Summary, Major Findings, Suggestions, Recommendations, Implications and Conclusions

6.0 SUMMARY

The general objectives of the research (Chapter-1) were to find out the status of IT, use and awareness among Iranian LISc faculty members, students and also to analysis their uses and non-uses of IT, purposes of using IT, as well as various IT services. The study was also expected to determine the policy programmes and possibilities, which help to improve and motivate use of IT and to suggest/recommend ways and means to overcome problems faced by faculty members and students. It also provides useful hints for planners and policy makers for improving IT facilities in academic departments of LISc in universities of Iran. Consequently, the study can contribute to develop national educational system and other IT based capabilities. There were 86 LISc departments with 180 full time faculty members and 7000 full time students, however part time faculty members and students were not included in the study. It is hoped that these findings would help in identifying elements for formulation of policies and programmes for the development of Iranians universities in general and academic LISc departments particularly. An attempt has been made to achieve the objectives. After analyzing and interpreting the available data, the researcher has come out with conclusions, suggestions, and recommendations, have been summarized below:

MAJOR FINDINGS

The major findings of the study are:

6.1 - 6.7 FACULTY MEMBERS AND STUDENTS PROFILE

1. Findings revealed that 63% of Iranian LISc faculty members and 26% of students were male, while 37% of faculty members and 74% of students were female. It is clear that majority of faculty members were male, while majority of students were female (Figures 5.1.1 & 5.1.2).

2. The study shows that majority (31%) of faculty members were in age group 41-50 (Figure 5.2.1).
It was found that 64% of Iranian LISc faculty teachers had Master degree and 36% PhD, while majority of students (71%) were going for under graduate (Bachelors) (Figures 5.3.1 & 5.3.2).

It was revealed that maximum (64%) of Iranian LISc faculty members were Lecturers, followed by 27% Assistant Professors, 6.5% Associate Professors and 2.5% Professors (Figure 5.4.1).

Findings show that maximum 76.3% of LISc faculty members graduated (last degree) from Iran followed by 9.3% from India, 6.8% from Australia, 5.1% from USA and 2.5% (minimum) from England (Figure 5.5.1).

It was observed that maximum 49% of Iranian LISc faculty teachers had 1-10 years teaching experience followed by 36% 11-20, 14% 21-30 and minimum 1% 31 & > (Figure 5.6.1).

It was found that maximum 53% of Iranian LISc teaching staff were good in English, 44% average and 3% (minimum) poor, while only 10% of the LISc students were good in English followed by maximum 63% average and 27% poor (Figures 5.7.1 & 5.7.2).

6.8 AWARENESS AND USE OF IT

- With regards to the first objective of the study, findings show that 95% of Iranian LISc academic members used IT and it confirmed the first assumption of the study (Figure 5.8.1). Furthermore, statistical Chi-Square Test shows a significant relationship between faculty members use of IT and their English levels (Table 5.8.7.1.1).

- It also was found that 87% of Iranian LISc students used IT and it confirmed the second assumption of the study (Figure 5.8.2). Furthermore, Statistical Chi-Square Test also indicated a significant relationship between students’ use of IT and their educational levels and English levels variables (Tables 5.8.3.2.1 & 5.8.7.2.1). Regarding to the second objective of the study, it was revealed that 5% of faculty teachers and 11% of students did not use IT (Figures 5.8.1 & 5.8.2).
6.9 REASONS FOR NOT USING IT

Based on the third research questions, it was found that 40% of IT non-users among LISc faculty teachers, had not access to IT followed by 40% were not familiar with IT and 20% had not time, whereas 59% of IT non-users among students were not familiar with IT followed by 30% had not access to IT and 11% had not time. It can be concluded that unfamiliarity and inaccessibility were the top two reasons for not using IT by both the groups (Figures 5.9.1 & 5.9.2).

6.10 PLACES TO USE IT

The study also shows that university and home combine together were (57%) the most favourable places to use IT for the LISc faculty teachers, while university (40.3%) was the most favourable place for students (Figures 5.10.1 & Table 5.10.2).

6.11 PURPOSES OF USING IT

With reference to the third objective of the study, it was observed that LISc faculty teachers used IT, mostly for classroom lectures (38.3%) followed by 22.5% for both classroom lectures and workshop presentations, 18.3% workshop presentation only and 21% did not specify any purposes (Figure 5.11.1). In case of students (40%) maximum of them used IT for information seeking, doing research works and leisure time (Table 5.11.2).

6.12 Research Purpose: In research activities majority (43%) of faculty teachers used IT for writing book/article/paper, conference presentations and doing research works (Figure 5.12.1).

USE OF IT TOOLS AND SERVICES

Regarding to the fourth objective of the study, LISc faculty members and students used the following IT tools and services.

6.13 Computer: In respect of computer, the study indicates that there is increasing trend towards computer (i.e. availability, awareness and use), based on
academic applications, faculty members are using computer facilities. 72% of (total 94%) academic staff used computer frequently followed by 18% sometimes, 4% rarely and 6% did not mention (Figure 5.13.1). Statistical Chi-Square Test shows a significant relationship between faculty members’ use of computer and their age and teaching experience (Tables 5.13.1.2 & 5.13.1.4). However, in case of students, the situations are not very encouraging. Academic departments are also not very sure about their hardware RAM, speed, capacity, compatibilities and softwares. It shows that 42% of students used computer frequently, 41% sometimes, 5% rarely (total 88%) and 12% did not mention (Figure 5.13.2). Statistical Chi-Square Test shows a significant relationship between students’ use of computer and their educational levels and English levels (Tables 5.13.2.2 & 5.13.2.4).

6.14 The Internet: It is the most widely used network between the both groups of respondents. Total 66% of faculty teachers used the Internet frequently followed by 24% sometimes, 4% rarely, total (94%), and 6% did not mention (Figure 5.14.1). Statistical Chi-Square Test showed a significant relationship between faculty teachers’ use of the Internet and their age and teaching experience (Tables 5.14.1.2 & 5.14.1.4). However, 38% of students used Internet frequently, 38% sometimes, 11% rarely (total 87) and 13% did not specify. Statistical Chi-Square Test showed a significant relationship between students’ use of Internet and their educational levels and English levels variables (Tables 5.14.2.2 & 5.14.2.4). LISc teachers are using more Internet facilities than students.

6.15 Intranet: It was found that 20% of faculty members, used Intranet frequently, followed by 15% sometimes, 10% rarely (total 45%), 24.2% did not use, 1.7% did not know and 29.2% did not mention (Table 5.15.1), while in case of students, 8.2% them used Intranet frequently, 15.9% sometimes, 21.5% rarely, 29.2% did not use 11.3% did not know and 14% did not mention (Table 5.21.2). It can be summarized that faculty teachers use Intranet more frequently than the students.
6.16 **LAN:** It showed that 25.8% of LISc faculty teachers *used* LAN *frequently* followed by 15.9% *sometimes*, 10% *rarely* (total 59.8%), 0.8% *did not know* and 30.8% *did not mention* (*Table 5.16.1*). Consequently, there is awareness and use of LAN among faculty members.

6.17 **Online Databanks:** It reveals that 45.8% of LISc teachers *used* online databases *frequently*, 25.8% *sometimes*, 8.3% *rarely* (total 79.9%), 4.2% *did not use* and 15.8% *did not mention* (*Table 5.17.1*). It shows that uses of online databanks are at the satisfactory level among faculty members.

6.18 **Offline Databanks:** It shows that 34% of academics used offline databanks *frequently*, 38% *sometimes*, 15% *rarely* (total 87%) and 13% *did not mention* (*Figure 5.18.1*), while in case of students 16% used databanks *frequently* followed by 29% *sometimes*, 20% *rarely* (total 65%), 14% *did not mention*, 3% *did not know* and 18% *did not mention* (*Table 5.17.2*). It indicates that maximum faculty members used offline databanks frequently, while maximum of students used them sometimes.

6.19 **CD and DVD Technologies:** It displays that 31.7% of faculty members used CD & DVD technologies *frequently*, 25.8% *sometimes*, 23.3% *rarely* (total 80.8%) and 1.7% *did not use*, 17.5% *did not mention* (*Table 5.19.1*), while 27.4% of students used CD & DVD technologies *frequently*, 30.5% *sometimes*, 18.7% *rarely* (total 76.6%), 6.9% *did not use*, 1% *did not know*, and 15% *did not mention* (*Table 5.25.2*). It can be summarized that use of CDs and DVDs are getting momentum in both the groups.

6.20 **Multimedia:** Among LISc faculty teachers 17.5% of them used multimedia *frequently*, followed by 29.2% *sometimes*, 15.8% *rarely* (total 62.5%), 10.8% *did not use* and 26.7% *did not mention* (*Table 5.20.1*), while in case of students 16% *used* multimedia *frequently*, followed by 23% *sometimes*, 18% *rarely* (total 57%), 21% *did not use*, 5% *did not know* and 17% *did not mention*, whereas students it was not very encouraging (*Figure 5.20.2*). It summarizes that awareness and use of
multimedia is low in comparison with the other components of IT among both the groups.

**6.21 Fax:** It was observed that 12.5% of LISc faculty teachers *used* fax *frequently*, followed by 20.8% *sometimes*, 35.8% *rarely* (total 69.1%), 13.3% *did not use* and 17.5% *did not mention* (*Table 5.21.1*). It concludes that use of fax among faculty members is low in comparison with other components of IT.

**6.22 Mobiles:** are favorable tools for information communication. 34.2% of LISc university teachers *used* mobiles *frequently* followed by 25% *sometimes*, 6.7% *rarely* (total 66%), 14.2% *did not use* and 20% *did not mention* (*Table 5.22.1*). Use and awareness of mobiles are encouraging and getting momentum day by day.

**6.23 Expert systems:** It shows that 2% of faculty members used expert systems *frequently*, 8% *sometimes*, 9% *rarely* (total 19%), 35% *did not use*, 9% *did not know* and 37% *did not mention* (*Figure 5.23.1*). It concludes that uses of expert systems among LISc faculty members are very low.

**6.24 Web:** It indicates that 65% of faculty members used web *frequently*, followed by 20.8% *sometimes*, 5% *rarely* (total 91), and 1.7% *did not use* 7.5% *did not mention* (*Table 5.24.1*). However, 7.7% of students used web *rarely* followed by 23.6% *sometimes*, 49.2% *frequently* (total 80.5%), 3.1% *did not use* and 2.1% *did not know* and 14.4% *did not mention* (*Figure 5.24.2*). It denotes that use of web is high by both groups and is highly favoured.

**6.25 E-mail:** It shows that 65% of faculty teachers used e-mail *frequently* followed by 22% *sometimes*, 8% *rarely* (total 95%) and 5% *did not mention* (*Figure 5.25.1*). It also indicates that 11.5% of students used e-mail *rarely* followed by 23.3% *sometimes*, 44.6% *frequently* (total 79.4%), 6.7% *did not use*, 0.5% *did not know* and 13.3% *did not mention* (*Figure 5.25.2*). It concludes that e-mail has become inseparable part of both group activities.
6.26 FTP: The study points out that 20% of faculty members used FTP frequently followed by 37.5% sometimes and 6.7% rarely (total 64.2%), 15.8% did not use and 20% did not mention (Table 5.26.1). It indicates that 16% of students used FTP rarely, 11% sometimes and 9% frequently (total 36%), 29% did not use, 12% did not know and 23% did not specify anything (Figure 5.26.2). It indicates that use of FTP among the students is low.

6.27 Videoconference: It was found that 0.8% of LISc faculty teachers used videoconference frequently followed by 3.3% sometimes, 5.8% rarely (total 9.9%), 53.3% did not use and 36.7% did not mention (Figure 5.27.1). But 1% of students used videoconference frequently followed by 2.6% sometimes and 8.5% rarely (total 12.1%), 48.7% did not use, 17.4% did not know and 21.8% did not mention (Figure 5.27.2). It denotes that use of videoconference is very low among the respondents.

6.28 Discussion Groups: It shows that 11.7% of faculty members used discussion groups frequently followed by 20.8% sometimes, 10.8% rarely (total 43.3%), 30% did not use and 26.7% did not mention (Table 5.28.1). It indicates that 13.6% of students took part in discussion groups rarely followed by 9.2% sometimes, 5.1% frequently (total 27.9%), 41.3% did not take part, 9.2% did not know and 21.5% did not mention (Table 5.28.2). It summarizes that although discussion group is not high popular among the respondents however, slowly getting momentum.

6.29 Newsgroups: It indicates that 14.2% of faculty members used newsgroups rarely followed by 25.8% sometimes, 13.3% frequently (total 53.3%), 21.7% did not use and 25% did not specify (Table 5.29.1). It concludes that only half of faculty members used newsgroups services.

6.30 News Services on the Internet: It shows that 24.2% of faculty teachers used news services on the Internet frequently followed by 25% sometimes, 14.2% rarely (total 63.4%), 11.7% did not use and 25% did not mention (Figure-5.30.1).
In case of students 22.6% of them used news services on the Internet rarely followed by, 26.9% sometimes, 10.5% frequently (total 60%), and 17.7% did not use 4.1% did not know and 18.2% did not mention (Table 5.30.2). It shows that nearly more than half of the respondents in both groups used news services on the Internet.

6.31 Guide Services on the Internet: It summarizes that 16.7% of faculty members used guide services on the Internet frequently followed by 27.5% sometimes, 8.3% rarely (total 52.5%), 15% did not use 32.5% did not mention (Table 5.31.1), however 22% of students used guide services on the Internet rarely followed by 15% sometimes, 4% frequently (total 41%), and 29% did not use 7% did not know and 23% did not mention anything (Figure. 5.31.2). It indicates that while nowadays guide services and directories are the wide used services of the Internet but it were not high popular among the respondents.

6.32 Chat: The study reveals that 34.2% of faculty members used chat on the Internet rarely followed by 12.5% sometimes, 12.5% frequently (total 59.2%), 8.3% did not use and 32% not mention (Table 6.32.1). But 23.1% of LISc students used chat services on the Internet rarely followed by 11% sometimes, 9% frequently (total 43.1%), and 38.2% did not used, 3.1% were not familiar with chat and 15.6% did not mention (Table 5.32.2). It concludes that faculty members used chat services more than students. Observation also showed that students particularly Bachelors use chat for non-academic purposes.

6.32.1 SMS: It displays that 14.1% of students used SMS on the Internet frequently followed by 8.2% sometimes, 10.3 rarely (total 32.6%), 43% 8% did not use, 5.4% did not know and 18% did not specify (Table 5.32.3). Faculty members were not asked about use of SMS. It shows that majority of students did not use SMS.

AUDIO VISUAL AIDS

6.33 Overhead Projectors: The result shows that 13% of faculty teachers used overhead frequently, followed by 21% sometimes, 23% rarely (total 57%), 29%
(maximum) *did not use* and 14% *did not mention* (*Table 5.33.1*). It concludes that only nearly half of faculty members use overhead projectors.

**6.34 Opaque:** It summarizes that 6.7% of faculty teachers *used* opaque projector *frequently* followed by 19.2% *sometimes*, 22.5% *rarely* (total 48.4%), 35.8% *did not use* and 15.8% *did not mention* (*Table 5.34.1*). It denotes that only half of faculty members used opaque projectors.

**6.35 Data Projectors:** The study reveals that 15% of faculty teachers used data projector *frequently* followed by 11% *sometimes*, 6% *rarely* (total 32%), 37% (maximum) *did not use* 1% *did not know* and 30% *did not mention* (*Figure 5.35.1*). However, 14.9% of students used data projector *rarely*, followed by 7.4% *sometimes* and 1.8% *frequently* (total 24.1%), 32.8% *did not use*, 23.3% *did not know* and 19.7% *did not mention* (*Table 5.35.2*). It concludes that use of data projectors among both groups of respondents is not encouraging.

**6.36 E-boards:** It indicates that 0.8% of faculty members used e-boards *frequently* followed by 3.3% *sometimes*, 6.7% *rarely* (total 10.8), 52.5% *did not use*, 1.7% *did not know* and 35% *did not mention* (*Figure 5.36.1*). It shows that uses of e-boards are very low in Iranian LISc academic departments.

**6.37 Digital Cameras:** The survey points out that 7.5% of faculty teachers *used* digital camera *frequently* followed by 8.3% *sometimes*, 7.5% *rarely* (total 23.3%), 42.5% (maximum) *did not use*, 1.7% *did not know* and 32.5% *did not mention* (*Table 5.37.1*). It concludes that the uses of digital cameras are low among faculty members.

**6.38 LISc Databanks:** The study shows that LISA is the most widely used LISc databanks (40% maximum) among faculty teachers and students (41% maximum) (*Figure 5.38.1 & 5.38.2*).
6.39 **LISc Software**: It indicates that Pars-Azerakhsh and Nossa (Iranian library software) were the two top library software being utilized by LISc faculty members and students (*Figures 5.39.1 & 5.39.2*).

6.40 **Office and SPSS Software**: The study points out that Word, Power Point, Excel and SPSS have been the most popular software tools being utilized by faculty teachers, while in case of students Word, has been the top software tool being utilized by them (*Figures 5.40.1 & 5.40.3*).

6.41 **Academic Productivity**: It shows that 18% of faculty members had academic articles/papers on the Internet, 73% had no paper on the Internet and 9% did not mention anything (*Figure 5.41.1*).

6.42 **Personal Home page on the Internet**: The study indicates that 7% of LISc faculty members had personal homepage on the Internet, 84% had no homepage and 9% did not specify anything (*Figure 5.42.1*).

6.43 **Factors Motivate Use of IT**: Regarding to the fifth objective of the study 33.3% of faculty members stated that teaching how to use IT motivates and helps them to use IT followed by 26.3% easy access to IT, 8.8% introducing IT and 31.6% all the mentioned factors. In case of students 40.5% of them reported teaching how to use IT motivates and helps students to use IT followed by 34.1% introducing IT, 15% easy access to IT and 10% all the mentioned factors (*Figures 5.43.1 & 5.43.2*).

6.44 **IT Facilities (Adequacy/Inadequacy) in LISc Departments**

It showed that 45% (maximum) of faculty members claimed that IT facilities in LISc departments were inadequate to perform their teaching and research careers, while 43% stated that they were adequate and 12% did not take part in the evaluation.
6.45 Faculty Members and Students’ Satisfaction/Unsatisfaction with the IT Facilities in LISc Departments

It was found that 75.8% (maximum) of faculty members were satisfied with the Internet facilities followed by 73.3% with computer facilities, 58.3% with databanks facilities, 35% with audio visual aids and 34.1% (minimum) with software tools. In case of students it indicates that 63.5% (maximum) of students reported their satisfaction with computer facilities in LISc departments followed by 62.3% with the Internet facilities, 50.2% with databank facilities, 46.6% with printers and 36.9% (minimum) with software tools.

6.46 PROBLEMS IN USING IT

6.46.1 Faculty Members’ Problems

Inadequacy of computers, printers, software, databanks, supplies and technical support, outdated capabilities for hardware, software, Internet connections and networking, inadequate training and experience for faculty members, inadequate funding and budget to purchase new IT facilities, lack of projection systems and audio visual aids in classrooms, low Internet speed were the most important problems reported by faculty members.

6.46.2 Students’ Problems

In case of students findings indicate that inaccessibility and disconnectivity to the Internet, censorship and filtering of the Internet sites by the government, inadequacy of computers, impracticality of faculty members’ teaching methods, faculty teachers’ outdated classroom presentations, old syllabus and old curriculum were the most important problems reported by students while using IT.

6.47 SUGGESTIONS AND COMMENTS

6.47.1 Faculty Members’ Suggestions and Comments

The important suggestions and comments from faculty members were as the followings: they suggested that access to online and off line databanks should be provided. They proposed the provisions of more computers with the Internet facilities, increasing the Internet access speed, as well as providing more chances of training in IT use. They also advised that necessary telecommunication
infrastructures backbone should be created by the government. They proposed that adequate budget should be allocated to IT development. Faculty teachers alluded that classrooms in LISc departments should be equipped with advanced audio visual aids such as data projectors, digital overhead projectors, e-boards, digital cameras, etc. They recommended that wireless connectivity to the Internet should be provided within the university campus and departments. They commented that continuous teaching workshops in IT are a need for LISc academics. Multimedia classrooms for instruction and support will be needed in the near future. The requirements of the Internet and WWW need to be met by a well-designed client/server environment. A budget item must be included for IT so that the expenditure for acquisition is part of the institutional planning process. The IT planning cycle should be shortened so that the institution is in a position to respond to the rapid pace of technology change. Curriculum and course content should be revised.

6.47.2 Students’ Suggestions and Comments

Suggestions and comments from students were also given, and some of them were: Increasing the number of computers connected to the Internet, the number of access points, as well as provision of training in the Internet use. More computers with the Internet facilities should be provided in order to increase students’ level of access. The computers provided should be up-to-date models recognizing that they will perform better and faster access. Increasing connectivity and speed will drive usage to higher levels. The speed of the Internet should be increased and more bandwidth should be sought so as to provide faster access that will save much of the users’ time and be a source of motivation to use the Internet. Maintenance of computers should also be done more regularly. Students should be provided with more chances of formal training in order to acquire skills on effective Internet use. Training should also be provided to academics and other members of faculty staff.

6.48 OTHER FINDINGS

- The study also points out that 51% of the under study LISc departments had 6-10 computers followed by 30% 1-5 computers, 13% 11-15 computers and 6% 16 - 20 computers (Figure- 5.48.3).
45% of students reported that they were offered IT training courses by their LISc departments, while 42% stated that they were not offered any IT training courses and 13% did not mention anything (Figure 5.48.1).

The study showed that new applicants who join the LISc departments as a faculty members, their IT qualification and knowledge were examined and evaluated by the departments committees include the Hods and the academic members and it confirmed the third assumption of the study.

SUGGESTIONS AND RECOMMENDATIONS
1. As Iran gears for 2020, the country is taking keen interest in building National Infrastructure for Information (NII). It has forced the Government to take necessary policy and programmatic initiatives to facilitate Iran’s emergence as an IT power for Governance. Secondly, the close regulation of business activities related to the IT through its liberal policies and Government of Iran has initiated other concessions. However, there is indirect assistance given in the above Government policies academic departments but no direct provision has been provided. Consequently, it is recommended that Government of Iran should have enough budgetary provision to develop IT based services, especially for academic and research faculty members and students in Iranian universities.

2. Chapter-5, reports about the interrelationship of various variables: Sex, age, qualifications, positions, and knowledge of English with use of various components of IT. The trend shows about some similarities in both the groups i.e., faculty members and students. Findings also show that IT is an inseparable part of the organization. The above findings allow to draw certain conclusions for the policies of Government of Iran, in the area of IT development (a) Government of Iran should continue its support of IT as a strategic one and also by providing incentives for its developments in form of tax exemptions, consultancy, research and trainings, etc. (b) tax relief for expo, (c) incentives and special credits for new IT based products developments.

3. To achieve the professional objectives and also to acquire the senior positions, LISc professionals must develop expertise, skill in management, and organization of IT based information services.
4. It is advised that IT facilities should be provided in each and every academic departments in Iran.

5. It is recommended that data access speed communication (data routes and band width) should be increased.

6. It is advised that DSL Technology for connecting faculty members’ homes to the Internet should be provided.

7. It is recommended that the LISc departments’ classrooms should be equipped with advance audio-visual aids facilities.

8. IT is an integral part of learning and teaching process. Today, there is a need to change the ASK and the ways faculty members teach and the ways students learn. It is suggested to have IT facilities for the students and faculty members at the desirable extent with the latest hardware and software.

9. It is recommended that faculty members and students should be encouraged to access IT and appropriate information services, in the form of awards, incentives, etc. from time to time. The unfamiliarity, no time, and inaccessibly reasons given by the respondents, are not any excuse in the changing scenario.

10. Upgrade and maintenance of various hardware and software and their full proof maintenance are also recommended. It is also suggested to provide IT facility at 24 hours, anywhere preferably working place and home.

11. It is also recommended that it should be mandatory for all the faculty members as well as students to be awared and subsequently use the various IT based services during their academic careers. It also expected that younger generation should take more initiatives to cope with their IT based services for various academic purposes. It is suggested that faculty members should use IT frequently, not only for classrooms but also for writing, research works, and workshop presentations.

12. English is an international language and most software tools are available in English. English knowledge especially for students is main barrier to use IT investigated during the study. Hence, it is recommended to have the provision of English teaching and learning at very basic stage.

13. Computer: Computer is an important component of IT. It is suggested that provision should be made to train the faculty teachers as well as students, even
from a very basic level followed by stepwise advanced training/refresher programmes. This should be further followed by the latest developments of hardware and software. Faculty members and students should learn how to operate the various basic functions of computers even at very beginning to achieve their goal in future. The computers provided should be up-to-date models recognizing that they will perform better and faster. Maintenance of computers should also be done more regularly.

14. Internet: Study shows that the Internet is the most popular facility among the users as well as faculty members. Consequently, it is suggested to have the provision of the Internet facility within each universities of Iran and departments of LISc should have the access facility with proper authorization for faculty members and students. The provision preferably should be made at working place, home, and each and every corner of the locality and Government of Iran have to play a major role. The expertise of librarians, information professionals and computer scientists needs to be tapped to provide training and refresher sessions for faculty members to keep up to date on harnessing the immense potential of the Internet as a source of information for teaching and research. There is need therefore to make arrangements so that students may have more opportunities to learn about the Internet. Students should also be motivated to use the Internet for academic purposes. For instance, they should be made more aware of the many resources on the Internet that can benefit them academically. Faculty members should also encourage their students to use the Internet sources rather than relying on printed sources alone. Increased course-integrated library instruction will be helpful. The speed of the internet should be increased. More bandwidth should be sought so as to provide faster access that will save much of the users’ time and be a source of motivation to use the internet. Maintenance of computers should also be done more regularly. Students should be provided with more chances of formal training in order to acquire skills on effective internet use. Training should also be provided to academic and other members of staff. Negative attitudes act as barriers to effective Internet use. These should be changed through awareness raising programmes that will impart an understanding of the the Internet’s role in learning.
15. **Intranet**: It is suggested to have the facility of *Intranet* in academic departments of LISc in Iranian Universities.

16. **LAN**: It is an important tool for information communication, at his/her working / central place. It offers multi tasking facilities and resources viz. namely various expensive software and databases, printers, scanners and server based storage capacities. Consequently, it is recommended that each and every department of LISc in Iran should have the provision of LAN.

17. **On-line databases**: Database creation and access are the major problems due cost, language, subjects, coverage and specialty. Hence it is essential to *develop in house database* to suit their requirements and also consortium based commercial bibliographical as well as full text databases.

18. **Off-line databases**: it has been observed during the study that there is lack of Off-line databases in LISc departments of Iran. However, it is suggested to *procure CD-ROMs of various Off-line frequently used databases* and make them available on LAN /Intranet.

19. **CDs and DVDs**: During the study, it was observed that there are various software and databases on CDs and DVDs: study materials, presentations, tutorials, e-books/journals, dictionaries encyclopedias, interactive lesson and test materials, which lack in the most of the LISc academic departments in Iran. Consequently, it is *essential to have above educational materials on CDs and DVDs and put on the LAN and/or Intranet*. The above materials free and freely available on the Internet should also be stored on CDs and DVDs as backup for future use.

20. **Multimedia (MM)**: The concept of MM getting momentum, however it lacks in LISc departments of Iran. Hence, it is recommended to *procure MM based academic resources* for faculty members as well as students.

21. **Fax**: The use of various communication technologies at desirable level is lacking in the most of the LISc academic departments in Iran and fax machines are the least used. Hence, it is recommended to provide fax machines for every department separately.

22. **Mobile**: It has been observed that use of mobiles by faculty members and students are restricted to the personnel use. Efforts should also be made to use the mobile even for the academic purposes.
23. **Experts Systems (ES):** Majority of respondents have expressed that either they are unaware of ES and/or the least known or use is only restricted to few negligible faculty members. It is recommended to include *ES system in the syllabus* of LISc programme at *Master and PhD levels*.

24. **Internet Services (IS):** The important facilities available on the Internet viz. web, mail, FTP, videoconferences, discussion groups, newsgroups, guide services, news services and chats, however only web, e-mail and free database access are widely used but rest of the above facilities either unknown to the respondents and/or rarely used. It is recommended to make suitable efforts to use them frequently by students and faculty members.

25. **Audio visual Aides:** Use of various audio-visual aids: Overhead and opaque projectors, e-boards, digital cameras are low in academic LISc departments in Iran. It is recommended to have the central provision of audio-visual facilities in the LISc academic departments in Iran.

26. It is suggested to *procure and use standard well tested various LISc databases including bibliographical and full text on line/offline databases*. It is also proposed that frequently used databases to be procured on CDs and DVDs and to be loaded on LAN/Intranet.

27. The study also reveals that IT facility (hardware/software) are not up to the mark in the Iranian LISc academic universities. It is recommended that the suitable number as well as the latest model/version should be procured for the all-academic LISc departments in Iran. Based on the findings following Internet/Intranet model is recommended herewith *(Figure- 6.1)*.

28. It is also recommended to procure only standard software for various application of LISc. After sale service, upgradation, trainings and maintenance should be negotiated, while procuring stage only with venders.
Figure-6.1: Proposed Consortium based IT Facilities in Academic LISc Departments in Iran
29. It is also suggested to train faculty members and students about the basics of globally available and widely used software i.e. words, power points, excels, SPSS, etc. Faculty members should be encouraged to publish in the journal/books available/accessible on the Internet.

**IMPLICATIONS: FURTHER STUDIES**

1. The study demonstrated that study is restricted to IT utilization in LISc departments and does not cover other academic departments. Hence, it is suggested to investigate IT utilization in other academic departments in Iranian universities.

2. It is also suggested to have a depth research on “The impact of IT on teaching and learning in Iranian LISc departments”.

3. It is recommended to include IT in LISc curriculums in the universities of Iran and detailed depth study to be carried out, before implementation.

4. It is also recommended future depth studies on various aspects of IT viz., computer, communication, database creation/access, network based services, multimedia (hypermedia), etc. should be carried out separately and researcher should be encouragement by Government of Iran as its national policy.

5. Furthermore, depth study need to carry out to develop standard related to IT and its applications in LISc academic departments in Universities of Iran.

**CONCLUSIONS**

The findings and observations in the present study underscore the need to offer more learning opportunities for faculty members and students to demonstrate, how IT and instructional technology can be applied in their works in academic LISc departments in Iran. Academic LISc departments need to ensure teaching staffs, support and effective classroom capacity for the use of new technologies specially IT. It will not only affect the relationship among the LISc professionals but also budget and curriculum development. Consequently, higher education system must also be modified to suit the next generation of faculty members in regard to professional demands and expectations of students. LISc professionals
must be more than custodian of knowledge/information and have to play an important role as information/knowledge manager/consultant. There are intellectual practical problems of social significance and complexity. New IT constitutes new means new challenges, better opportunities not new ends. Consequently, we can and should re-think and redesign everything, as technology changes, what is feasible.

It is clear from the study that use of various IT by faculty members and students in academic LISc departments in universities of Iran is slow and getting momentum slowly. The findings and interpretation of data show that almost all the objectives proposed before study at planning stage have been achieved. Assumptions proposed (Chapter-1) also have been confirmed based on the data available. The study shows a significant relationship among the various variables, in all cases, where expected counts were less than .05, with various components of the IT in both groups of respondents i.e. faculty members and students. It is also expected that the use of various IT facilities will not only provide LISc professionals new challenges but will also provide better opportunities. Hence, we should consider all the components, while planning and organizing new IT based services and/or redesigning and upgrading the existing facilities. The futuristic view of IT, faculty members must be considered.