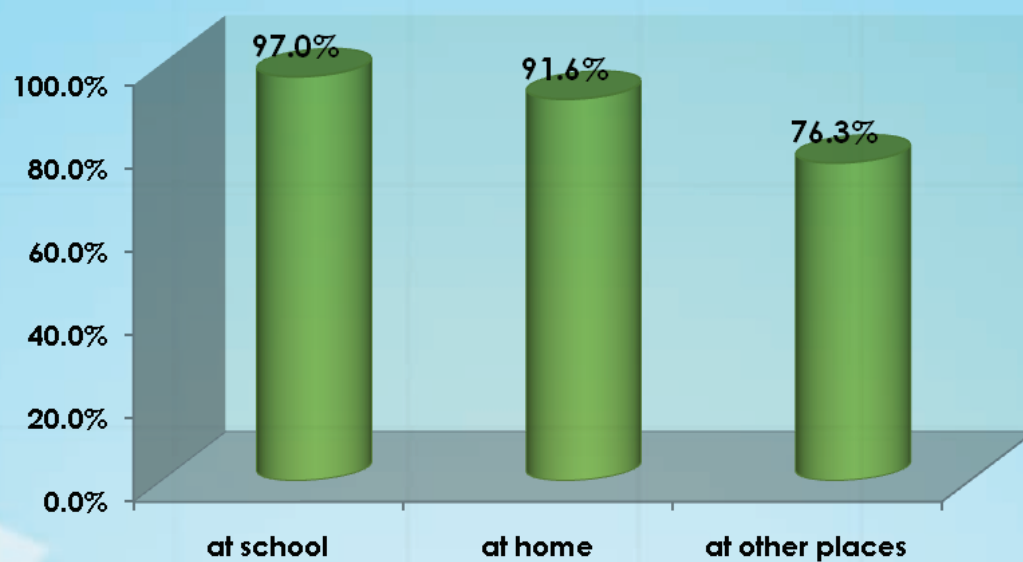


Figure (106): Graph representing the percentage of students of Islamic Institutes who use computers according to locations to the total number of students who use computers

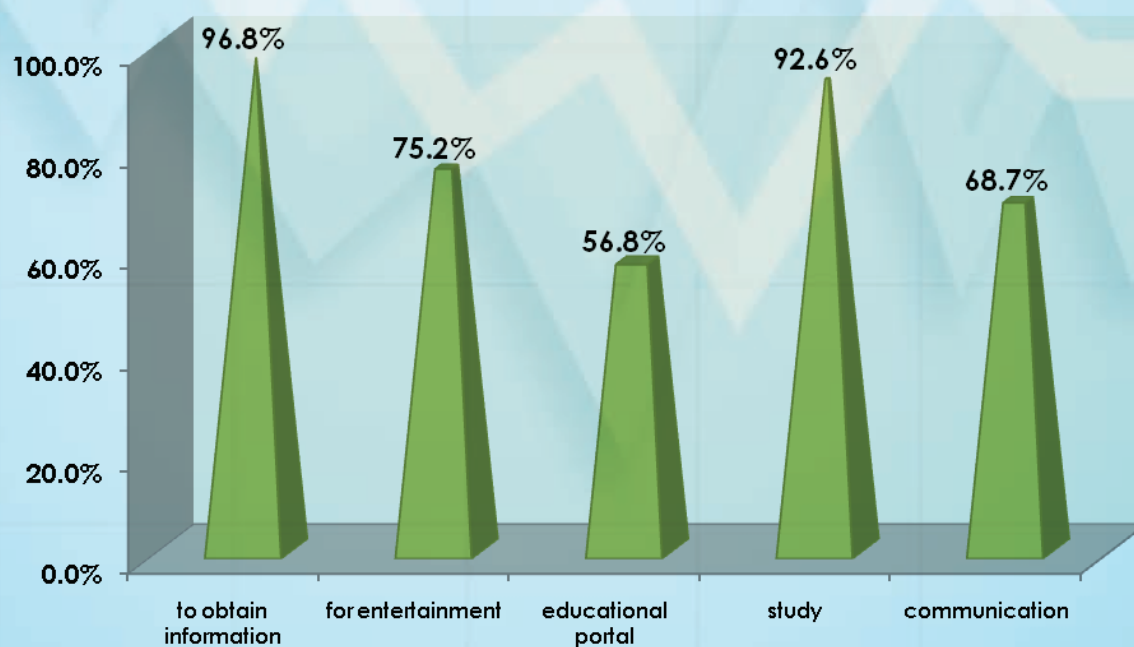
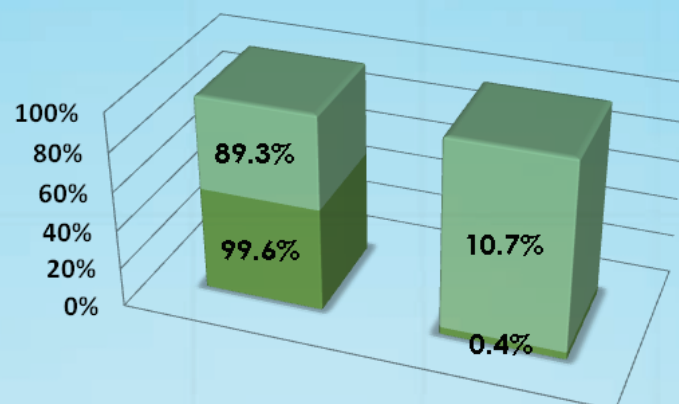


Figure (107): Graph representing the percentage of students of Islamic Institutes who use the internet according to purpose of usage to the total number of students who use the internet



	use	do not use
digital camera	89.3%	10.7%
computer	99.6%	0.4%

Figure (108): Graph representing the percentage of students of Islamic Institutes who use technological devices to the total number of students

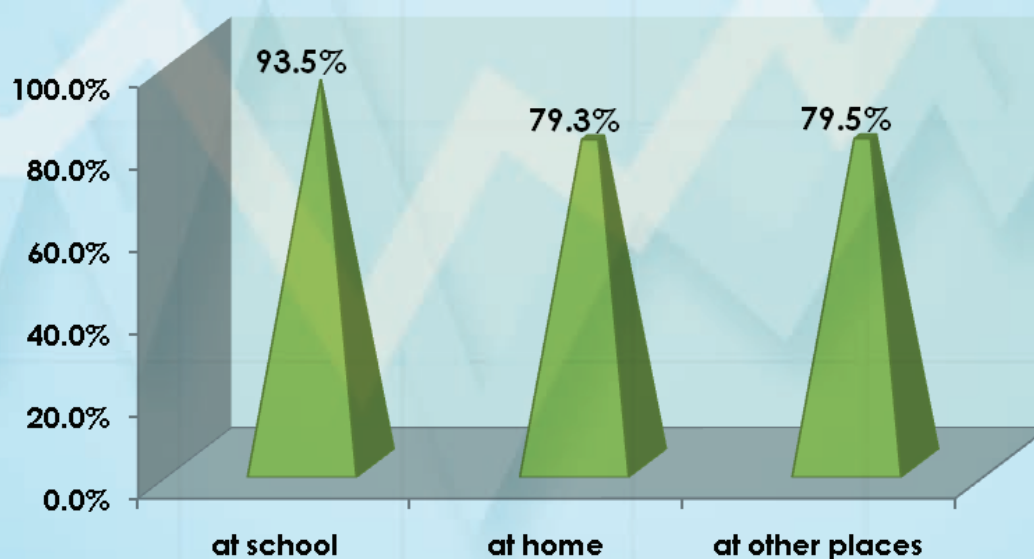


Figure (109): Graph representing the percentage of students of Islamic Institutes who use the internet for different purposes according to location of use to the total number of students

The indicators in table (19) are generally high. This indicates that the students of Islamic Institutes possess technologies and they can use them properly. The number of periods in which they use computers or the internet are similar to the similar periods in government schools or they may be rather higher.

Fifth: Outcomes of the Royal Guard College

5.1. College Indicators

The Royal Guard College is a unique type of schools in the Sultanate of Oman. Since it is only one college, its indicators have not been not calculated due to its specialty and due to the fact that its percentages are of no use since they are either 0% or 100%.

5.2. Administrative and teaching staff indicators

Table (20) shows the percentage of administrative and teaching staff with regard to possession and use of ICT in the Royal Guard College of the Sultanate of Oman.

No.	Indicator	Percentage
1	Percentage of administrative and teaching staff who have an specialized academic qualification in information and communication technology to the total number of staff.	32.3%
2	Percentage of administrative and teaching staff who have diplomas in information and communication technology to the total number of staff.	19.4%
3	Percentage of administrative and teaching staff who have bachelor degrees in information and communication technology to the total number of staff.	8.1%
4	Percentage of administrative and teaching staff who have master's degrees in information and communication technology to the total number of staff.	4.8%
5	Percentage of administrative and teaching staff who have doctorates in information and communication technology to the total number of staff.	0%
6	Percentage of trained administrative and teaching staff in information and communication technology in education to the total number of staff.	48.4%
7	Percentage of administrative and teaching staff who have mobile telephones to the total number of staff.	100%
8	Percentage of administrative and teaching staff who use digital cameras to the total number of staff.	93.5%
9	Percentage of administrative and teaching staff who the internet to the total number of staff	93.5%
10	Percentage of administrative and teaching staff who have active electronic mail accounts to the total number of staff	96.8%

No.	Indicator		Percentage
11	Percentage of administrative and teaching staff who use electronic mail to communicate with students to the total number of staff		45.2%
12	Percentage of administrative and teaching staff who have personal computers at home to the total number of staff		96.8%
13	Percentage of administrative and teaching staff who do not have personal computers at home due to different reasons.	13-1 high cost	0%
		13-2 social reason	0%
		13-3 lack of sufficient knowledge	0%
		13-4 waste of time	0%
		13-5 language barrier	0%
		13-6 no need	100%
14	Percentage of administrative and teaching staff who have an internet connection at home to the total number of staff.		87.1%
15	Percentage of administrative and teaching staff who use Oman educational portal to the total number of staff.		38.7%
16	Percentage of administrative and teaching staff who use the school management program to the total number of staff.		24.2%
17	Percentage of administrative and teaching staff who use computers for educational purposes to the total number of staff.		56.4%
18	Percentage of administrative and teaching staff who use television for educational purposes to the total number of staff.		61.2%
19	Percentage of administrative and teaching staff who use radio for educational purposes to the total number of staff.		41.9%
20	Percentage of administrative and teaching staff who use computer laboratories for educational purposes to the total number of staff.		48.4%
21	Percentage of administrative and teaching staff who use learning resource centers for educational purposes to the total number of staff.		83.8%
22	Percentage of administrative and teaching staff who use educational software to the total number of staff		30.6%

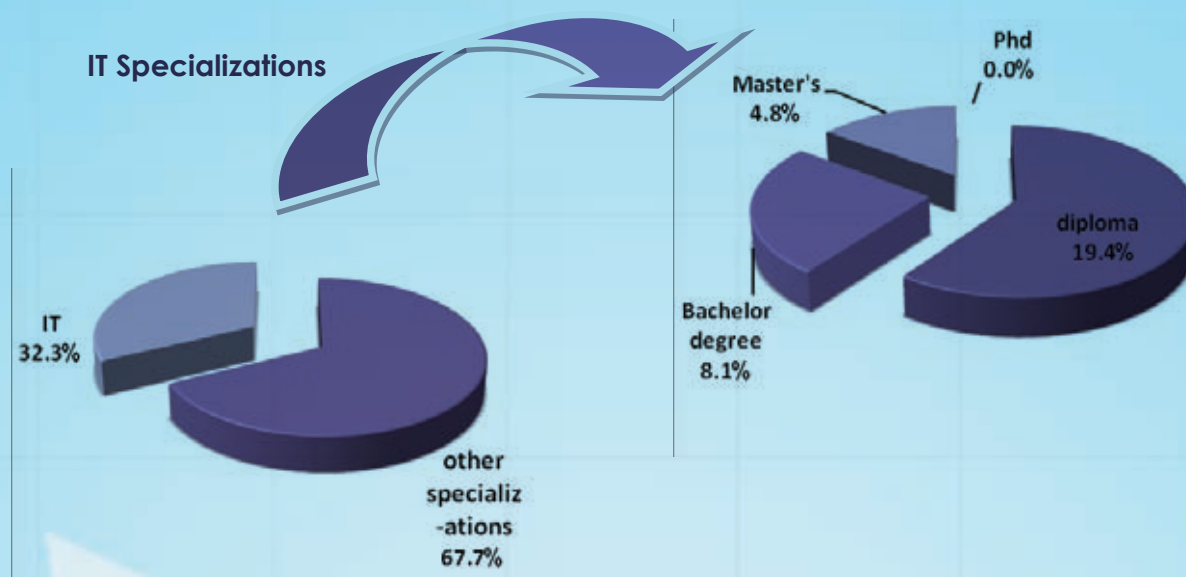


Figure (110) representing the percentage of the RGC administrative and teaching staff who have specialized academic qualifications in the field of ICT to the total number of the staff

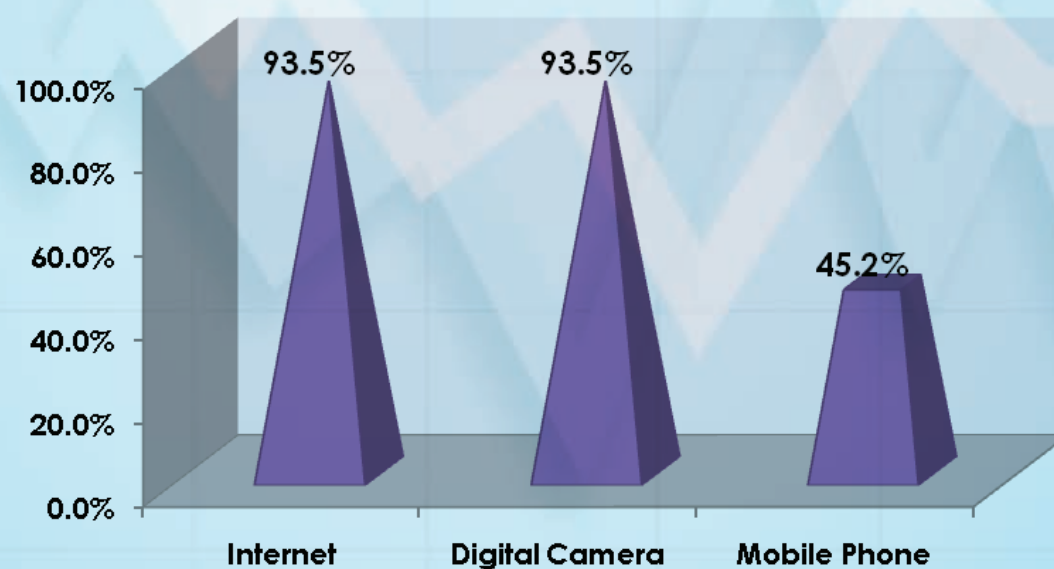


Figure (111) representing the percentage of administrative and teaching staff of the RGC who use modern technologies in communicating with others to the total number of staff

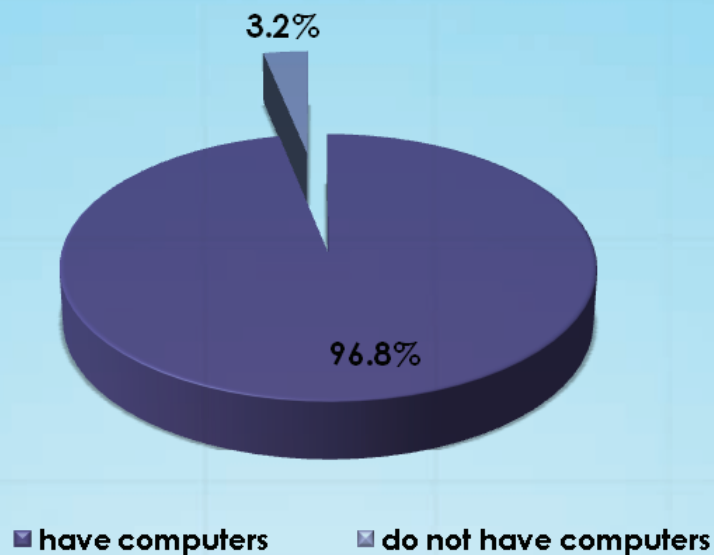


Figure (112): A graph representing the percentage of administrative and teaching staff of the RGC who have personal computers at home due to different reasons

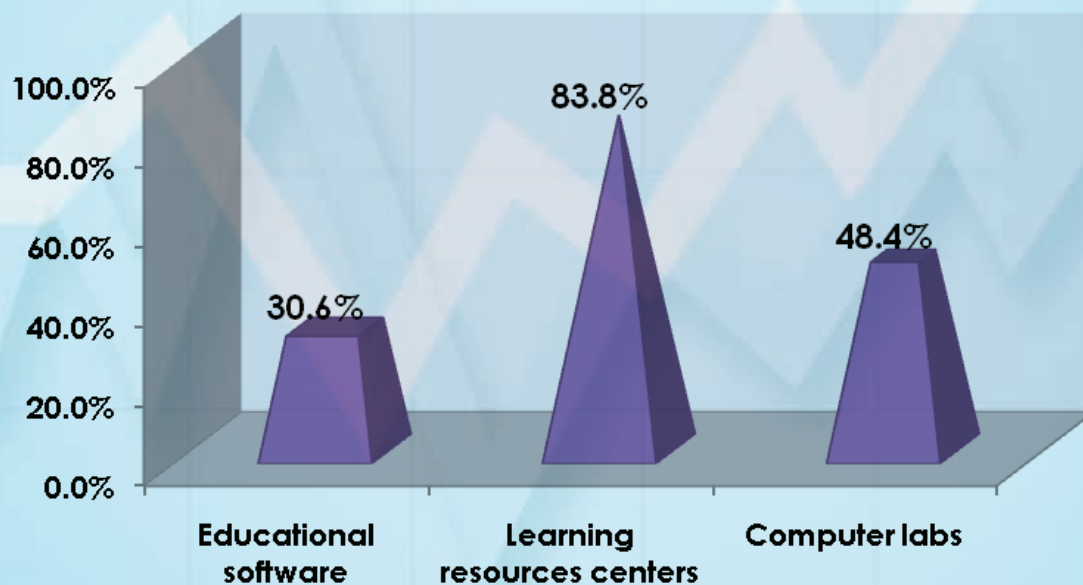


Figure (113) : Graph representing percentage of administrative and teaching staff of the RGC who use computer laboratories, learning resource centers, and educational software for educational purposes

Table (20) shows that the indicators of the administrative and teaching staff of the Royal Guard College are generally good especially in the fields of mobile telephone and the use of the internet and learning resource centers. Yet, there is a need to employ available technologies in education, especially in using educational software, electronic mail and the educational portal.

5.3. Students' Indicators

Table (21) shows students indicators in the Royal Guard College according to percentage of possession and use of information and communication technology:

Table (21)
Indicators of students of
the Royal Guard College (n=132)

No.	Indicator		Percentage
1	Percentage of students who have mobile telephones to the total number of students.		76.5%
2	Percentage of students who have computers at home to the total number of students.		93.2%
3	Percentage of students who use computers to the total number of students.		100%
4	Percentage of students who use computers according to location of use to the total number of students	At the college	61.4%
		at home	90.9%
		in other places	59.8%
5	Percentage of students who can use computers at the college to do activities and school assignments to the total number of students		87.1%
6	Percentage of students who can use digital cameras to the total number of students.		90.9%
7	Percentage of students who can establish a web page to the total number of students.		1.5%
8	Percentage of students who use the internet according to location of use to the total number of students	At the college	61.4%
		at home	74.2%
		at other places	61.4%
9	Percentage of students who use the internet according to purpose of use to the total number of students who use the internet	to obtain information	84.8%
		for entertainment	85.6%
		to have access to the portal	1.5%
		for study	61.4%
		to communicate with others	55.3%
10	Percentage of number of periods per week in which students use computers in schools to the total number of weekly periods.		7.5%
11	Percentage of number of periods per week in which students use the internet in schools to the total number of weekly periods.		7.5%

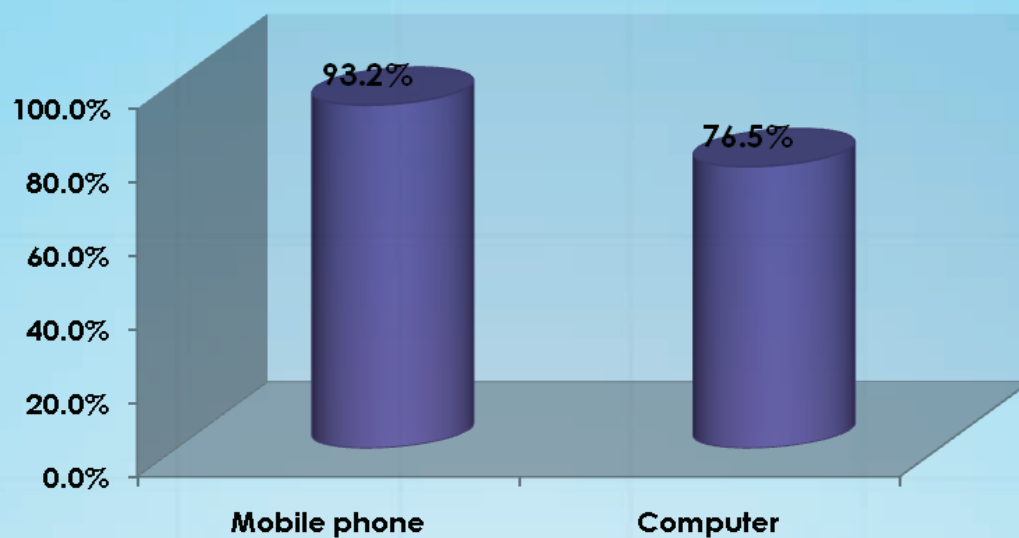
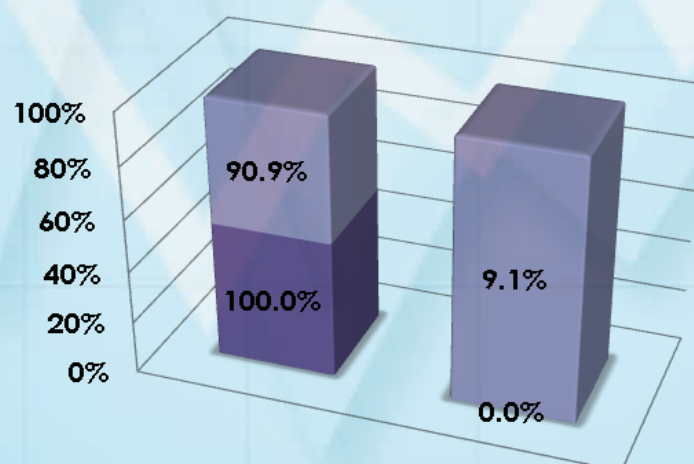


Figure (114) : Representing the percentage of students of the RGC who have technological devices



	use	do not use
digital camera	90.9%	9.1%
computer	100.0%	0.0%

Figure (115): Graph representing the percentage of students of the RGC who use technological devices to the total number of students

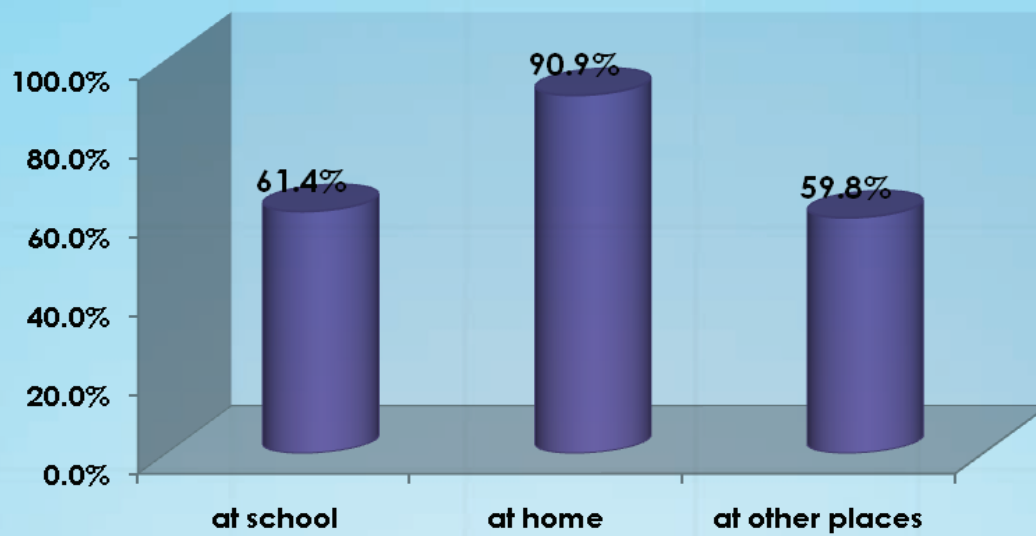


Figure (116): A pie chart representing the percentage of students of Islamic Institutes who can use computers in doing school assignments and duties to the total number of students

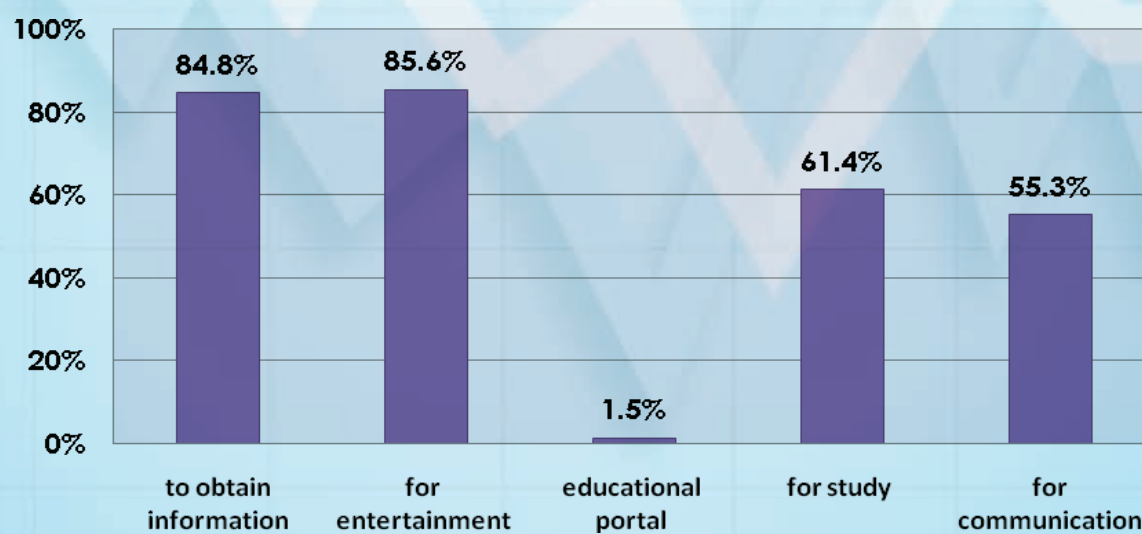


Figure (117): Graph representing the percentage of students of the RGC who use computers according to locations to the total number of students who use computers

The indicators in table (21) are generally high. The percentage of use of computers by the Royal Guard College is 100% which indicates that they possess technology and can use it properly.

The international basic indicators of using information and communication technology in the education sector: comparison between public and private education.

Table (22) shows international basic indicators of using information and communication technology in the education sector and provides a comparison between public and private education.

Table (22)

International basic indicators of using information and communication technology in the education sector. Comparison between public and private education

	Indicators	Gov. Schools	Private Schools
ED1	Percentage of schools which have radios for educational purposes.	98.6%	33.1%
ED2	Percentage of schools which have TV sets for educational purposes.	68.9%	33.1%
ED3	Percentage of schools which have infrastructure for communication (telephone for example)	94.2%	96.7%
ED4	Ratio student/computer in schools which use computers for educational purposes	11.8	12.1
ED5	Percentage of schools which are connected to the internet.	86.7%	87.8%
	1- ISDN	3.4%	3.8%
	2- DSL	54.6%	42.1%
	3- Cable Modem	11.9%	14.5%
	4- Mobile Broadband	25.6%	24.5%
	5- Other	4.5%	15.1%
ED6	Percentage of students who have access to the internet at schools	19.1%	27.2%
ED7	Percentage of teachers qualified in ICT to the total number of teachers	15.1%	20.5%

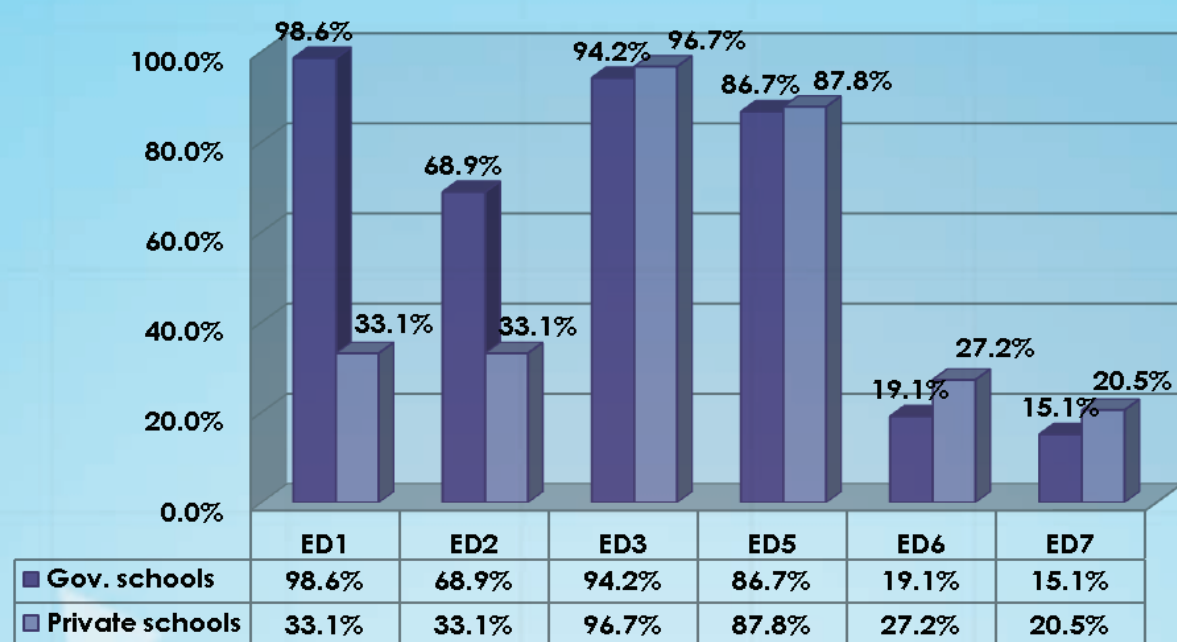


Figure (118): A graph representing the percentage of basic international indicators of use of information and communication technology in the education sector

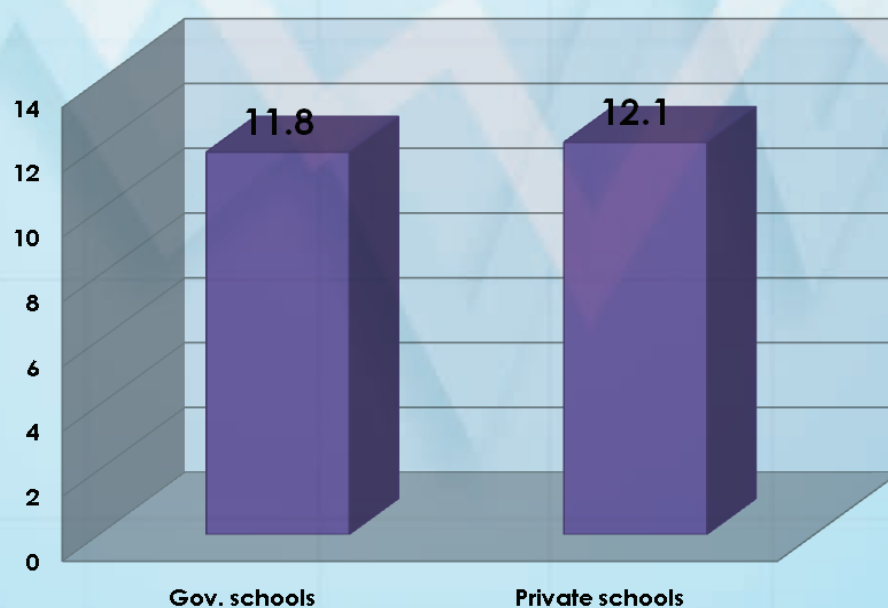



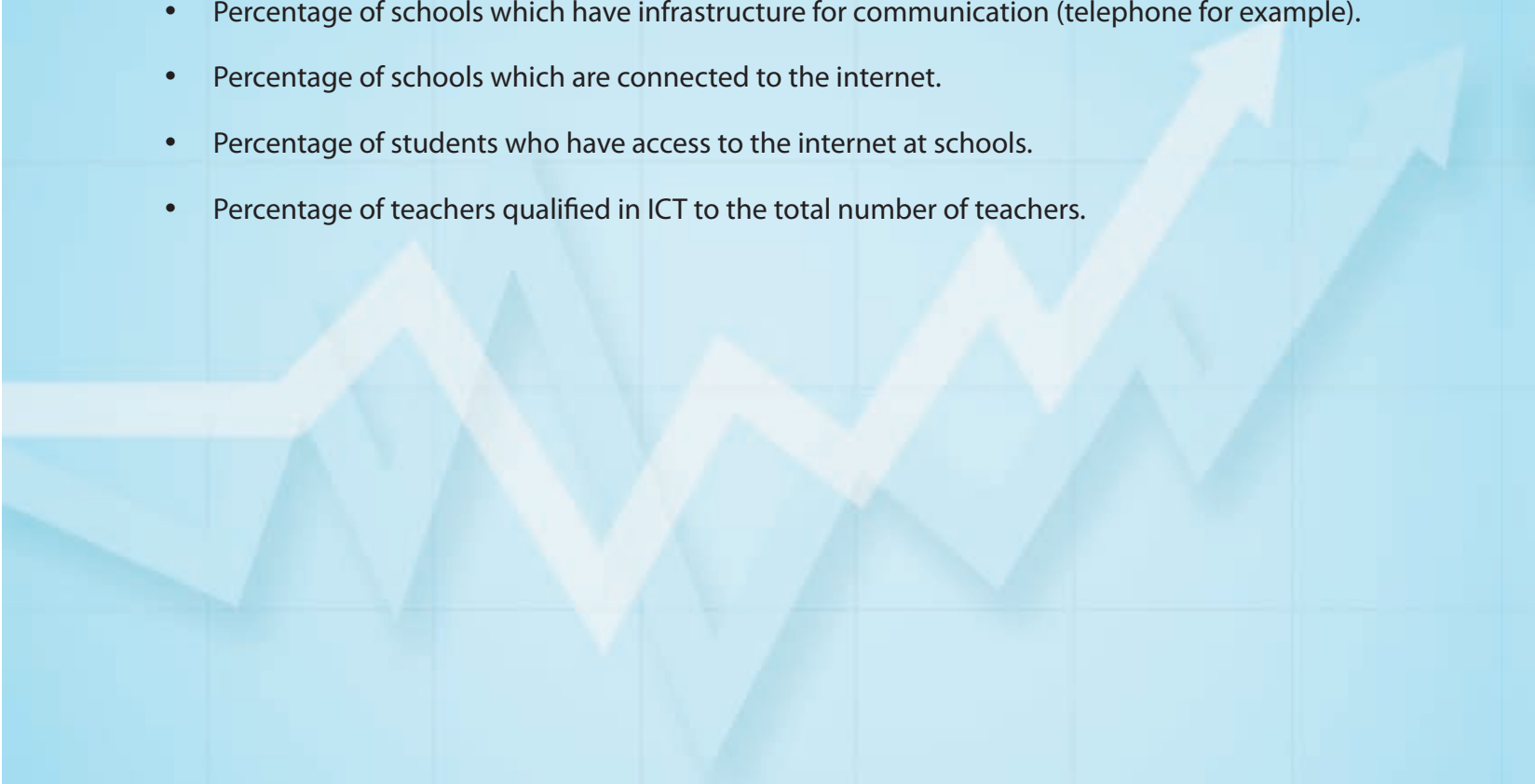
Figure (119) : A graph representing the student/computer ratio in schools which use computers for educational purposes



It is clear from table (22) that there are differences between government schools and private schools with regard to three indicators where government schools surpass private schools. These indicators are:

- Percentage of schools which use radio for educational purposes.
- Percentage of schools which use TV sets for educational purposes.
- Student/computer ratio.

There are also differences between government schools and private schools with regard to four indicators where private schools surpass government schools. These are:

- Percentage of schools which have infrastructure for communication (telephone for example).
 - Percentage of schools which are connected to the internet.
 - Percentage of students who have access to the internet at schools.
 - Percentage of teachers qualified in ICT to the total number of teachers.
- 



Challenges

The project encountered some challenges. These are concluded in the followings:

1. The high speed internet service is not available in remote areas. This challenge can be overcome by providing servers near schools to provide this service. Schools which do not enjoy internet service have been identified and wireless modems have been provided with prepaid cards during the survey period.
2. The network is slow during uploading of large files. This situation was handled through sending such files on floppy discs to the educational portal department.
3. Limited numbers of computers in general education schools where computer laboratories do not exist. This problem was solved through providing laptops to schools which do not have learning resource centers or computer labs.
4. Completion of data of private and international schools on the educational portal to enable these schools to fill in the survey forms which were uploaded on the portal and which require passwords to use the portal through schools' identities and basic data. Since most of private schools have not yet completed this step, a plan was set up to complete their data. Several orientation meetings and training sessions were conducted to enable all concerned parties of filling in the forms.
5. Implementation of the survey project by international schools since this category of schools is considered as of a special nature, a special website was designed in English language. Orientation meetings and training sessions were organized, and continuous coordination is going on with these schools so as to ensure that appropriate support is provided to them.

Recommendations

1. Organizing a symposium to present the outcomes of the project.
2. Providing the teaching staff with the skills required for employment of information and communication technology in the educational process through rehabilitating them in this field. Different concerned parties of the Ministry of Education and specialized ICT university department should be encouraged to provide training programs to rehabilitate teachers and specialists in Omani schools as well as introducing academic graduate and post-graduate programs in this field.
3. Making use, as much as possible, of the concluded outcomes and include them in future plans which are related to the development of all levels of the education sector through setting a clear strategy for informatics in education, through which focus can be made on:
 - Indicators which are low when compared with other countries of the world, so as to improve the standard of Oman in this field in a way that ensures that technologies are implemented to support the educational process at both local and international levels.
 - High indicators to be highlighted , maintained and improved.
4. The Sultanate of Oman has the advantage of carrying out this comprehensive survey in which the latest technologies and software were used. Therefore, it is necessary that Oman should participate in regional and international conferences, symposiums and workshops so as to present this pioneer experience to others.
5. Ensuring the sustainability of recording data and concluding indicators related to information and communication technology in the education sector through:
 - Adding data related to technology to existing data of schools, administrative and teaching staff and students which are already uploaded on the educational portal. This task shall make it easier to collect and conclude indicators.
 - Carrying out this survey on periodical basis by the Ministry of Education.
6. Emphases must be made on classifying indicators in the future as per educational levels (Basic and Post-basic) and on eliminating differences and disparities between them.
7. The importance of following up the latest technologies used in education and their implementation as well as organizing training courses to staff working in the field of education in accordance with their specializations and needs.
8. Making attempts to provide the internet service to schools which do not have this service till now (13.3% of the total number of schools).
9. Encouraging teachers and supervisors to increase the level of using computers for educational purposes since the current percentage is within the range of 41.3% to the total number of schools which have computers.
10. Indicator No. 11 of administrative and teaching staff indicators indicate that the percentage of staff who communicate with students via electronic mail is 8.5% although 60.8% of students use the internet for studying and 77.8% use it for obtaining information. This is a relatively high percentage which requires that teachers must be encouraged and trained to use the electronic mail system to communicate with their students in educational purposes.



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Appendices

Appendix (1)

The detailed time plan of the survey

From January to April 2010		
Month	Week	Executive procedures
January	Second	Issuing of the Ministerial Decree No. 15/2010 regarding the reformation of the team of drafting the document of ICT indicators in the education sector.
February	Third	Issuing of the administrative decree No. 28/2010 regarding formation of the central team of the ICT indicators in the education sector.
March	Third	Developing the document of the survey indicators and forms Appointments of the project consultants (begin analyses of forms and ensure their validity and consistency).
April	Second	Formation of local survey teams in the regions and introduction of the project to them (objectives and tasks). Receiving remarks from consultants on forms and indicators to be developed in their final version.

May 2010			
Date	Objectives	Executive Procedures	Implementation requirements
First Week	<ul style="list-style-type: none"> - Making use of the expertise of the consultant in implementing the project. 	<ul style="list-style-type: none"> - Provision of a consultant from the UNESCO 	<ul style="list-style-type: none"> - Coordination with the Oman National Commission for Education, Culture and Science
First Week	<ul style="list-style-type: none"> - Coverage of functions of all stages of the project. - Orientation campaign through: <ul style="list-style-type: none"> o Publishing reportages and press articles. o Conducting radio and TV interviews. o Developing and designing products of the project. 	<ul style="list-style-type: none"> - Development of the detailed media plan of the project. 	<ul style="list-style-type: none"> - Formation of a media team and identifying their tasks and responsibilities as well as media means which are used. - Communicating with concerned parties to cover the functions of the project. - Development of a plan.
Second Week	<ul style="list-style-type: none"> - Inform local survey teams of the objectives and stages of the project as well as the targeted categories, forms and training mechanism. - Getting acquainted with the opinions of the members of local teams and their remarks on the project. - Drawing the features of the upcoming action plan. 	<ul style="list-style-type: none"> - An orientation meeting with local survey teams at the regions. 	<ul style="list-style-type: none"> - Develop the project presentation. - Development of presentation on targeted categories , training and e-forms.
Third Week	<ul style="list-style-type: none"> - Link required indicators with forms and ensure their conformity with items. - Facilitate data entry via school management program and the educational portal. 	<ul style="list-style-type: none"> - Analyze requirements reports of the survey; begin designing survey windows and e-forms within the school management program. 	<ul style="list-style-type: none"> - Technical analysis and review of the forms and indicators. - Programming the forms.

May 2010			
Date	Objectives	Executive Procedures	Implementation requirements
Third Week	<ul style="list-style-type: none"> - Provide schools with laptops for data entry on the e-forms to facilitate the flow of data. 	<ul style="list-style-type: none"> - Make arrangements for purchasing laptops to help in the survey. 	<ul style="list-style-type: none"> - Identify schools which have no laptops and internet. - Development
Fourth Week	<ul style="list-style-type: none"> - Introduce the survey project to educational community (students, teachers, public schools and parents). 	<ul style="list-style-type: none"> - Begin a media campaign on the survey project via the educational portal, the e-mail, SMS and the educational forum. 	<ul style="list-style-type: none"> - Develop an appropriate informative materials about the project.
Fifth Week	<ul style="list-style-type: none"> - Join the educational community in designing the logo of the project. - Confirming the importance of the project to the targeted categories. 	<ul style="list-style-type: none"> - Set up specifications of the logo of the survey and announcing the contest of designing the survey logo. The announcement continues until the end of the third week of June 2010. 	
Fifth Week	<ul style="list-style-type: none"> - Approval of the forms in their final version. - Beginning the electronic programming of the forms. 	<ul style="list-style-type: none"> - Approval of forms and indicators. 	<ul style="list-style-type: none"> - Reviewing forms and ensuring that they contain all necessary indicators. - Conforming indicators with forms.
Fifth Week	<ul style="list-style-type: none"> - Extraction of ICT indicators in Islamic institutes and the Royal Guard College for the project since they are part of the education system. 	<ul style="list-style-type: none"> - Involve Islamic institutes which are affiliated to the Sultan Qaboos Center for Islamic culture of the Royal Court and the Royal Guard College in the project. 	<ul style="list-style-type: none"> - Coordinate with Islamic institutes and the Royal Guard College and introduce the project to them including its objectives and inform them of their roles in the project.



June 2010			
Date	Objectives	Executive Procedures	Implementation requirements
Second Week	<ul style="list-style-type: none"> - Assess the consistency and validity of the form and confirm its indicators in their final version. 	<ul style="list-style-type: none"> - Ensure the authenticity of all data recorded on questionnaires with regard to their validity and assess their consistency as well as linking them to final indicators. 	<ul style="list-style-type: none"> - Review forms and link them to indicators.
Second Week	<ul style="list-style-type: none"> - Train the survey team on completing forms electronically. - Train the central survey team on completing the form electronically. - Train the local survey teams. - Train schools' teams. 	<ul style="list-style-type: none"> - Develop the project training plan 	<ul style="list-style-type: none"> - Design a training guide including the plan. - Develop training mechanisms. - Develop the training guide in both Arabic and English languages (including extracts from the forms) - Provision of training hall. - Coordinate with educational regions.
Third Week	<ul style="list-style-type: none"> - Program forms electronically to facilitate data entry. - Set up an appropriate flow of data of targeted categories. 	<ul style="list-style-type: none"> - Complete programming of survey forms within the school management program and the educational portal. 	<ul style="list-style-type: none"> - Identify the systems which shall be used to enter and gather data for each category and extract indicators according to specified measures on specified time.
Third Week (continued)		<ul style="list-style-type: none"> - Explain to the central survey team the suggested systems of the mechanism of flow of data in government, private and international schools as well as Islamic institutes and the Royal Guard College 	<ul style="list-style-type: none"> - Develop the mechanism of flow of data.
Third Week	<ul style="list-style-type: none"> - The central survey team looks into the electronic forms and tests them technically. - Ensure the validity and consistency of the electronic forms. 	<ul style="list-style-type: none"> - Test the forms electronically and link them to extraction of indicators to ensure their validity and consistency. 	<ul style="list-style-type: none"> - Validation of forms. - Test the electronic forms. - Enter all indicators and reprogram them to include modifications if necessary.
Third Week	<ul style="list-style-type: none"> - Examine training processes and their mechanism. - Be informed with the remarks and observations of trainees. - Improve and modify forms if necessary. 	<ul style="list-style-type: none"> - Develop a plan for field visits of the central survey team for training and follow up at the regions. 	<ul style="list-style-type: none"> - Develop visits' program. - Coordinate with educational regions. - Other administrative matters.

June 2010			
Date	Objectives	Executive Procedures	Implementation requirements
Fourth Week	<ul style="list-style-type: none"> - Experiment completion of the forms. 	<ul style="list-style-type: none"> - Train the central survey team on the electronic forms of the survey. - Address the university to book labs to train local survey teams. 	<ul style="list-style-type: none"> - Conducting training
Fourth Week	<ul style="list-style-type: none"> - Enlighten private and international schools of the survey project. - Inform them of the objectives, their roles and responsibilities. - Emphasize the importance of their participation in the project. 	<ul style="list-style-type: none"> - Develop an enlightenment plan targeting private and international schools on the survey. 	<ul style="list-style-type: none"> - Develop the media informative materials. - Coordinate and communicate with private and international schools.
Fourth Week	<ul style="list-style-type: none"> - Approve the logo of the survey project. - Cast on the project a special identity. 	<ul style="list-style-type: none"> - Select the winning logo and approve it. 	<ul style="list-style-type: none"> - Prepare specifications of the logo and make announcement of the same. - Evaluate the presented works of the logo. - Approve the winning logo (a financial award)

July 2010			
Date	Objectives	Executive Procedures	Implementation requirements
First Week	<ul style="list-style-type: none"> - Propagate enlightenment on the project. - Consolidate the concept and objectives of the project among the targeted categories. - Enforce communications with the targeted categories. 	<ul style="list-style-type: none"> - Develop posters, brochures and other requirements to promote the project inside schools. 	<ul style="list-style-type: none"> - Develop the media informative materials. - Make designs and coordinate with printers. - Identify costs of design and printing.
First Week	<ul style="list-style-type: none"> - Document stages, activities and functions of the project. 	<ul style="list-style-type: none"> - Film a documentary on the project (15 to 20 minutes). 	<ul style="list-style-type: none"> - Coordinate with a company. - Develop the scenario of the movie.
First Week	<ul style="list-style-type: none"> - Show trainers the survey central and local teams how to complete the forms. - Unify and explain the concepts which are not clear on the form. 	<ul style="list-style-type: none"> - Produce the training guide (for all targeted categories). Development and printing of these should be completed by the second week of July 2010. 	<ul style="list-style-type: none"> - Edit the draft of the training guide. - Print the training guide and guides of usage. - Identify costs of design and printing.
Fourth Week	<ul style="list-style-type: none"> - Inform trainees of the project and the electronic forms and train them. - Inform trainees of required indicators after data entry is over. 	<ul style="list-style-type: none"> - Develop training materials of the projects. - (training materials accompanying the training program) 	<ul style="list-style-type: none"> - Develop an orientation presentation on the project. - Develop a presentation on indicators. - Develop training materials which support the training through computer.



August 2010			
Date	Objectives	Executive Procedures	Implementation requirements
Fourth Week	<ul style="list-style-type: none"> - Experiment the school questionnaires and the administrative, technical and teaching staff. 	<ul style="list-style-type: none"> - Select a random sample representing types of schools. The sample includes 4 schools from each region and a random sample of the teaching staff to complete the questionnaires within two days. 	<ul style="list-style-type: none"> - 32 schools were selected representing 8 regions and 92 teachers.

September 2010			
Date	Objectives	Executive Procedures	Implementation requirements
First Week	<ul style="list-style-type: none"> - Practical implementation of the school questionnaire and the administrative and teaching staff on the study community from government schools. 	<ul style="list-style-type: none"> - The school form is completed by a committee chaired by the school principal. - Each member of the administrative and teaching staff complete their own forms. - Electronic windows are used to respond to questionnaire items. - Allowed time is one week. 	
	<ul style="list-style-type: none"> - He the Undersecretary meets with the Directors General of the educational regions to inform them of the stages, achievements and expectations of the project. 	<ul style="list-style-type: none"> - Hold a meeting at the Ministry's headquarters including a brief presentation on the project. 	
Second Week	<ul style="list-style-type: none"> - Follow up of the enlightenment campaign. 	<ul style="list-style-type: none"> - Address the educational regions on the latest developments of the project and the action plan for the upcoming period. 	<ul style="list-style-type: none"> - Forward a letter of gratitude and thanks in respect of the effective performance during the first stage of the survey and encourage all parties to do their best efforts and make proper preparations for the second stage.
Second Week (continued)	<ul style="list-style-type: none"> - Provide computers and pre-paid cards. 	<ul style="list-style-type: none"> - Distribute laptops and pre-paid cards. 	<ul style="list-style-type: none"> - Distribution is made according to the already developed list.
	<ul style="list-style-type: none"> - Hold a meeting with section chiefs of the educational portal to develop the second stage of the project. 	<ul style="list-style-type: none"> - Hold a meeting with the section chiefs of the educational portal. 	<ul style="list-style-type: none"> - Discuss and evaluate the first stage of the survey and make preparations of the second stage.

September 2010			
Date	Objectives	Executive Procedures	Implementation requirements
Second Week (continued)	- Provide computers and pre-paid cards.	- Distribute laptops and pre-paid cards.	- Distribution is made according to the already developed list.
	- Hold a meeting with section chiefs of the educational portal to develop the second stage of the project.	- Hold a meeting with the section chiefs of the educational portal.	- Discuss and evaluate the first stage of the survey and make preparations of the second stage.
Third Week	- Enlighten local community and school community of the project.	- Publish a press reportage on the project.	
		- Print and distribute posters to the educational; regions. - Approve the logo and put it on the posters.	- Identify costs and approve them. - Translate posters to be distributed to international schools.
	- Train special education schools.	- Inform and train staff of special education schools on completing forms of the survey.	- Coordinate with special education schools and introduce the project to the Department of Special Education Department of the Ministry.
	- Enlighten the principals of private schools of the project.	- Hold an orientation meeting with the principals of private schools to inform them with the project.	- Orientation of the project and requirements of implementation. Coordination to book the meeting hall in one of the private schools.
Third Week (continued)	- Translate the guide and the questionnaires into English language.	- Translate the guide and the survey questionnaires.	- Translation of forms and guide shall be completed by the first week of October to be sent to international schools.
Fourth Week	- Enlighten and train the staff of the Royal Guard Technical College.	- Hold a meeting with the administration and some of the staff of the Royal Guard College.	- Discuss how to complete the survey forms and enter data.
	- Train private schools coordinators on hoe to complete questionnaires.	- Hold a meeting with private schools coordinators or whom may be chosen by schools' principals to inform them of the project and methods of completing the questionnaires.	
Second Week	- Analyze the actual survey questionnaires of schools and staff.	- Process data, study and analyze results of the actual survey of schools and teaching and technical staff.	- Consultants of the project receive data of stage one of the survey so as to draft the final report of this stage.
Fourth Week	- Enlightenment of the project.	- Hold meetings through the education forum.	- Hold more than one meeting.
Fourth Week (continued)	- The trial survey of students' questionnaires	- A sample of schools is selected for the trial study and it is conducted within two days.	



October 2010			
Date	Objectives	Executive Procedures	Implementation requirements
First Week	<ul style="list-style-type: none"> - Documentation of the project 	<ul style="list-style-type: none"> - Filming a documentary about the project. - Invites tenders by the project group and Purchasing Department to identify the company which is going to make the film. 	
	<ul style="list-style-type: none"> - Analyze the trial study 	<ul style="list-style-type: none"> - The trial study is analyzed and the analysis is made use of in the actual implementation. 	
	<ul style="list-style-type: none"> - Train international schools on how to complete forms. 	<ul style="list-style-type: none"> - Hold a training meeting and train participants on using the webpage and complete forms. 	
From the first week to the fourth week	<ul style="list-style-type: none"> - Modify the timing of implementation of the actual survey for students and private and international schools. 	<ul style="list-style-type: none"> - The timing of implementation of the actual survey for students and private and international schools is modified to be as follows: - Government schools' students (1-7) and (8-12). - All targeted categories in private schools. - All targeted categories in international schools, the Royal Guard College, Islamic institutes and special education schools. 	<ul style="list-style-type: none"> - The survey group makes field visits during the actual implementation to all targeted categories during the month of October.
The second Week	<ul style="list-style-type: none"> - Inauguration of the project by HE the Undersecretary for Planning and Human Resources Development 		<ul style="list-style-type: none"> - Two schools (grade 1-7) and (grade 8-12) are chosen to inaugurate the project. - Invite supervisors of categories to attend the inauguration

November 2010			
Date	Objectives	Executive Procedures	Implementation requirements
First Week	<ul style="list-style-type: none"> - Processing data and concluding indicators and reports resulting from the actual survey. 	<ul style="list-style-type: none"> - Look into data entered to assure the accuracy processes. - Conclusion of indicators. 	

December 2010			
Date	Objectives	Executive Procedures	Implementation requirements
Third Week	<ul style="list-style-type: none"> - Look into results and outcomes of the project. 	<ul style="list-style-type: none"> - Present the results and indicators to team of development of the document on ICT indicators in the education sector 	
Fourth Week	<ul style="list-style-type: none"> - Inform the educational community and other parties involved in the project of the results of the survey project. 	<ul style="list-style-type: none"> - Publish the final report. 	

January 2011			
Date	Objectives	Executive Procedures	Implementation requirements
Second Week	<ul style="list-style-type: none"> - Inform the educational community and other parties involved in the project (the former Ministry of National Economy and the Information Technology Authority of the results of the survey project. - Develop recommendations and submit them to parties in charge of the project. 	<ul style="list-style-type: none"> - Organize a symposium to present the outcomes of the project. 	<ul style="list-style-type: none"> - Fix a date for conducting the symposium. - Develop brochures of the symposium - Develop papers of the symposium - Invite participants

Note: the plan is very flexible to accommodate any emerging developments during implementation. The head of the central team supervise the execution of the plan.

Appendix (2)

The school form (completed by the school committee)

Basic data:			
• School code: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>			
• School name:			
Means of contact with school:			
• Telephone No.: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>		Mobile phone No.: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
• Fax No. (If any): <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>			
• E-mail (If any):			
• Address: Governorat			
1. Musact	4. Dhofar	7. Mussandum	10. Al Buraimi
2. Batinah North	5. Batinah South	8. Sahrqyah North	11. Sharqyah South
3. Al Dhahirah	6. Al Dakhilyah	9. Al Wusata	
Type of Education:			
<input type="checkbox"/> Basic <input type="checkbox"/> Post-basic <input type="checkbox"/> General <input type="checkbox"/> Private <input type="checkbox"/> International <input type="checkbox"/> Special			
• Type of School : <input type="checkbox"/> Government <input type="checkbox"/> Non-governemnt			
• Grade : from <input type="text"/> to <input type="text"/>			
• Level of education at school:			
• Total of each of the followings:			
Teaching staff	males <input type="text"/> <input type="text"/>	feamles <input type="text"/> <input type="text"/>	
Administartive	males <input type="text"/> <input type="text"/>	feamles <input type="text"/> <input type="text"/>	
Classrooms	males <input type="text"/> <input type="text"/>	feamles <input type="text"/> <input type="text"/>	mixed <input type="text"/> <input type="text"/>
Students	males <input type="text"/> <input type="text"/>	feamles <input type="text"/> <input type="text"/>	
• Total of each of the followings on the day of the Survey			
Teaching staff	males <input type="text"/> <input type="text"/>	feamles <input type="text"/> <input type="text"/>	
Administartive	males <input type="text"/> <input type="text"/>	feamles <input type="text"/> <input type="text"/>	
Students	males <input type="text"/> <input type="text"/>	feamles <input type="text"/> <input type="text"/>	

Indicators of ICT (School)	
Total number of periods per week of all subjects and classrooms: <input type="text"/> <input type="text"/> <input type="text"/>	
Number of periods per week in which students acquire technological skills in all classrooms: <input type="text"/> <input type="text"/> <input type="text"/>	
Means of contact with school:	
Fixed telephone	<input type="checkbox"/> Mobile phone <input type="checkbox"/> Fixed and mobile <input type="checkbox"/> does not have
Does the school have a website ?	<input type="checkbox"/> Yes <input type="checkbox"/> No

If the answer is "Yes", what are the services provided by the website?

- ☐ Teaching plan
☐ Data on teaching, administrative and technical staff.
☐ Statistics on school
☐ Information on school
☐ Lessons

Does the school use the Oman Educational Portal? ☐ Yes ☐ No

If the answer of the question above is "No", what is the reason for not using the portal?

- ☐ The portal was provided by the Ministry.
☐ The internet coverage is not available.
☐ Other reasons

Does the school use the school management program? ☐ Yes ☐ No

If the answer of the question above is "No", what is the reason for not using the program?

- ☐ The program was provided by the Ministry.
☐ The staff was not trained on using the program.

Does the school administration use other administrative programs which are not under supervision of the Ministry of Education? ☐ Yes ☐ No

Computers are maintained: ☐ periodically ☐ upon request ☐ no maintenance

Does school receive instructions from any party on how to use computers? ☐ Yes ☐ No

Is the school connected to the internet? ☐ Yes ☐ No

If the answer is "No", please state the reason why the school is not connected to the internet:

- | | |
|--|---|
| <input type="checkbox"/> No internet coverage | <input type="checkbox"/> Social or cultural reasons |
| <input type="checkbox"/> Equipments and services are expensive | <input type="checkbox"/> Lack of knowledge/skills |
| <input type="checkbox"/> Language barrier | <input type="checkbox"/> No need for the internet |

If the answer is "Yes":

A) What is the type of the service which is used by the school to be connected to the internet?

- | | | |
|------------------------------|-----------------------------|------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | Analogue modem |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | ISDN |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | DSL |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | Cable modem |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | Mobile broadband |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | Other narrowband |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | other broadband |

B) What is the total number of computers which are connected to the internet?

Does the school use the local network (internet)? ☐ Yes ☐ No

Are the following electronic services provided at school?

- | | | |
|-------------------------------------|------------------------------|-----------------------------|
| Digital libraries | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Video conference (via the internet) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Electronic learning | <input type="checkbox"/> Yes | <input type="checkbox"/> No |



Number of computers available at the school according to the following purposes:	
a) for administrative purposes	
b) for learning purposes:	
- in learning resource center/centers	<input type="checkbox"/> <input type="checkbox"/>
- in computer lab/labs	<input type="checkbox"/> <input type="checkbox"/>
- in classrooms	<input type="checkbox"/> <input type="checkbox"/>
- in science laboratories	<input type="checkbox"/> <input type="checkbox"/>
c) for other purposes rather than the purposes mentioned above.	<input type="checkbox"/> <input type="checkbox"/>
d) total number of computers available at the school	<input type="checkbox"/> <input type="checkbox"/>

How many of the following devices and tools are good for use in your school?	
Smart boards	<input type="checkbox"/> <input type="checkbox"/>
The audio system of the radio broadcasting	<input type="checkbox"/> <input type="checkbox"/>
Flex cam	<input type="checkbox"/> <input type="checkbox"/>
Transparencies' projector	<input type="checkbox"/> <input type="checkbox"/>
Slides' projector	<input type="checkbox"/> <input type="checkbox"/>
Audio recorder	<input type="checkbox"/> <input type="checkbox"/>
Video player	<input type="checkbox"/> <input type="checkbox"/>
TV set	<input type="checkbox"/> <input type="checkbox"/>
Radio	<input type="checkbox"/> <input type="checkbox"/>
Proxima	<input type="checkbox"/> <input type="checkbox"/>
Monitors (video and computer)	<input type="checkbox"/> <input type="checkbox"/>
Digital cameras	<input type="checkbox"/> <input type="checkbox"/>
Digital video cameras	<input type="checkbox"/> <input type="checkbox"/>
Scanner	<input type="checkbox"/> <input type="checkbox"/>
Printer	<input type="checkbox"/> <input type="checkbox"/>
Interactive Board	<input type="checkbox"/> <input type="checkbox"/>
Computer microphone	<input type="checkbox"/> <input type="checkbox"/>
Intercom	<input type="checkbox"/> <input type="checkbox"/>
Headphones	<input type="checkbox"/> <input type="checkbox"/>
Disabled supporting technologies	<input type="checkbox"/> <input type="checkbox"/>
Robot	<input type="checkbox"/> <input type="checkbox"/>

- Numbers available at school of these facilities:

Audio studio	<input type="checkbox"/> <input type="checkbox"/>
TV studio	<input type="checkbox"/> <input type="checkbox"/>
Closed TV circle laboratory	<input type="checkbox"/> <input type="checkbox"/>
Language laboratory	<input type="checkbox"/> <input type="checkbox"/>
Computer laboratory	<input type="checkbox"/> <input type="checkbox"/>
Learning Resource center	<input type="checkbox"/> <input type="checkbox"/>
Virtual Science Laboratory	<input type="checkbox"/> <input type="checkbox"/>
Educational software	<input type="checkbox"/> <input type="checkbox"/>
Video conference	<input type="checkbox"/> <input type="checkbox"/>

Students

Average number of students in a classroom who attend lessons approved in the school timetable:

- IT
Computer lab males ☐☐ females ☐☐
LRC males ☐☐ females ☐☐
- Computer lessons in:
Computer lab males ☐☐ females ☐☐
LRC males ☐☐ females ☐☐
- A similar technological curricula (for private and international schools):
Computer lab males ☐☐ females ☐☐
LRC males ☐☐ females ☐☐

Administrative and Teaching staff

Are there training courses/workshops/ in the field of ITC provided for teachers in the school?

Yes ☐

No ☐

What is the total average of training courses/workshops per annum provided in the field of ICT for the teaching and administrative staff inside the school?

Appendix (3)

The administrative, teaching and technical staff form (completed by the administrative, teaching and technical staff)

Basic data
• Employee No. : <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
• School Code :

Information Technology Indicators (administrative, teaching and technical staff)			
Do you have an academic qualification in ICT (a certificate)? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If the answer is "Yes", what is the name of the certificate you obtained?			
<input type="checkbox"/> Diploma	<input type="checkbox"/> Bachelor	<input type="checkbox"/> Master's	<input type="checkbox"/> Doctorate
Did you joined training programs in using ICT in education? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If the answer is "Yes", How many training programs you have joined during the last three years?			
Do you have a mobile telephone? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Do you use a digital camera? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Do you use the internet? <input type="checkbox"/> inside the school <input type="checkbox"/> outside the school <input type="checkbox"/> I don't use it			
Do you have an active e-mail account? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If your answer is "Yes" for question (8) , Do you use the e-mail to communicate with your students? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Do you have a computer at home? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If your answer is "No", what is the reason for not ahving it?			
<input type="checkbox"/> No interent coverage	<input type="checkbox"/> Social or cultural reasons		
<input type="checkbox"/> Equipments and services are expensive	<input type="checkbox"/> Lack of knowledge/skills		
<input type="checkbox"/> Langauge barrier	<input type="checkbox"/> No need for the interent		
Do you have an internet connection at home? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If your answer is "No", what is the reason for not having it?			
<input type="checkbox"/> No interent coverage	<input type="checkbox"/> Social or cultural reasons		
<input type="checkbox"/> Equipments and services are expensive	<input type="checkbox"/> Lack of knowledge/skills		
<input type="checkbox"/> Langauge barrier	<input type="checkbox"/> No need for the interent		
Do you use the Oman educational portal ? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Do you use the school management program? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Modern tools and technologies at school used by you for these purposes:			
	Administartive	Educational	I do not use
Computer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smart boards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The audio system of broadcasting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flex cam	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transparencies' projector	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Slides' projector	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Audio recorder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Video player	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TV set	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Radio	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proxima	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monitors (video and computer)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Digital cameras	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Digital video cameras	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scanner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Printer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interactive Board	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Computer microphone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intercom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Headphones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Disabled supporting technologies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Your own modern tools and technologies at school used by you for these purposes:

	Administrative	Educational	I do not use
Computer			
Digital cameras			
Digital video cameras			
Radio			
Other			

Facilities used by you for these purposes:

	Administrative	Educational	I do not use
Audio studio			
TV studio			
Closed TV circle laboratory			
Language laboratory			
Computer laboratory			
Learning Resource center			
Virtual Science Laboratory			
Educational software			

Appendix (4)
Grade 1 – 7 Students' form
(completed by classrooms' masters)

Basic data		
School Code: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>		
Name of the school:		
Grade: Classroom: Total number of students: <input type="text"/> <input type="text"/>		
Total number of students on the day of the survey:		
IT Indicators (Grade 1-7 students)		
How many students possess mobile telephones :	Males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
How many students have compuerts at home:	males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
How many students use computers at:		
School:	males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
Home :	males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
Other places	males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
Do not use computers	males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
How many students use computers to do school activties and assignemnts?		
	males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
How many students can use digital camera?	males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
How many students can make a webpage?	males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
How many students use the electronic mail?	males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
How many students use the interne at :		
School:	males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
Home :	males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
Other places	males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
Do not use computers	males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
How many students use the Internet for the following purposes:		
To obtain information:	males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
For entertainment and playing games:	males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
To have access to the educational poratl	males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
For studying	males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
For Communication (via e-mailb etc)	males <input type="text"/> <input type="text"/>	females <input type="text"/> <input type="text"/>
How many periods per week in which students use computers at schools according to the approved school time-table?		
How many periods per week in which students usethe internet at schools according to the approved school time-table?		

Appendix (5)
Grade 8 – 12 Students' form
(completed by students)

Basic data	Grade 8 -12 students
Name of the school:	
Student Code: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
Student's name:	
Grade:	
Type/sex :	<input type="checkbox"/> males <input type="checkbox"/> females
Nationality:	<input type="checkbox"/> Omani <input type="checkbox"/> Non-Omani
Telephone/mobile phone (if any) number :	
Fax number (if any) :	
E-mail address (if any):	
IT Indicators	
Do you have a mobile telephone? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Do you have computer at home? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Do you use a computer at:	
Home	
School	
Other places	
I do not use it	
Can use the computer to do school activities and assignments ? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Can you use digital cammer? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Can you make a webpage? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Do you have an active e-mail? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Do you use the internet at:	
Home	
School	
Other places	
I do not use	
What is your purpose of using the internet?	
To obtain information	Entertainment and playing games
Educational portal	Studying
Communication (e-mail ..etc..)	Electronic governemnt
Banking and financial services	Not applicable
How many periods per week in which computers are used at schools?	
How many periods per week in which the internet are used at schools?	

Appendix (6) **The Training Guide**



The Sultanate of Oman
Ministry of Education

**The Project of Survey
of ICT Indicators in the Education Sector**

**The Electronic Guide
For Training on Using Electronic Forms**



The Guide Contents

How to use the guide

Methods of training, activities and evaluation

Concepts and terms

Instructions to answer questions of the forms

The school form

The administrative, teaching and technical staff form

Grade 1-7 students form

Grade 8 -12 students form

How to use the electronic guide

1. The guide is designed according to the self learning approach. Targeted categories can train themselves by using the guide.
2. The guide should be referred to get help whenever it is necessary.
3. Instructions must be read carefully before beginning completing the forms.

The training guide includes a set of concepts and terms which must be get acquainted with to solve any problem of understanding or ambiguity in interpretation of items and questions.

Methods of training, activities and evaluation

After you finish training on the contents of the form, proceed with doing the following activities and applications:

1. Train yourself on completing data included in different items.
2. Try to have access to some tools and facilities listed on the form through searching the internet.
3. Record any problem or ambiguity you come across.
4. Discuss with your colleagues to solve such problems and ambiguities.
5. Seek the help of trainers to solve these problems.
6. Present your experience to your colleagues trainees.

Concepts and Terms

Concept or Term	Definitions
Indicator	A mathematical value (a percentage) which indicates the extent to which a device /tool /technical facilities is available in an educational institution.
The average	The total of all individuals divided by all units (e.g. total of all students ÷ number of classrooms = the average number of students in a classroom.
The total	The overall total of certain individuals or units.
Social or cultural reasons	Reasons based on traditions and social customs or on prevailing cultural and social beliefs.
The language barrier	The inability of dealing with websites using other languages (especially English language).
Analogue modem	Analogical information carrier (modem) using a fixed telephone line installed at school.

Concept or Term	Definitions
ISDN	The digital network for integrated services provided by internet companies such as Oman Mobile.
DSL	Digital subscription line speedy service provided by internet companies such as Oman Mobile.
Cable modem	Digital cable information carrier (modem) installed at school.
Mobile broadband	Mobile broadband service to connect to data and provided by companies such as Oman Mobile.
Other narrowband	Other narrowband service to connect to data and provided by companies such as Oman Mobile
Other broadband	Other broadband service to connect to data and provided by companies such as Oman Mobile.
Internat	A set of computers connected to each others via a network which can be accessed by users who have the right to use it only inside the school and cannot be used from outside the school.
Digital libraries	An online library in which the school is enrolled or which is installed by the school for its students where all books can be electronically accessed to, indexed and classified.
Online video conference	A conference which can be organized online by using software such as the messenger accompanied with video cameras as well as textual and vocal conversations.
Electronic learning	Designing of school subjects using interactive mediums and present them on electronic systems of classrooms using discussion tools and electronic mail.
Smart board	A board on which computerized materials can be displayed.
The audio system of broadcasting	It is composed of amplifiers, microphones, loudspeakers and mixers (e.g. the school broadcasting system)
Flex cam	A video camera provided with a cable to connect it directly to a computer.
Intercom	An audio system composed of two units of transmission and receiving in two separate rooms, used by teachers and students or two groups of students to communicate in both directions.
Computer microphone	A microphone attached to the computer for audio recording and/or for conducting a conversation with a student/teacher who uses the messenger.
Interactive board	It is also called the interactive classroom where computerized information can be displayed. It is also interactively used for writing, drawing and explaining scientific ideas as well as materializing them. It provides teachers with a lot of geometrical tools, shapes and other readymade figures.



Concept or Term	Definitions
Disabled supporting technology	All types of technology which are used to assist learners who are suffering from sight, hearing or motion disabilities.
Robot	A set of objects in shapes of human beings which are especially programmed to carry out certain automatic movements. Programming ranges from simple types to man-made intelligence.
Audio studio	A room which is provided with all recording and audio delivery. The room is isolated by sound isolators and includes control, direction, montage, normal audio copying and normal and electronic TV copying. It is also provided with software, discs and different sound effects.
TV studio	A room which is provided with all recording and audio delivery. The room is isolated by thick sound isolators and includes control, direction, montage, normal and electronic TV copying. It is also provided with software, discs and different sound effects.
Closed TV circle laboratory	A laboratory provided with recording cameras which are directly connected to TV monitors. The laboratory is used for audiovisual interaction between teachers and students. It includes many classrooms which are connected to each others through this closed TV circle.
Language laboratory	A laboratory is provided with microphones and two directions headphones. Students sit in small separated cabins and interact vocally with the learned material and/or their teachers. A teacher can communicate with one or more students at the same time. The language laboratory is used to improve levels of reading, articulation, listening and language communication skills in general.
Virtual Science Laboratory	A computerized scientific laboratory (Chimlab) where teachers present and conduct physics or chemistry experiments using three dimension software which students may not be able to carry out them in real situations. The laboratory materializes experiments and use electronic probes and gloves to perform the experiments and observe their interactions and results.
Video conference	A conference which can be organized through a network using remote communication devices via satellites or the internet and where teachers and students can visually interact.
The radio	It is a system which is used by broadcasting stations to transmit educational and cultural programs within the school premises and/or for classroom teaching.
A similar technology curriculum	Any other similar IT or computer sciences curriculum which is learned by students as from grade one to ten at Basic Education schools, private or international schools, the Royal Guard Technical College and Islamic institutes.

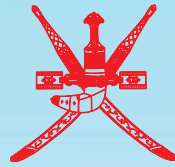
Instructions to answer questions of the forms

Answers instructions:

Based on the care the Sultanate of Oman pays to the development of using information and communication technology in the education sector, the Ministry of Education is implementing, in cooperation with the former Ministry of National Economy and the Information Technology Authority, the project of the survey of using information and communication technology in the education sector in the Sultanate of Oman. the form is completed by the classroom master in the presence of students. The success of this project depends on your effective participation and on the accurate and complete information you provide. Therefore, you are kindly requested to read each question carefully and to answer all the questionnaire questions without omitting any item. In case of any query, you can contact:

-(name, telephone number and e-mail address)
-(name, telephone number and e-mail address)

Appendix (7)
A report on the first exploratory study



The Sultanate of Oman
Ministry of Education

A Report on
The first trial of the implementation
of
The project of Survey of information
and Communication Technology in the Education Sector

Presented by the two consultants of the project:

Dr. Ali Mehdi Khazim
Dr. Ali Sharaf Al Musawi

September 2010

Introduction:

The project of Survey of Indicators of Information and Communication Technology in the Education Sector was conducted through cooperation between the Ministry of Education, the (former) Ministry of National Economy and the Information Technology Authority. It aimed at identifying qualitative and quantitative indicators of information and communication technology and its use in the educational sector in the Sultanate of Oman. The parties involved in this project have designed the final versions of questionnaires for administrative, teaching and technical staff as well as for schools, and organized a trial survey which lasted for two days, following development of a mini guide on the contents of the two forms. A multi-level training course was conducted in Muscat and in the regions. They also enlightened the targeted categories of the project through establishment of a website on Oman educational portal which was provided with all necessary requirements as well as using the short message service and electronic mail to inform the targeted categories of the latest developments.

Data drawn from the flow of information during the trial survey period was accumulated and analyzed. We shall explore in this report the results and implications of the analysis as well as the recommendations. The report shall also states the administrative and technical procedures of the trial survey.

The trial survey period:

The trial survey period started at 8:00 am of Sunday the 29th of August 2010 and ended at 12:00 noon on Monday the 30th of August 2010.

Objectives:


The trial survey of indicators of information and communication technology in the education sector aimed at realizing the following objectives:

1. Identify the extent of the effectiveness of forms to extract indicators.
2. Identify weaknesses and ambiguities in the items of the forms.
3. Assure the correctness of coding of data.
4. Identify difficulties that may face implementation.
5. Make necessary modifications.

Mechanism of implementation:

The trial survey was implemented in accordance with the following steps:

1. Upload the two forms on the educational portal to be completed online.
2. Allow access to the forms at 8:00 am on Sunday the 29th of August 2010 by all administrative, teaching and technical staff, and school committees to complete the forms.

- 
3. Observe the flow of information and follow up how the targeted categories deal with data and how they complete the forms.
 4. Inform the consultants right away of the project of the progress made in completing the forms.
 5. Deny access to forms at 12:00 noon on Monday 30th of August 2010.
 6. Accumulate data in forms of data base electronic files and send them to consultants.
 7. Analyze data using the SPSS programming.
 8. Draw implications for the actual implementation of the project.

The targeted categories:

1. Four schools of each educational region were chosen. Representation of all types of schools and systems of education were taken into consideration in selecting schools.
2. The sample of school forms included 32 forms and the administrative, teaching and technical staff forms were 95.

Used tools:

In order to achieve the objective of the trial survey, electronic versions of the forms were used. Their validity and consistency were verified according to well known scientific methods of verifications. They were subject to revision and editing at several stages by specialists and by the central team under the supervision of the consultants of the project.

The school form includes instructions on how to respond to the items and number of questions which are distributed over four parts. The first part is concerned with basic data of schools, the second covers the IT indicators in the school, the third part includes questions on students and the fourth on the administrative, teaching and technical staff.

The administrative, teaching and technical staff form includes instructions on how to respond to the items and number of questions on basic data and other questions on IT indicators regarding the staff.

Results of the trail survey:

The following results were concluded in response to the objectives stated above and after the initial analysis of data of both samples of schools and staff was conducted:

1. The forms used in the survey proved to be effective in drawing required indicators.
2. No shortages or ambiguities in forms' items.
3. Coding of data was correct and they were legible and analyzable by the SPSS program.

4. Implementation of the trial survey did not face any difficulties.
5. There was no need to make modifications to both forms.
6. Transcription and flow of data were smooth, the thing that indicates the ability of the educational portal to contain the pressure which shall result from the additional flow of data during the actual implantation of the survey.
7. Management of processes of data collection and analysis were efficient and conducted within reasonable period of time despite the big size of the sample. This proves the high ability of the educational portal as well as the abilities of the teams concerned with the management of this phase during the actual implementation of the survey.

The percentage of wrong responses in the data:

It is scientifically agreed that, in social studies researches, including educational and psychological studies, the error percentage should not exceed 5%. The percentage of wrong answers in both samples of schools and the administrative and teaching forms was less than 5%. This is an indicator of trust and confidence in results of more than 95%.

Implications and recommendations:

1. The accuracy and properness of preparations which was positively reflected on the method of the field implementation of trial survey, and proved the smoothness and flexibility of the implementation.
2. The efficiency of level of coordination between parties involved in the project including persons in charge, consultants and technicians in a way that ensures the presence of spirit of cooperation and commitment to the specified action plan.
3. The indications of the trial survey provide assurance that there shall not be any difficulties or unexpected surprises during the actual survey.
4. Start the process of comprehensive survey of school and administrative, teaching and technical staff according to the approved timetable.
5. Make use of implications and recommendations of this phase of the project of the trial field survey during the second phase of students' forms.

Conclusion

Based on the above-mentioned results, inputs and recommendations, all objectives of the trial survey were achieved. The outcomes and results were very satisfying, the thing that indicates that the planning phase was very accurate and the implementation phase was very efficient.

Therefore, we recommend that the actual survey of school and administrative, teaching and technical forms should be implemented in their specified time.



Appendix (8)
A report on the second exploratory study



The Sultanate of Oman
Ministry of Education

A Report on
The second trial of the implementation
of
The project of Survey of information
and Communication Technology in the Education Sector

Presented by the two consultants of the project:

Dr. Ali Mehdi Khazim
Dr. Ali Sharaf Al Musawi

October 2010



Introduction:

In continuation of the implementation of the project of survey of IT indicators in the education sector, the concerned committees implemented the second trial survey of students' questionnaires so as to assure the readiness and availability of technical and logistical facilities to the field implementation. We include herewith a detailed statement of all procedures which were taken in this respect as well as the results and implications of the second trial survey.

The trial survey period:

The trial survey period started at 8:00 am of Saturday the 25th of September 2010 and ended on Sunday the 26th of September 2010.

Objectives:

The second trial survey of indicators of information and communication technology in the education sector aimed at realizing the following objectives:

1. Identifying the extent of the effectiveness of forms to extract indicators.
2. Identifying weaknesses and ambiguities in the items of the forms.
3. Assuring the correctness of coding of data.
4. Identify difficulties that may face implementation
5. Making necessary modifications.


Mechanism of implementation:

The trial survey was implemented in accordance with the following steps:

1. Upload the two forms on the educational portal to be completed online.
2. Allow access to the forms at 8:00 am on Saturday the 25th of September 2010 .
3. Observe the flow of information and follow up how the targeted categories deal with data and how they complete the forms.
4. Inform the consultants right away of the progress made in completing the forms.
5. Deny access to forms at 12:00 noon on Sunday 26th of September 2010.
6. Accumulate data in forms of data base electronic files and send them to consultants.
7. Analyze data using the SPSS programming.
8. Draw implications for the actual implementation of the project.

The targeted categories:

1. Two schools of each educational region were chosen. One of them is grade 1-7 school where



forms were completed by class masters, and the other is grade 8-12 school where student completed their own forms.

2. The sample of grade 1-7 schools forms included 298 students' from 10 schools, and the sample of grade 8-12 schools included 419 students from 11 schools.

Used tools:

In order to achieve the objective of the trial survey, electronic versions of the forms were used for both samples where the grade 1-7 forms were completed by class masters, and grade 8-12 forms were completed by students. Their validity and consistency were verified according to well known scientific methods of verifications. They were subject to revision and editing at several stages by specialists and by the central team under the supervision of the consultants of the project.

Each form includes instructions on how to respond to the items and number of questions which are distributed over two parts. The first part is concerned with basic data of schools, meanwhile the second covers the IT indicators.

Results of the trial survey:

The following results were concluded in response to the objectives stated above and after the initial analysis of data of both samples of students was conducted:

1. The forms used in the survey proved to be effective in drawing required indicators.
2. No shortages or ambiguities in forms' items.
3. Coding of data was correct and they were legible and analyzable by the SPSS program.
4. Implementation of the trial survey did not face any difficulties.
5. There was no need to make modifications to both forms.
6. Transcription and flow of data were smooth, the thing that indicates the ability of the educational portal to contain the pressure which shall result from the additional flow of data during the actual implantation of the survey.
7. Management of processes of data collection and analysis were efficient and conducted within reasonable period of time despite the big size of the sample. This proves the high ability of the educational portal as well as the abilities of the teams concerned with the management of this phase during the actual implementation of the survey.

The percentage of wrong responses in the data:

The percentage of wrong answers in both samples of schools was 0%. This is due to the experience of the team gained from the previous trial survey of indicators of schools and administrative, teaching and technical staff.



Implications and recommendations:

1. The accuracy and properness of preparations which was positively reflected on the method of the field implementation of trial survey, and proved the smoothness and flexibility of the implementation.
2. The efficiency of level of coordination between parties involved in the project including persons in charge, consultants and technicians in a way that ensures the presence of spirit of cooperation and commitment to the specified action plan.
3. The indications of the trial survey provide assurance that there shall not be any difficulties or unexpected surprises during the actual survey.
4. Start the process of comprehensive survey of school and administrative, teaching and technical staff according to the approved timetable.
5. Make use of implications and recommendations of this phase of the project of the trial field survey during the second phase of students' forms.

Conclusion

The above-mentioned results indicate that all objectives of the trial survey were achieved. The outcomes and results were very satisfying, the thing that indicates that the planning phase was very accurate and the implementation phase was very efficient.

Therefore, we recommend that the actual survey of grade 1-7 and 8-12 students' forms should be implemented in their specified time.

Appendix (9)

Indicators of schools and methods of their calculation

No.	Indicator	Method of Calculation
1	Percentage of schools which have fixed telephone line or mobile phone to the total number of schools	This indicator is calculated by dividing the number of schools which have fixed telephone line or mobile phone over the total number of schools X 100
2	Percentage of schools which have fixed telephone line	This indicator is calculated by dividing the number of schools which have fixed telephone line over the total number of schools X 100
3	Percentage of schools which have mobile phone	This indicator is calculated by dividing the number of schools which have mobile phone over the total number of schools X 100
4	Percentage of schools which have fixed telephone line and mobile phone to the total number of schools	This indicator is calculated by dividing the number of schools which have fixed telephone line and mobile phone over the total number of schools X 100
5	Percentage of schools which have no communication means	This indicator is calculated by dividing the number of schools which have no communication means over the total number of schools X 100
6	Percentage of schools which have web sites on the internet	This indicator is calculated by dividing the number of schools which have websites over the total number of schools X 100
7	Percentage of schools which have web sites on the internet as per the services provided by the web site	This indicator is calculated by dividing the number of schools which have web sites on the internet as per the services provided by the web site over the total number of schools X 100.
8	Percentage of schools which use the educational portal of Oman	This indicator is calculated by dividing the number of schools which use the educational portal of Oman over the total number of schools X 100.
9	Percentage of schools which do not use the educational portal of Oman for certain reasons	This indicator is calculated by dividing the number of schools which do not use the educational portal of Oman for certain reasons over the total number of schools X 100.
10	Percentage of schools which use the school management program	This indicator is calculated by dividing the number of schools which use the school management program over the total number of schools X 100.
11	Percentage of schools which do not use the school management program due to the fact that this program is not available to the total number of schools which do not use the program	This indicator is calculated by dividing the number of schools which do not use the school management program due to the fact that this program is not available over the total number of schools which do not use the program X 100.

No.	Indicator	Method of Calculation
12	Percentage of schools which use computerized programs in processing administrative practices other than the school management program or the educational portal of Oman	This indicator is calculated by dividing the number of schools which use computerized programs in processing administrative practices other than the school management program or the educational portal of Oman over the total number of schools X 100.
13	Ratio of computers/school	This indicator is calculated by dividing the total number of computers over the total number of schools.
14	Ratio of computers to schools which have computers	This indicator is calculated by dividing the total number of computers over the total number of schools which have computers.
15	Ratio of computers used for administrative purposes to the total number of schools which have computers	This indicator is calculated by dividing the total number of computers used for administrative purposes over the total number of schools which have computers.
16	Ratio of computers used for educational purposes to the total number of schools which have computers	This indicator is calculated by dividing the total number of computers used for educational purposes over the total number of schools which have computers.
17	Percentage of computers used for administrative purposes to the total number of computers	This indicator is calculated by dividing the total number of computers used for administrative purposes over the total number of computers X 100.
18	Percentage of computers used for educational purposes to the total number of computers	This indicator is calculated by dividing the total number of computers used for educational purposes over the total number of computers X 100.
19	Percentage of schools which have learning resource centers	This indicator is calculated by dividing the total number of schools which have learning resource centers over the total number of schools X 100.
20	Percentage of schools which have computer laboratories	This indicator is calculated by dividing the total number of schools which have computer laboratories over the total number of schools X 100.
21	Percentage of schools which have computers inside classrooms	This indicator is calculated by dividing the total number of schools which have computer inside classrooms over the total number of schools X 100.
22	Percentage of schools which have periodical maintenance to their computers	This indicator is calculated by dividing the total number of schools which have periodical maintenance to their computers over the total number of schools X 100.
23	Percentage of schools which receive instructions from any source on how to use computers	This indicator is calculated by dividing the total number of schools which receive instructions from any source on how to use computers over the total number of schools X 100.
24	Percentage of schools which are connected to the internet	This indicator is calculated by dividing the total number of schools which are connected to the internet over the total number of schools X 100.



No.	Indicator	Method of Calculation
25	Percentage of schools which are not connected to the internet	This indicator is calculated by dividing the total number of schools which are not connected to the internet of schools which are not connected to the internet over the total number of schools X 100.
26	Percentage of schools which are not connected to the internet according to certain reasons	This indicator is calculated by dividing the total number of schools which are not connected to the internet according to certain reasons over the total number of schools X 100.
27	Percentage of schools connected to the internet according to connection service	This indicator is calculated by dividing the total number of schools connected to the internet according to connection service over the total number of schools X 100.
28	Percentage of computers connected to the internet	This indicator is calculated by dividing the total number of computers connected to the internet over the total number of computers X 100.
29	Ratio student/computer	This indicator is calculated by dividing the total number of students over the total number of computers.
30	Percentage of schools which have intranet	This indicator is calculated by dividing the total number of schools which have intranet over the total number of schools X 100.
31	Percentage of schools which have radio (one or more) used for educational purposes	This indicator is calculated by dividing the total number of schools which have radio over the total number of schools X 100.
32	Percentage of schools which have televisions (one or more) used for educational purposes	This indicator is calculated by dividing the total number of schools which have television used for educational purposes over the total number of schools X 100.
33	Ratio student/computer in computer laboratories	This indicator is calculated by dividing the total number of students who attend IT, computer or other appropriate lessons over the total number of computers in computer laboratories.
34	Ratio student/computer in learning resource centers	This indicator is calculated by dividing the total number of students who attend IT, computer or other appropriate lessons over the total number of computers in learning resource centers
35	Percentage of schools which provide training courses/workshops to administrative and teaching staff in the field of information and communication technology	This indicator is calculated by dividing the total number of schools which provide training courses/workshops to administrative and teaching staff over the total number of schools X 100.

Appendix (10)

Indicators of administrative and teaching staff and methods of their calculation

No.	Indicator	Method of Calculation
1	Percentage of administrative and teaching staff who have an specialized academic qualification in information and communication technology to the total number of staff.	The administrative and teaching staff who have an specialized academic qualification in information and communication technology over the total number of staff X 100
2	Percentage of administrative and teaching staff who have diplomas in information and communication technology to the total number of staff.	The administrative and teaching staff who have diplomas in information and communication technology over the total number of staff X 100.
3	Percentage of administrative and teaching staff who have bachelor degrees in information and communication technology to the total number of staff.	The administrative and teaching staff who have bachelor degrees in information and communication technology over the total number of staff X 100.
4	Percentage of administrative and teaching staff who have master degrees in information and communication technology to the total number of staff.	The administrative and teaching staff who have master degrees in information and communication technology over the total number of staff X 100.
5	Percentage of administrative and teaching staff who have doctorates in information and communication technology to the total number of staff.	The administrative and teaching staff who have doctorates in information and communication technology over the total number of staff X 100.
6	Percentage of trained administrative and teaching staff in information and communication technology in education to the total number of staff.	The trained administrative and teaching staff in information and communication technology in education over the total number of staff X 100.
7	Percentage of administrative and teaching staff who have mobile telephones to the total number of staff.	The administrative and teaching staff who have mobile telephones over the total number of staff X 100.
8	Percentage of administrative and teaching staff who use digital cameras to the total number of staff.	The administrative and teaching staff who use digital cameras over the total number of staff X 100.
9	Percentage of administrative and teaching staff who use the internet to the total number of staff	The administrative and teaching staff who use the internet over the total number of staff X 100.
10	Percentage of administrative and teaching staff who have active electronic mail accounts to the total number of staff	The administrative and teaching staff who have active electronic mail accounts over the total number of staff X 100.



No.	Indicator	Method of Calculation
11	Percentage of administrative and teaching staff who use electronic mail to communicate with students to the total number of staff	The administrative and teaching staff who use electronic mail to communicate with students over the total number of staff X 100.
12	Percentage of administrative and teaching staff who have personal computers at home to the total number of staff	The administrative and teaching staff who have personal computers at home over the total number of staff X 100.
13	Percentage of administrative and teaching staff who do not have personal computers at home due to different reasons to the total number of staff who do not have PCs at home.	The administrative and teaching staff who do not have personal computers at home due to different reasons over the total number of staff who do not have PCs at home X 100.
14	Percentage of administrative and teaching staff who have an internet connection at home to the total number of staff.	The administrative and teaching staff who have an internet connection at home over the total number of staff X 100 .
15	Percentage of administrative and teaching staff who use Oman educational portal to the total number of staff.	The administrative and teaching staff who use Oman educational portal over the total number of staff X 100.
16	Percentage of administrative and teaching staff who use the school management program to the total number of staff.	The administrative and teaching staff who use the school management program over the total number of staff X 100.
17	Percentage of administrative and teaching staff who use computers for educational purposes to the total number of staff.	The administrative and teaching staff who use computers for educational purposes over the total number of staff X 100.
18	Percentage of administrative and teaching staff who use television for educational purposes to the total number of staff.	The administrative and teaching staff who use television for educational purposes over the total number of staff X 100.
19	Percentage of administrative and teaching staff who use radio for educational purposes to the total number of staff.	The administrative and teaching staff who use radio for educational purposes over the total number of staff X 100.
20	Percentage of administrative and teaching staff who use computer laboratories for educational purposes to the total number of staff.	The administrative and teaching staff who use computer laboratories for educational purposes over the total number of staff X 100.
21	Percentage of administrative and teaching staff who use learning resource centers for educational purposes to the total number of staff.	The administrative and teaching staff who use learning resource centers for educational purposes over the total number of staff X 100.
22	Percentage of administrative and teaching staff who use educational software to the total number of staff.	The administrative and teaching staff who use educational software over the total number of staff X 100.

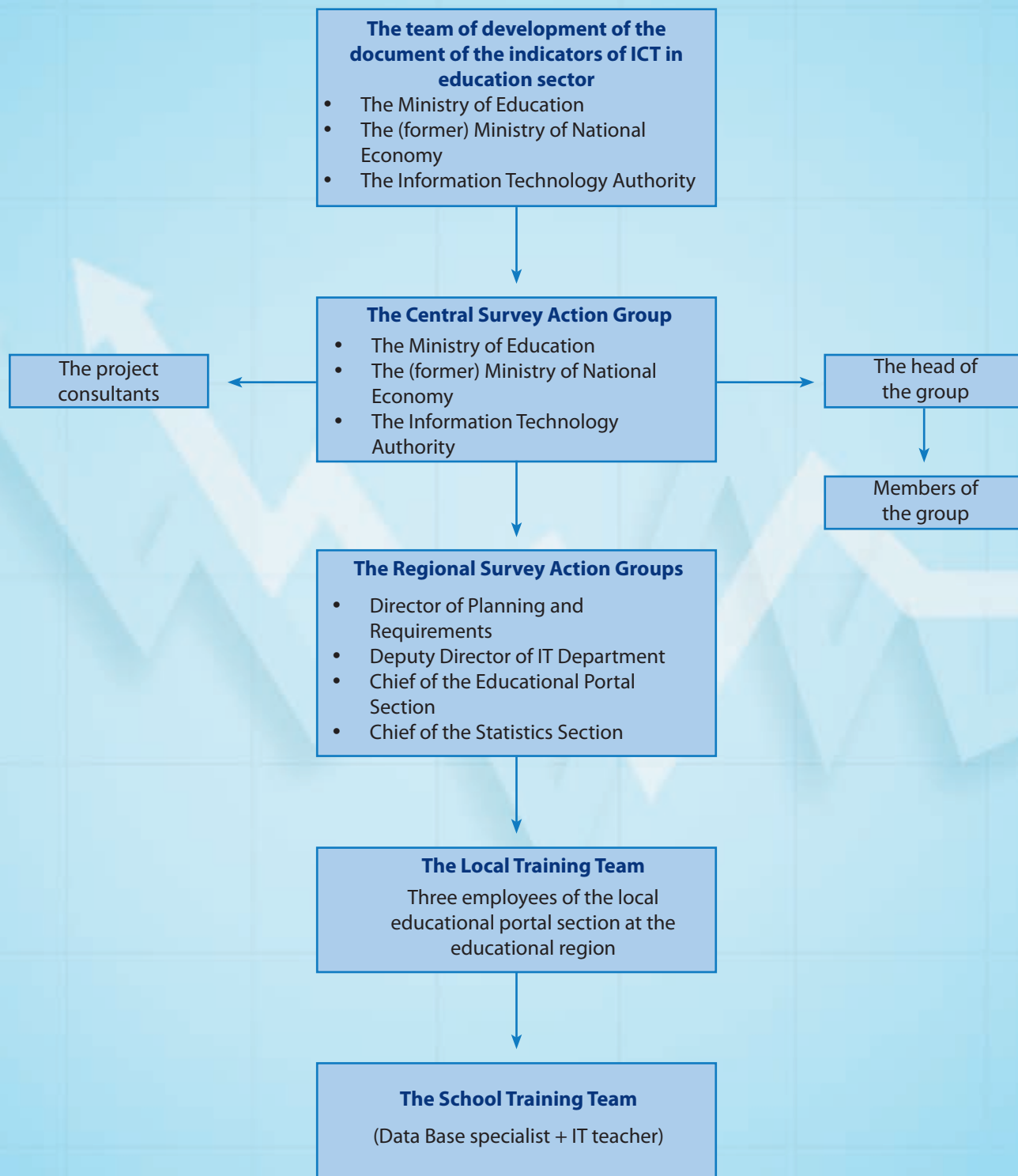
Appendix (11)

Indicators of students and methods of their calculation

No.	Indicator	Method of Calculation
1	Percentage of students who have mobile telephones to the total number of students.	Students who have mobile telephones over the total number of students X 100.
2	Percentage of students who have computers at home to the total number of students.	Students who have computers at home over the total number of students X 100.
3	Percentage of students who use computers to the total number of students.	Students who use computers over the total number of students X 100.
4	Percentage of students who use computers according to location of use to the total number of students	Students who use computers at home (for example) over the total number of students X 100.
5	Percentage of students who can use computers at schools to do activities and school assignments to the total number of students	Students who can use computers at schools to do activities and school assignments over the total number of students X 100.
6	Percentage of students who can use digital cameras to the total number of students.	Students who can use digital cameras over the total number of students X 100.
7	Percentage of students who can establish a web page to the total number of students.	Students who can establish a web page over the total number of students X 100.
8	Percentage of students who use the internet according to location of use to the total number of students	Students who use the internet at home (for example) over the total number of students X 100.
9	Percentage of students who use the internet according to purpose of use to the total number of students who use the internet	Students who use the internet according to purpose of use (studying for example) over the total number of students who use the internet X 100.
10	Percentage of number of periods per week in which students use computers in schools to the total number of weekly periods.	Number of periods per week in which students use computers in schools over the total number of weekly periods X 100.
11	Percentage of number of periods per week in which students use the internet in schools to the total number of weekly periods.	Number of periods per week in which students use the internet in schools over the total number of weekly periods X 100.

Appendix (12)

The Organizational Structure of the Project



Ministry of Education
Ministerial Decree No. (15/2010)

**Reformation of the Team of Development of the Document of Information and
Communication Technology Indicators in the Education Sector**

On the basis of the two Ministerial Decrees No. 320/2008 and 116/2009 regarding the formation of the team of development of information and communication technology indicators in the education sector,

And in accordance with the public interest,

It has been decided:

Item (1):

The joint action team of the Ministry of Education, the Ministry of National Economy and the Information Technology Authority to study the details of the report of development of the document on the information and communication technology indicators in the education sector in the Sultanate shall be reformed under the chairmanship of His Excellency Saud bin Salim Al Baloushi – the Undersecretary of the Ministry for Educational Planning and Development of Human Resources, and the membership of:

- From the Ministry of Education:
 - Khalid bin Suliman Al Syabi , Director General of Information Technology.
 - Redha bin Said Al Lawati, Deputy Director General of Planning and Quality Control.
 - Mohammed bin Khalfan Al Sheedi, Deputy Director of Curricula Development.
 - Said bin Ahmed Al Zidjali, Director of Statistics and Indicators Department – the Directorate General of Planning and Quality Control.
 - Moza bint Said Al Mughairya, Director of Information Systems – the Directorate General of Information Technologies.
 - Aymun bin Khamees Al Hadhrami, Studies and Follow up Officer at the Office of the Undersecretary of the Ministry for Educational Planning and Development of Human Resources – member & reporter.
- From the Ministry of National Economy:
 - Suliman bin Abd Al Raheem Al Zidjali, Director General of Publication and Information Center.



- Mohammed bin Humaid Al Jabri, Director of Social Studies Department.
- From the Information Technology Authority:
- Talal bin Suliman Al Rahbi , Chief of Media and Enlightenment Sector.

The team can seek the help of other experts and specialists to accomplish the assigned tasks.

Item (2):

The chairperson of the team shall form the central survey group and identify their assignments.

Item (3):

This decree comes into effect as from the date of issue.

Yahya bin Saud Al Sulaimi
Minister of Education

Issued on: 27/1/1431H corresponding to 13/1/2010

Ministry of Education
Administrative Decree No. (28/2010)

**Formation of the Central Survey Group of Information and Communication Technology
Indicators in the Education Sector**

On the basis of the Ministerial Decrees No. 320/2008 with its modifications, 116/2009 and (15/2010) regarding the formation of the team of development of information and communication technology indicators in the education sector,

And in accordance with the public interest,

It has been decided:

Item (1):

The Central Survey Group of Information and Communication Technology Indicators in the Education Sector is formed as follows:

- From the Ministry of Education:
 - Redha bin Said Al Lawati, Deputy Director General of Planning and Quality Control. Head of Group
 - Said bin Ahmed Al Zidjali, Director of Statistics and Indicators. Deputy
 - Abdul Jalil bin Ghareeb Al Mundhari, Director of the Budget, the Directorate General of Financial Affairs. Member
 - Tahra bint Al Haj Musa Al Lwatiya, Deputy Director of Statistics and Indicators, the Directorate General of Planning and Quality Control. Member
 - Ibrahim bin Said Al Jabri, Deputy Director of Information Systems – the Directorate General of Information Technologies. Member
 - Siddiqa bint Abdul Majeed Al Lwatiya, Deputy Director of the Office of International Schools – the Directorate General of Private Schools. Member
 - Sultan bin Said Al Wadhahi , Section Chief of the Educational Portal – the Directorate General of Information Technology. Member
 - Said bin Nasser Al Nua'mani, Section Chief of Quality Specifications – the Directorate General of Planning and Quality Control - member & reporter. Member



- From the Ministry of National Economy:
 - Hamed bin Soud Al Dighaishi, Specialist at the Ministry of National Economy. Member
- From the Information Technology Authority:
 - Kamla bint Humood Al Rahbiya , Specialist of Projects at the Information Technology Authority. Member

The group can seek the help of other persons to accomplish the assigned tasks.

Item (2):

The tasks and duties assigned to the Central Survey Group of Information and Communication Technology Indicators in the Education shall be as follows:

- Make necessary arrangements for carrying out all activities related to the survey project.
- Design and follow up an action plan for the project with all required accuracy.
- Supervise and follow up the phases of work in the survey project and take all necessary measures and arrangements.
- Solve problems and overcome difficulties which may face implementation of the project.
- Supervise training of work groups at educational regions.
- Develop a final report on results and indicators drawn from the survey and submit it to the team of development of the project document.

Item (3):

This decree comes into effect as from the date of issue.

Saud bin salim al Baloushi
Undersecretary
for Educational Planning & Development of Human Resources

Issued on: 5/3/1431H corresponding to 20/2/2010



The Consultants of the Survey Project:

- Dr. Ali Mahdi Khazim
Associated Professor, Psychology Department – College of Education, Sultan Qaboos University.
- Dr. Ali bin Sharaf Al Musawi
Associated Professor, Section Chief of Teaching & Learning Technologies – College of Education, Sultan Qaboos University.

Others who participated in the project:

- Mr. Al Rayah Othman Talballah
Educational Expert at the Directorate General of Planning & Quality Control – Ministry of education.
- Mr. Hammad bin Masoud Al Khayarri
Systems Supervisor at the Directorate General of Information Technologies – Ministry of Education

Translation of this report:

This report was translated into English by:
Mohammed Omer Ageed
Translator, Ministry of Education