Role of Administration in the Implementation of E-Teaching in Pakistani Educational System

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Abstract

This research paper discusses the design and implementation of E-teaching program from a management's perspective and identifies the factors which are necessary for the successful integration of E-teaching for effective language teaching in Pakistani context. Research has shown that learning strategies employed in Computer assisted language learning (CALL) can affect the quality of learning. However, though there has been some work on how to introduce and manage such programs in organizations, there is little work on this aspect in the context of Pakistan. The study reviews the theoretical foundations, existing practices, challenges faced, extent of local institutional readiness and possible mechanisms for integrating E-learning in classroom teaching. This work will help set the ground for assessing and starting such programs in Pakistani schools.

1. Introduction

Many countries have introduced Information and Communication Technologies (ICTs) in schools for the improvement of quality of teaching and enhancement of student learning experience. This is being done by profoundly revising their current teaching practices and resources to create more effective learning environments. In case of Pakistan, current policy statements and ongoing ICT initiatives indicate that the government is committed to the use of ICTs in education for effective learning and training purposes. It is the goal of IT policy of 2012 that the government of Pakistan would promote the use of IT in education sector (IT policy, 2012, p.10). Teacher training in the education sector has been recognized as one of the important factors for promotion and implementation of IT in the country as the policy states "Government shall take up intensive IT training of teachers with the aim that all teachers in all schools to have an IT acquaintanceship by 2014" (IT policy, 2011, p.36).

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The National Education Policy (NEP) and National Education and the Information Communications Technology Strategy for Education in Pakistan (NICT) indicate that incorporating E-education into our national educational system is a foremost priority. For instance, the NICT emphasizes on; i) use ICT to extend the reach of educational opportunity; ii) apply ICT to strengthen the quality of teaching and educational management; iii) employ ICT to enhance student learning; iv) develop complementary approaches to using ICT in education; v) build on the current experiences of existing and successful ICT programs; and vi) develop capacity at the federal and provincial department of education levels (NICT, pp. 1-2).

The NEP highlights that ICTs shall be utilized creatively to assist teachers and students with a wide range of abilities and from varied socio-economic backgrounds. ICTs shall be used to strengthen the quality of teaching and educational management (NEP 2009, p. 43). Regarding teacher training, the policy states "In-service training shall cover a wide range of areas: pedagogy and pedagogical content knowledge; subject content knowledge; testing and assessment practices; multi-grade teaching; monitoring and evaluation; and programs to cater to emerging needs like trainings in languages and ICT" (NEP 2009, p. 43). The policy also states, "Faculty training in pedagogical, communication and ICT skills is required at all levels to enhance the efficiency of teaching in higher education" (NEP 2009, p. 56).

Government of Punjab has also established computer labs across 4,286 public schools, installing about 60,000 computers and internet connectivity, and providing them IT teachers. However, the program has been limited to IT teaching. In private schools, there is some emphasis to use online resources, but it is generally limited to home-based tasks and assignments where students are asked to search relevant material from the internet. In general, there is very limited or no use of computer aided teaching inside the classroom. Similarly, numerous E-learning initiatives like, The National Education Testing Service (NETS), National Education Management Information System (NEMIS) have been introduced in this regard (EPP, 2008).

In case of practices around the world it is evident that there aren't any particular criteria for determining the optimal level of ICT integration in the educational system. Secondly much research in this area has been

done in technologically advanced countries, but little in the developing countries particularly at school level (Iqbal & Ahmed, 2010). This study is an effort to bridge this gap by investigating ICT integration strategies suitable at school level in the context of Pakistan. Technology integration requires change at the level of teachers as well as at the level of administrators. They need to revise their curriculum, pedagogy, and educational tools. However, the success of execution of new technologies into any teaching/learning environment relies a great deal on the level of commitment and involvement of the concerned parties. The process of change also demands change in the management skills. The growth of E-learning systems has presented a unique challenge for both schools and industry (Wang, 2003). E-learning has become an option for organizations that are looking forward for improving the skills and capacity of their employees (Ali & Magalhaes, 2008).

Although organizations are recognizing the potential of E-learning, there are certain factors which can guarantee the success or failure of E-learning. Different researches have pointed out many factors or challenges in implementation of E-learning e.g. technological infrastructure, course content quality, finance support, learners' computing skills, staff training, administrative support and organization's culture which includes having an appropriate management system and an institutional culture which supports an E-learning environment (Miller et al., 2000). Such a system would include the provision of technology infrastructure, technical support and formalization of incentives and expectations (Birch & Sankey 2008). Rewards and appraisal strategies play an important role in establishing a supportive institutional culture, and can be effectively implemented to support innovation development (Miller et al. 2000; Davis & Eales 2007).

1.1 Statement of the problem

Administrative support, capacity building, provision of infrastructure and time constraints are the key factors which play a vital role in successful implementation of E-learning. These factors fall under the category of administrative concerns. Due to this reason, the present study aims at exploring the administration's perspective about the challenges in Implementation of E-learning and the possible steps to cater these challenges.

1.2 Objectives

- To find out the commitment and management skills of administration for launching E-education program

- To find out the Challenges/ factors in designing and implementation of E-education in language learning
- To know the interest of administration for involving the stakeholders in the implementation process to cope with the challenges

1.3 Research Questions

1. What is the preparedness of administration to implement E-education program in the context of their self-evaluation of ICT skills and management skills?
2. How far the language teachers are ready to integrate ICTs in the context of their current use of computer technology?
3. What are the factors that can influence the design and implementation of E-education program?

2. Literature Review

2.1 E-teaching

According to Nakajima (2006), E-teaching is considered a system which is designed to improve the performance, self-regulation and motivation of a teacher. Its design is aimed at supporting teachers to teach effectively in an E-teaching environment. The integration of ICTs and tools in the teaching pedagogy helps teachers to increase their efficiency and organization of work. In a study during European School-net Project, an overwhelming majority of teachers were of the view that E-teaching increases the efficiency of teachers and develops the culture of collaboration (Balanskat et al., 2006).

2.2 E-teaching in Language Learning

Computer assisted language learning (CALL) plays a crucial role in effective language learning. Beatty (2003) defines CALL as "any process in which a learner uses a computer and, as a result, improves his or her language". CALL has been widely used in the field of foreign language learning/ teaching. The research indicates that CALL can contribute a lot in the field of foreign language teaching in case it is adaptive, focused and learner-centered. Otherwise, it would start serving technology instead of harnessing it (Bangs & Cantos, 2004). The emergence of CALL falls back in 1960s. CALL has developed gradually and its development can be categorized into three phases i.e. behavioristic CALL, communicative CALL and integrative CALL (Warschauer & Healey, 1998).

2.3 Factors that influence the implementation of CALL

A number of studies (Lam, 2000; Shin & Son, 2007; Yildirim, 2000) highlight that capacity building, provision of the infrastructure (computer and internet facilities) and the attitudes of language teachers towards computers are main factors for the successful implementation of CALL in the classroom. Bangs (2004) says that an appropriate design for technology program is required to ensure the success of CALL and along with it; teacher training is essential. Similarly, Salehi (2012) conducted a research to find out the factors that hinder ICT integration in language teaching and the results highlight that lack of technical support and unavailability of regular internet connectivity at schools are the main causes that prevent teachers to use ICT in the classroom.

Personal attributes such as qualification, age, gender, experience, ICT competence and attitude towards technology can influence the adoption of technology. Rahimi (2011) investigated the effect of EFL teachers' characteristics in ICT use in English classes. The results indicated that technology was used by them for the purpose of teaching oral skills mostly. As far as the correlation of teachers' attributes and ICT use is concerned, there was an inverse correlation between ICT use and teachers' age, experience, and computer anxiety. However, ICT usage was not related to attitude and gender.

2.4 E-Teaching in Pakistani Context

According to (Siddique & Khalid, 2017), E-Teaching system in Pakistan lacks proper infrastructure. The main factors which serve as core barrier in the implementation of an E-teaching set up include lack of awareness, traditional teaching pedagogies and weaknesses related to the curriculum. Similarly, it needs funding in order to provide state of art labs, computers, and other electronic gadgets which are not easily accessible to the majority of the Pakistani population (Iqbal & Ahmed, 2010).

Qureshi et al. (2012) mention that the cost of software application at the institutional level is a big concern for the administrations as it is not pocket friendly for them. Similarly, the provision of skilled staff is another important issue as the majority of the teaching staff isn't much familiar with the latest technological tools. Zafar (2014), says that the successful integration of ICT into the classroom cannot be possible until the teachers are not familiar with its effective use. Therefore, proper teaching trainings and refreshers courses are important in this regard.

2.5 Role of management in designing and implementation of an E-learning Program

Rosenberg (2001), says that management plays a vital role in implementation of E-learning or computer assisted learning. The implementation of new learning technique will not occur and develop successfully without the extensive work of managers and team leaders. The study emphasizes on a E-supportive institutional culture (Miller et al. 2000; Davis & Eales 2007; Bates, Manuel & Oppenheim 2007). Such a system would include the provision of technology infrastructure, technical support and formalization of incentives and expectations (Zellweger, 2007; Birch & Sankey, 2008). Following factors play an important role in order to influence the role of management in effective implementing of E-learning:

2.5.1 Institutional readiness

According to Rosenberg (2001), institutional readiness is a significant factor for the success and efficacy of E-learning program. For the realistic adoption of E-learning tools and techniques, management must invest in infrastructure as well as in software for ensuring the sustainability of E-learning program (Davis, 2008). The implementation of E-learning in some organizations has lead to failure due to lack of managerial readiness i.e. they utilized the latest E-learning tools without their management grasping the strategic and operational implications of those tools (Ali & Magalhaes, 2008).

2.5.2 Setting up an appropriate culture

Organizational culture also affects the success or failure of an innovative E-learning program. As Bates et al. (2007) quote Denning (2004): "In a culture of innovation, people will have a habit of constantly looking for ways to improve things". Organizational culture can be seen as the "values and beliefs shared by personnel in an organization" (Martins & Terblanche, 2003). These beliefs then are translated into common practices and mutual understanding of individuals. Martins & Terblanche (2003) state that: "Organizations use different resources and processes to guide behavior and change". This emphasizes that there is a direct relationship between the pervading culture of an organization and the degree of acceptance of an innovative technology program.

2.5.3 Provision of administrative support (training for technology integration)

Administrative support (which mainly includes the essential infrastructure and resources) is required for the successful adoption and integration of ICT. Birch & Sankey (2008) say that effective integration requires training in both the usage as well as integration of technology into the curriculum. Moreover, faculty needs to have a vivid idea of what technical assistance can provide with, as well as they need to have access to the support structures during each step of the adoption process (Zellweger, 2007). Studies have shown that where an organization fails to provide specialized technical support, the adoption and integration of ICT by the academic faculty is severely hampered (Chizmar & Williams, 2001; Lee, 2001).

As far as teacher training is concerned, UNESCO is working on a grand project for teacher training programs on technology and professional development; different countries from Asia and the Pacific are part of it. The project provides a guideline for administrators / managers to arrange teacher training programs for education. Emerging countries have focused on basic training and computer literacy whereas training programs that go beyond the basics and deal with integration of technology into pedagogy. Many training programs sponsored by Intel, IBM, Coca- Cola and World Links are investing on online telecollaboration and networking as well as classroom management ('Teacher Training on ICT Use in Education in Asia and the Pacific' UNESCO Bangkok 2003).

In this regard, UNESCO ICT competency standard framework for teachers has been adopted to build capacity in two schools of India. Verma presents in his paper an intensive study undertaken in two SSA (Sarva Shiksha Abhiyan, a government of India initiative and Intel Initiatives) supported schools in Tamil Nadu. The goal of the paper was to investigate whether innovative ICT integrated Education results in enhanced learning for students. The results of the study suggested that there were positive growth trends in knowledge deepening and creation in both the cases. For the purpose of capacity building, training was provided to all the teachers in schools run by the government of Tamil Nadu and covered under the SSA and Intel Teach program. Teachers were given training on the Intel Teach Curriculum to enable them to incorporate technology into the curriculum which in turn would pave the way for knowledge deepening and knowledge creation. The paper concludes by saying that the success of ICT based

innovations is directly related to the successful integration of ICT tools into the already existing educational system and teachers play a pivotal role in creating ICT based learning environments.

2.5.4 Provision of time

Faculty should be provided enough time to manage the increased workload in case of new technology integration. Lack of time is a major barrier in the adoption and integration of ICT as innovative technology integration has a direct impact on faculty workloads (Bates, Manuel & Oppenheim 2007; Zellweger, 2007). Zellweger (2007) proposes an adoption cycle (see Figure 1) to help technology adoption for teaching. The faculty behavior makes the center of the model (depicted in form of a circuit and is in bold), which is influenced by external factors (which are italicized). The time faculty spends in technology integration makes the foundation of this model. As time is a limited resource and faculty attention is drawn by many other activities, time commitment demonstrates the priority assigned to an activity, as he quotes a Tufts faculty member: "At the end of the day, since in my mind the most important factor is time, investment has to reflect the fact that people's time is being recognized".

2.5.5 Provision of incentives

The priority faculty assigns to teaching will increase when the incentive to improve teaching increases. Incentives are needed if faculty is expected to place value on teaching and experimenting with technology. Miller et al. (2000) quotes (Austin & Baldwin, 1991) that "in order to create incentives, restructuring of reward systems is essential since faculty will likely place increased importance upon the things that are rewarded". Generally speaking, the reward structure of most institutions not only fails to recognize innovative teaching, but it also fails to recognize effective teaching in any form. This foremost barrier is, simply, the lack of sufficient institutional recognition and reward of those who improve teaching and learning by infusing technology. Such changes will require visionary leadership and real partnerships between administration and faculty.

2.6 Research Gap

This research is identifying the factors which are hurdle in the effectiveness of implementing E-teaching in Pakistani education system particularly at school levels. It is very important to upgrade schools in terms of the technological infrastructure. Therefore, it aims to build up an efficient and strong IT system from the management's side which could be helpful

in teachers' trainings, and could provide sufficient time to learn new technological pedagogies so that they could utilize their potential.

3. Methodology

E-learning initiatives require considerable commitment and support from management for their implication and sustainability. For this purpose, E-readiness of top management and a long-term dedication to sustain, foster, and monitor strategic change is required. In order to know the preparedness and readiness, data was collected from the management and teachers of a well-recognized private school. The school was chosen on the criteria that it was most ready to integrate technology in the curriculum and showed readiness for the implementation of E-learning in all subjects and language subjects particularly. Moreover, the management and the teachers of the school were already using computers for managerial tasks and in the classrooms respectively. Hence, they were in a better condition to give their opinion on what should be the design and process of E-learning program.

3.1 Sample

The target population was the management of a well-recognized Senior Cambridge private school network of Lahore. A sample of 30 participants was selected by using simple random sampling. The sample consisted of thirty members of the management consisting of headmasters of higher secondary, secondary and primary level. It was evident from the data that Out of 30 respondents, there were 24 males and six females i.e. male gender outnumbered female gender. Majority of them were among the age of 41 to 50, three and four respondents were among the age of 31 to 40 and 51 to 60 respectively and only one was above 61. As far as their experience is concerned, it was noticed that majority of the respondents i.e. 14 have more than 20 years experience. Almost 10 of them hold 13 to 20 years experience. Only 4 and 2 respondent possess experience which ranges between 8 to 13 years and 3 to 8 years respectively. The participants were familiar with the use of ICT since most of them used the Internet for the purposes of gathering information, sending email and working on social networking. It implies that this computer knowledge can help management in realizing the needs and challenges faced by teachers to develop professional skills required for the implementation of E-learning in language classrooms.

Table 3.1: Demographic details of the respondents

Measures	Frequency	Percentage
Gender		
Male	24	80
Female	6	20
Age		
20-30	0	0
31-40	6	20
41-50	14	47
51-60	8	27
61 and above	2	6
Experience		
0-3 years	2	0
3-8 years	4	6
9- 19 years	10	13
20 years and above	14	34

3.2 Data collection tools

In order to collect data from the participants, three tools were used; a questionnaire, interviews/ meetings with the administrative staff, and qualitative analysis of assessment and planning. The questionnaire used a five-point Likert scale extending from 5 (very high or strongly agree) to 1 (very low or strongly disagree). The questionnaire consisted of demographics (age, gender, professional and educational background), close-ended responses, and open-ended responses (See Appendix). It consisted of a number of sub-themes that investigated managements' perceptions of their technology competencies and usage, factors/ challenges that influence the design and implementation of E-learning program, their possible solutions by involvement of the stakeholders and incentives that motivate teachers to integrate technology. Similarly, in order to determine the content and face validity of the instrument, the questionnaire was examined first by a PhD professor and then by three experts. The questionnaire consisted of five main parts and was designed according to the research objectives. Moreover, the data was also collected in the form of interviews and by qualitative analysis of assessment and planning.

4. Analysis of Data

The data from was entered into a MS Excel spreadsheet and was collated. The close ended questions were analyzed using quantitative methods while open-ended responses were analyzed qualitatively.

4.1 Preparedness of management in the use of ICTs

Figure 4.1 clearly illustrates that in response to their personal usage of computer programs, 12 replied that they use MS Word and 9 said that they use MS PowerPoint. However, 6 of the respondents said that they use MS excel on daily basis. There were few respondents who were using these programs on weekly basis. Only 3 said that they sometimes use MS access as well.
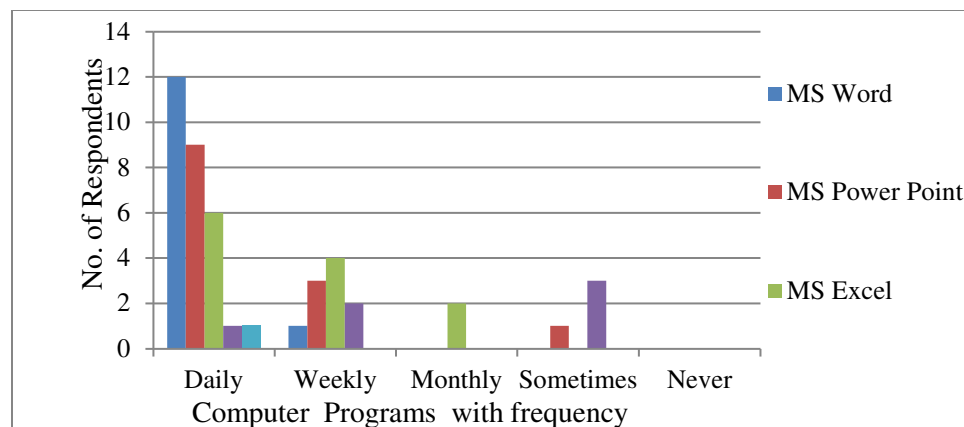
Figure 4.1: Usage of different programs on computer by management

Similarly, the data in the figure 4.2 manifests that daily 7 members of the overall sample prefer internet/ web browsing, 9 check their e-mails, and 3 visit social websites like Facebook and Twitter. However, 5, 4, and 7 answered that they use internet weekly for internet/ web browsing, for checking their e-mails, Facebook and for communication purposes respectively.
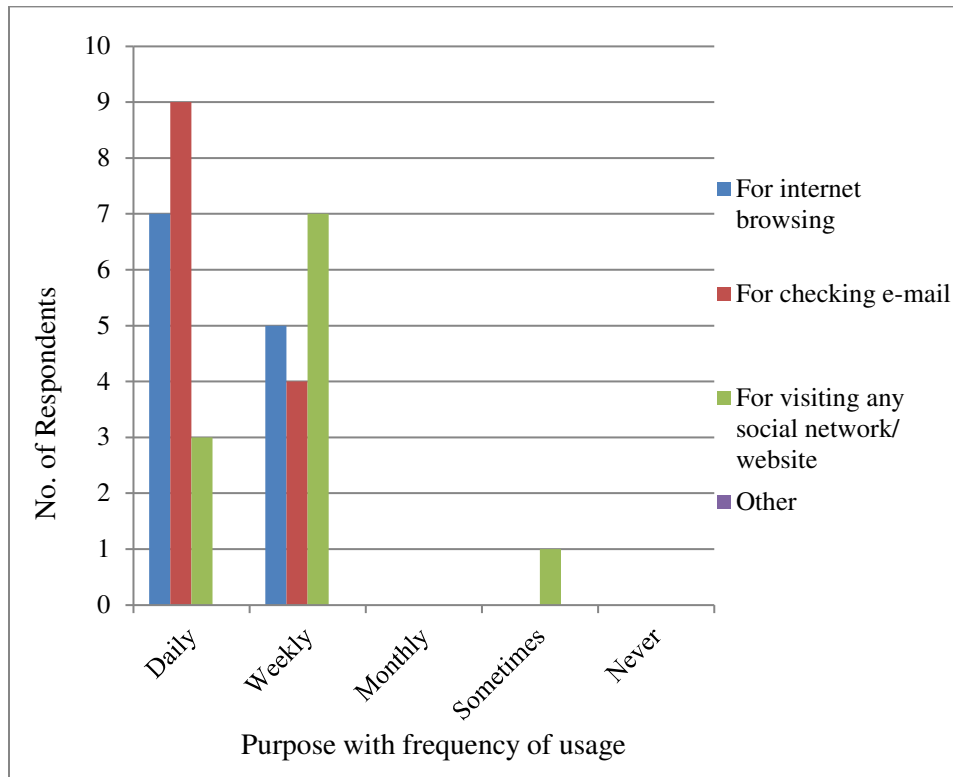
Figure 4.2: Management's preference of activities using the internet

Figure 4.3 manifests that most of the respondents were strongly agreed that E-learning would have a positive impact on teaching and learning process. Some of them agreed that E-learning would also improve course material, overall student performance and education management.
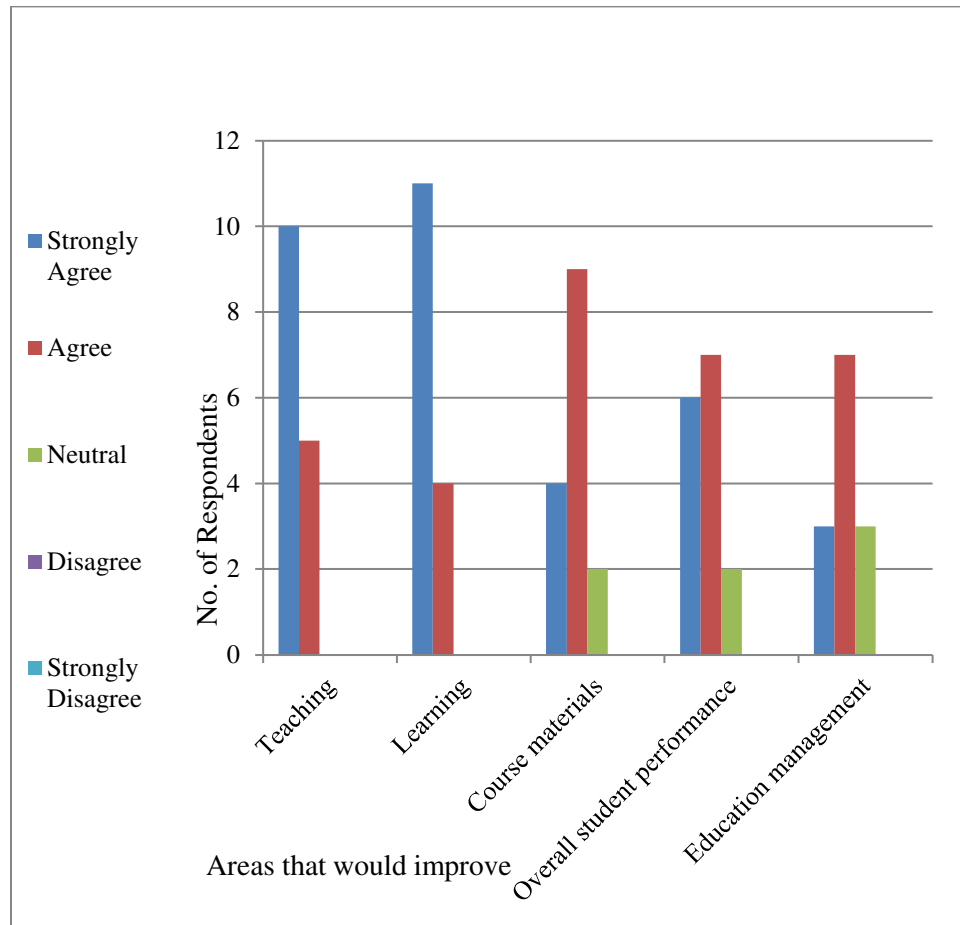
Figure 4.3: Perceived impact of E-learning

Factors related to design and implementation of E-education program

Almost all of the respondents favored the implementation of E-learning. They were of the view that E-learning program initially should be at higher secondary section, then later at secondary section and primary section.
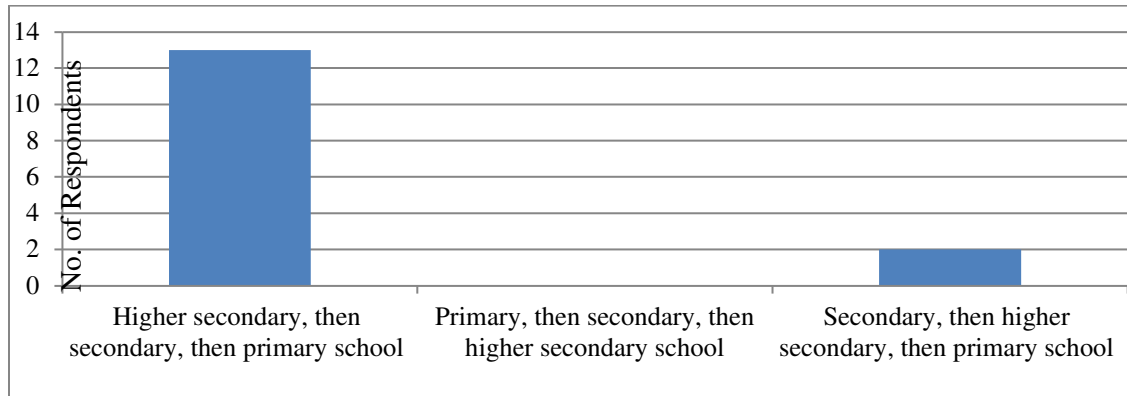
Figure 4.4: Sequence for the implementation of E-learning program

Likewise, figure 4.4 clearly indicates that almost all of the respondents were in favour of the fact that both teachers and students should have formal acess to ICTs in classrooms as well as in labs for teaching and learning process.They were of the view that ICTs shold be used for all subjects including science as well as language subjects.But almost all of them were against the usage of ICTs for interaction outside the classrooms.
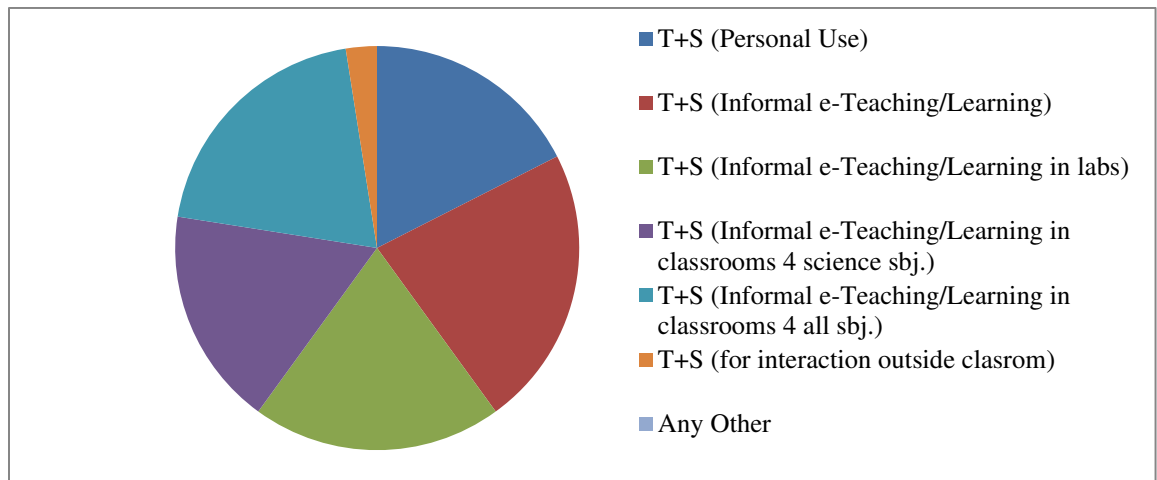

Figure 4.5: View of the management about requirement of E-learning

The data in figure 4.5 manifests that almost all of the respondents agree that content should be designed by teachers. As far as development of the content is concerned, 6 were of the view that content should be developed by external party and 5 of them hold the opinion that it should be developed by teachers of school. Only four respondents said that content should be developed by technical staff hired by school for this purpose.
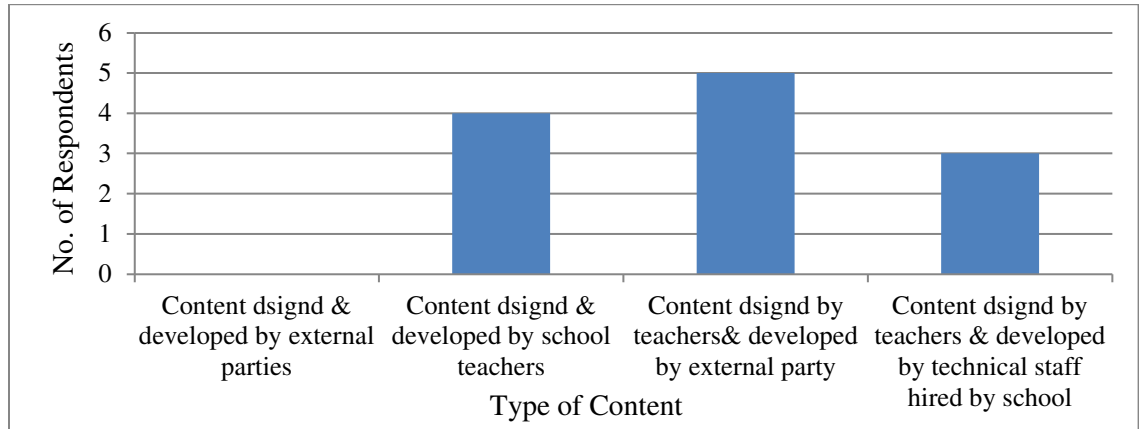
Figure 4.6: Design and development of content for the purpose of teaching

In the figure 4.7 below, most of the respondents agreed that budget should be allocated on content development, teacher training, software, hardware and infrastructure. Rest of them supported that it is significant to allocate budget on impact evaluation and continued teacher training support. No one was in favor of collaboration with other schools.
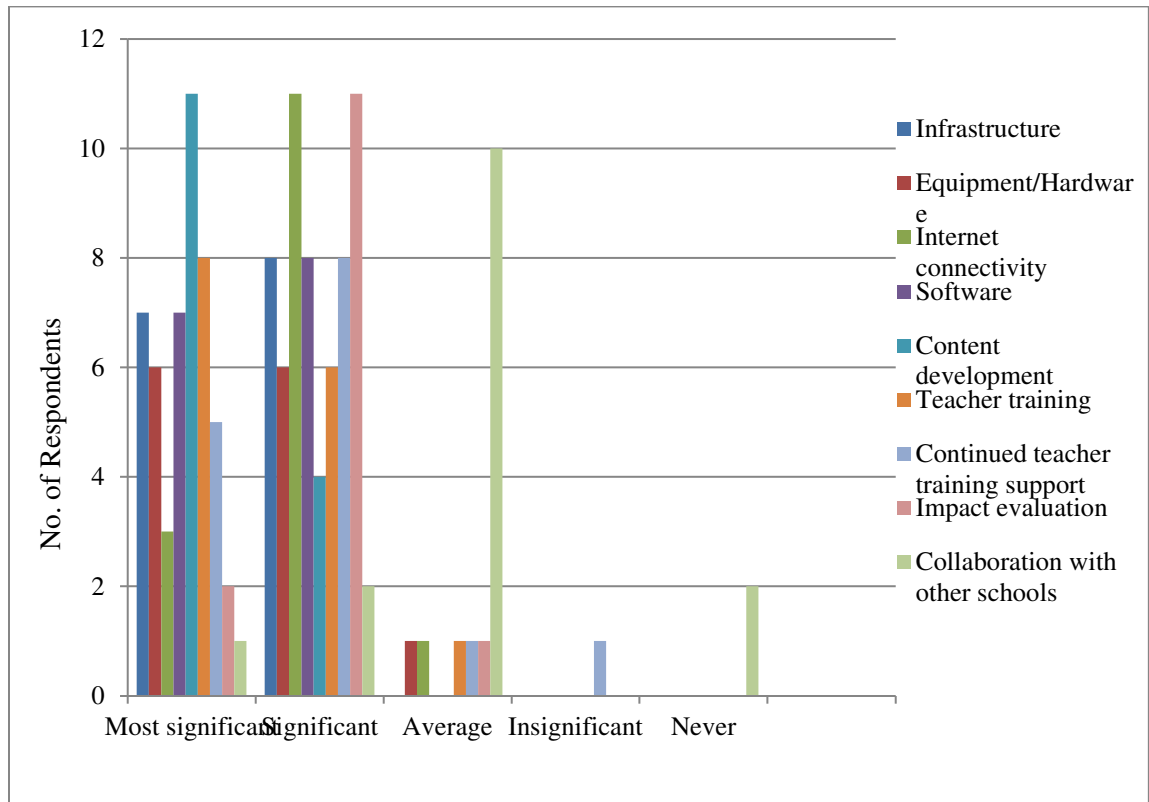
Figure 4.7: Allocation of budget

As far as departmental trainings are concerned, approximately 40 to 60 % said that they have annual training in general management, ICT skills, ICT based education program and curriculum development/ review. Whereas some i.e. 10 and 20% said that they once had training in the above mentioned activities. Only a few i.e. 10 to 20 % said that they have term-wise training in these activities while some of the percentage i.e. 20 to 30% said that they never have training in these activities. Interestingly majority i.e. 40 to 60% said that they never have training in general management and monitoring and evaluation (M&E) of E-teaching and E-education program respectively.
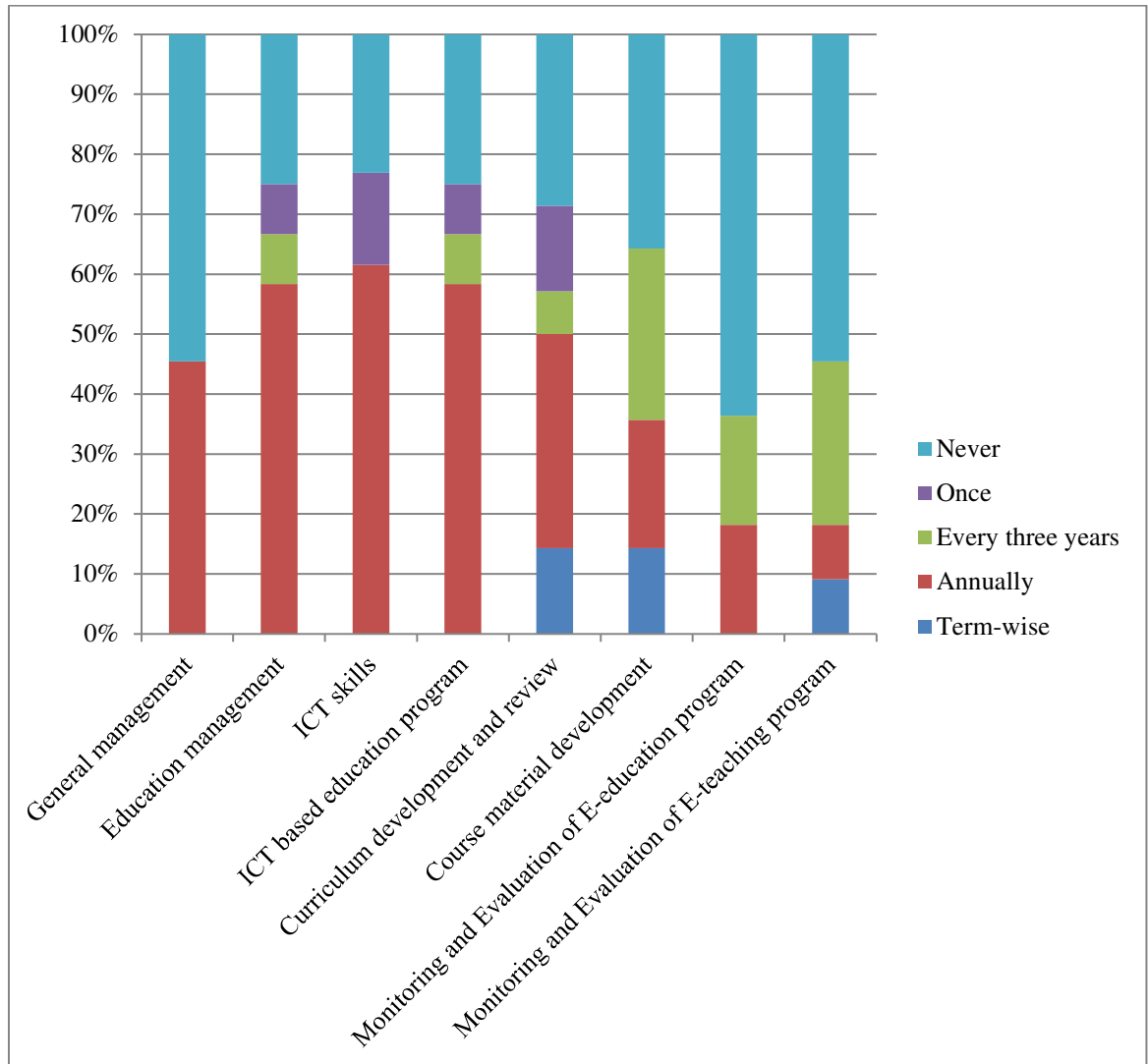
Figure 4.8: Overall respondents' current level of training

The training level of language teachers depicts that they don't have annual training in general management. 33% said that they have had training on annual basis while 66% said that they never had training in the above-mentioned activities. 30 to 50% of the language teachers said that they never have training in course material development and M&E of E-teaching and E-education program while same percentage of language teachers replied that they have annual training in the aforesaid activities.
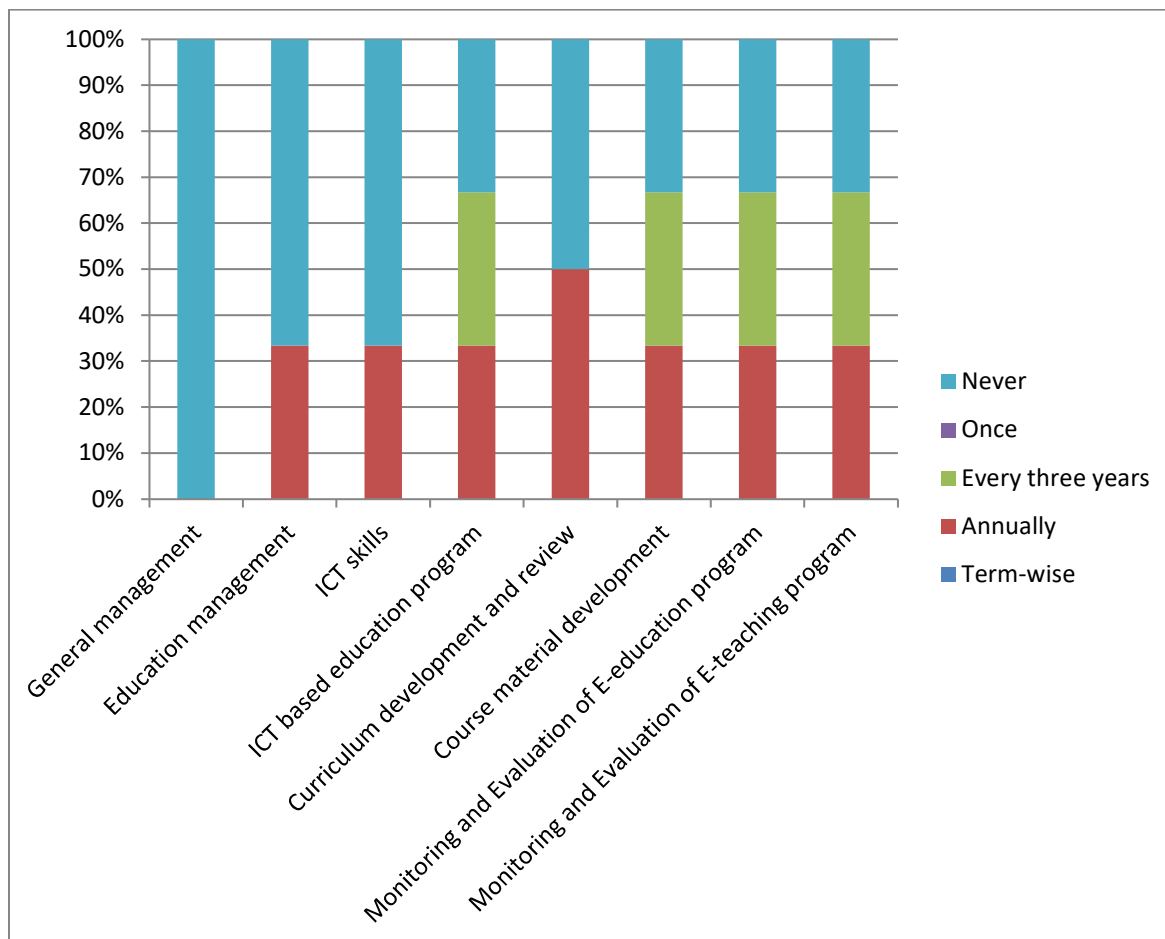
Figure 4.9: Language teachers' current level of training

The data in the following figure (4.10) illustrates that majority i.e. 8, 6, 9, 8, 7 and 6 said that there should be annual trainings on basic ICT skills, curriculum development, lesson development, E-content development, E-content integration and assessment of students in E-teaching contexts. Some of them (that is 2 to 4) were of the view that these trainings should be on term-wise basis. However, rests of them were willing to have these trainings every three years.
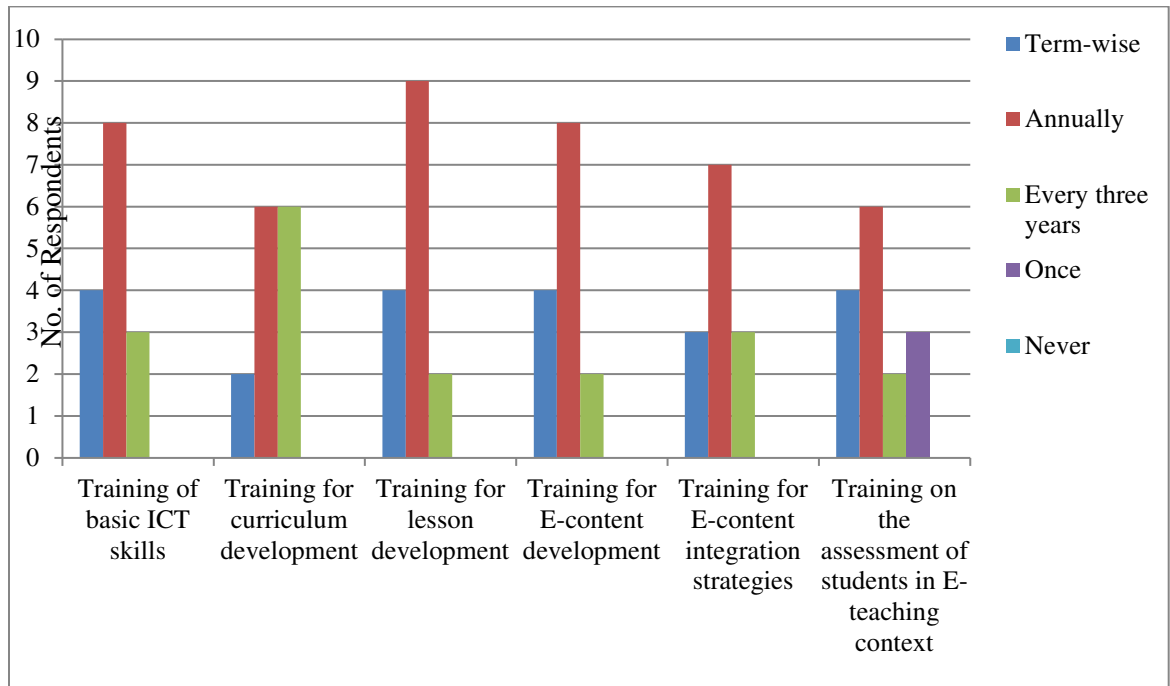
Figure 4.10: Trainings for the implementation of E-education programs with frequency.

Responding to the question about incentives that should be given to teachers for promoting ICT usage, majority i.e. 8, 12, 7 and 9 strongly agreed that there should be excellence certificates, provision of laptops and provision of internet connectivity, best E-teacher award and annual appraisal respectively. Some of them i.e.2 to 3 were agreed upon providing these incentives to teachers. Only a few i.e. 1 to 2 were neutral about providing these incentives.
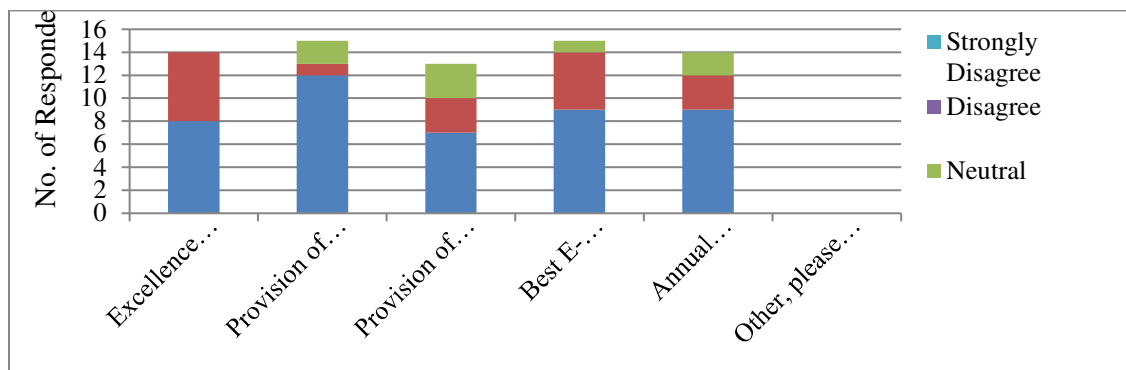
Figure 4.11: Incentives to promote usage of ICT

It is evident from figure 4.12 that 30 to 50% were of the view that language teachers, heads of departments, headmasters, E-education program management, principal and teacher trainers should be involved in E-education program via personal meetings. 10 to 20% said that these stakeholders should be involved via E-mails. However, 10 to 20% were in favor of annual reports. The same no. of percentage replied that there should be newsletters for involving parents and board of governors in the program. Some of them (20 to 40%) were in favor of having small discussion groups with students, teachers, heads of departments, E-education program management and teacher trainers. In contrast, 10 to 20% were supportive of the view that heads of departments and students should be involved in the program through websites.

Table 4.1: Involvement of stakeholders through different mediums

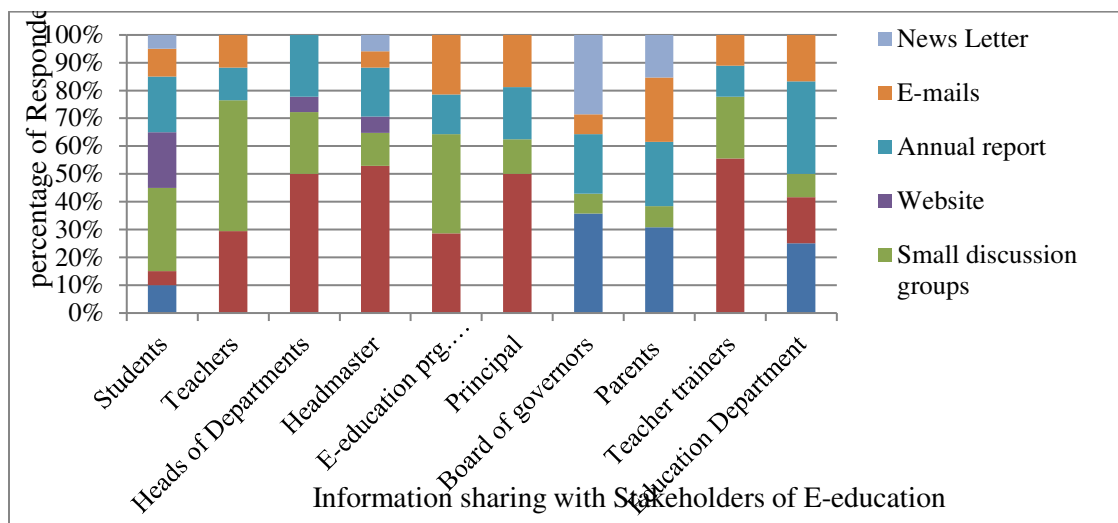|										
Not relevant	2	0	0	0	0	0	5	4	0	3
Personal Meetings	1	5	9	9	4	8	0	0	10	2
Small discussion groups	6	8	4	2	5	2	1	1	4	1
Website	4	0	1	1	0	0	0	0	0	0
Annual report	4	2	4	3	2	3	3	3	2	4
E-mails	2	2	0	1	3	3	1	3	2	2
News Letter	1	0	0	1	0	0	4	2	0	0

Figure 4.12: Involving the stakeholders of E-education program

As far as frequency of meetings with stakeholders is concerned, majority i.e. 60 to 80 % were of the view that there should be term-wise meetings with all the stakeholders to involve them in E-learning program. Some of them i.e. 20 to 40% were supportive of the view that these meetings should be arranged on annual basis. While 20 to 40 % replied that parents and board of governors should never be involved in E-learning program.

Table 4.2: Frequency of meetings with stakeholders

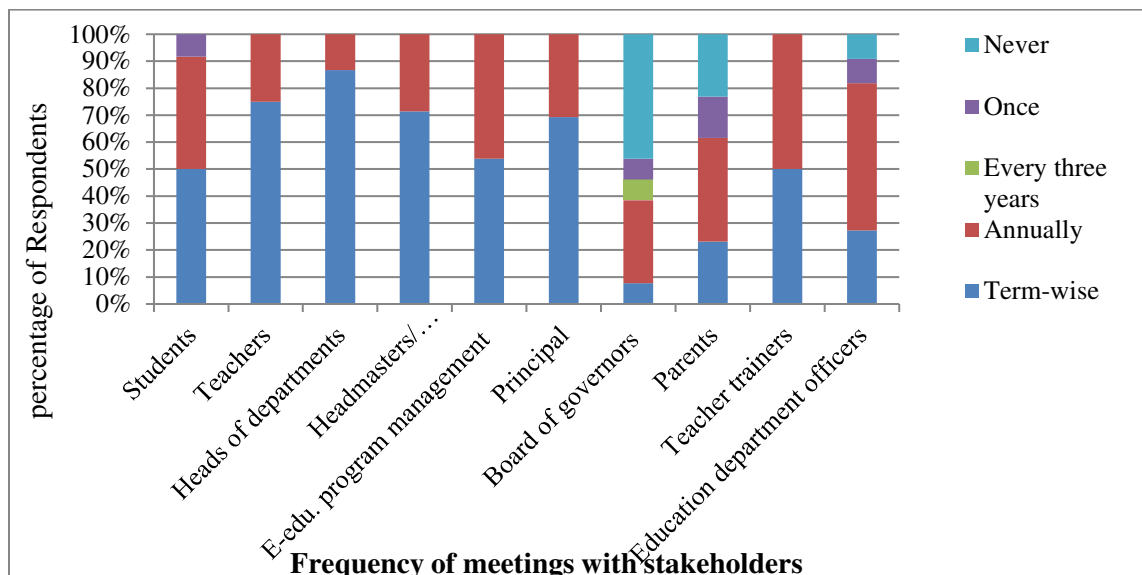| Term-wise	6	12	13	10	7	9	1	3	8	3
Annually	5	4	2	4	6	4	4	5	8	6
Every 3 years	0	0	0	0	0	0	1	0	0	0
Once	1	0	0	0	0	0	1	2	0	1
Never	0	0	0	0	0	0	6	3	0	1

Figure 4.13: Meetings with stakeholders with frequency

5. Discussion

The discussion is organized according to the research questions corresponding to the sections in the chapter of data analysis.

5.1 Preparedness of management in the use of ICTs

The research examined the extent to which management has access to computers to assess the frequency with which they use computers for various activities as is depicted in section 4.1. A considerable majority said that computer is in their access on daily basis in schools as well as in homes. They mostly employed MS Word, MS PowerPoint and MS Excel for instructional aims on daily basis (Figure 4.1). Management most frequently used computers for accessing information on the Internet and communicating electronically whereas their use of computer for visiting social website was a bit less (Figure4.2). This self-rated expertise level of the management indicates that management would be considerably realizing the needs and challenges faced by teachers in implementing computer assisted teaching in different subjects as well as language subjects.

Institutional readiness is a factor which determines the successful integration of ICTs in the curriculum. An interview with the principal highlighted that an ICT section should be established with the purpose of

planning and executing training, facilitating sharing and development of e-content, assessing and improving E-teaching integration and actively bringing together all stakeholders in the program. He further added that an online space should be allocated for the development of websites for essential resource sharing. This institutional readiness can reduces the chances of failure as Ali & Magalhaes (2008) say that the implementation of E-learning in some organizations has lead to failure due to lack of managerial readiness i.e. they utilized the latest E-learning tools without their management grasping the strategic and operational implications of those tools. The response of the management teachers clearly suggested that teachers should be empowered by technology before students which favors that school management is eager to develop E-learning based curriculum across all the classes.

Moreover, they were quite obvious about the sequence wise implementation of E-learning program depicted in Figure 4.4. The management was eager to introduce the technology integration at A-levels first because of the availability of the teaching tools around the globe. Similarly, for A-levels, they were using standardized Cambridge International Examinations (CIE) syllabus which was favorable in order to buy an E-teaching tool either commercially available off-the-shelf or open source. In this context, the school management hired a technical research staff to explore and evaluate the relevant and effective E-teaching tools. It was also the task of this committee to identify an open source learning platform for content development and sharing, assessment, communication and collaboration, various administrative tasks and overall education management.

Figure 4.3 analyzes that the school management was of the view that E-learning program would have a positive impact on teaching and learning process and E-learning would also improve course material, overall student performance and education management. It was essential to judge about the positive beliefs of teachers about technology integration as Andoh (2012) says that teachers' attitude towards technology is a factor that influence successful integration of computer and technology into teaching. However, they were not supportive about the usage of ICTs for interaction outside the classrooms. The qulaitative response infers that there should be arrangements for interaction outside the classrooms.

5.2 Factors involved in the effectiveness of implementation of E-education program

As far as teaching material is concerned, all of them agreed that content should be designed by the teachers (Figure 4.6) which shows that they were particular about customizing the teaching material and using it effectively in the classroom. They were not of the view that readymade content might have issues of adaptability and localization. They were supporting the idea that E-content should be developed by some external party. Their reservations for the development of content were linked with the current level of expertise in technology. Moreover, they were afraid of the workload in case they design or develop the content by themselves.

One of the main barriers to technology implementation is insufficiency of teachers' technical knowledge to prepare ICT based materials. This depicts that the introduction of E-learning into education requires an equal level of effort in order to provide the teachers with continued training support. As far as their current level of training is concerned, half of the management members said that they have annual training in general management, education management, ICT skills and curriculum development/review. However, as shown in figure 9, a considerable majority of the language teachers also responded that they never have trained in course material development and management and evaluation of E-teaching and E-education program. The results from figure 10 reveals that a definite training program is required for the teachers with a planned design and framework that will allow variety of skills for example, pedagogically linked ICT skills and subject-specific ICT skills. Studies have also proven that the adoption and integration of ICT by the academic faculty is severely hampered in case of failure in provision of specialized technical support. (Chizmar & Williams 2001; Lee 2001). However, the school management was considerably realizing the need for specific teacher training as their allocation of budget also incorporates such trainings as per the figure 4.7.

Furthermore, the meetings with the headmasters suggested their willingness about planning and organizing basic and advanced training programs. The results of figure 8 showed that the most essential trainings were related to the management and evaluation of E-education program. Naidu (2005) explains that evaluation in the context of E-education refers to the systematic retrieval of feedback on the usage, value and impact of the program or project. In this way, evaluation may be used to measure the past results and to modify the plans. During the qualitative analysis of

assessment and planning, the management discussed the necessity of workshops on monitoring and evaluation as well as information seminars for students and parents.

5.3 Hindrances in the execution of E-education program

The analysis of figure 11 clearly emphasizes that incentives like annual appraisal, excellence certificates, and best E-teacher award are needed in order to avoid any hindrance in the effective execution of E-education program. It was analyzed that teachers' motivation played an important role in this regard. The management also decided to provide laptops to teachers as a favored incentive. Moreover, their main focus was on the fact that there should be monetary incentives for the teachers. Similarly, they wanted to involve all the stakeholders in the process of planning and development of the program. Wagner et al. (2005) has described the possible participants involved in the process of evaluation. These include: Learners - usually students in the school environment; Teachers and facilitators - those who provide help to the learners; Technicians - ICT expertise in addition to teachers and facilitators; Parents - due to their concern over what is taught in schools; Teacher trainers - their role is to train teachers for the purpose of developing ICT skills among them; Administrators - educational administrators and management staff; and, Education ministry officials - for establishing overall policy and budget. It is evident from figure 12 that management was of the view that teachers, heads of departments, headmasters, E-education program management, principal and teacher trainers should be involved in this process. Likewise, they were of the view that principal and head of departments should be involved via personal meetings. This is probably because the teachers considered these stakeholders as are the primary stakeholders and hence considered it essential to involve them at each step of the integration process. These meetings could be term-wise or annually depending upon the role and active participation of a particular stakeholder in the program.

6. Recommendations and Conclusion

Foremost, it is important to realize that access to computer should not be limited to school environments. Secondly, training courses should be offered in terms of capacity building so that teachers acquire practical experience. These training programs should be different for management, staff and faculty. The analysis of managements' current usage of technology suggest that they don't require beginner level training i.e. they are good at using MS word, excel and PowerPoint. The training they require should be

of intermediate level i.e. of designing print materials (elements of design and layout, using fonts, graphics and colors); scanning text and graphics; learning to use Flash Player and Adobe Reader; learning to add/include animations in PowerPoint slides. Similarly, the management should execute strategies in order to lessen the workload of teachers. In this regard, new teachers can be hired to reduce the workload of those teachers who are involved in the process of implementation of E-education program. Another important suggestion is related to resource sharing and collaboration among schools as it is necessary for development and sustainability of E-learning. For that purpose, a workshop can be arranged to give teachers awareness about the licensing schemes and about the content. Lastly, a team of experts would be established which would be monitoring the E-education program at three levels i.e. program level, course level and activity level by evaluating primary evaluands of the program i.e. students and teachers from three perspectives i.e. interaction, learning and results.

6.1 Conclusion

The findings depict that organizational support is required in terms of planning, management and implementation of E-education program. Moreover, the investment of management is required not only in building hardware but also needed to provide administrative support. In this regard, different factors play a crucial role including capacity building, provision of the infrastructure (computer and internet and facilities), involvement of the stakeholders particularly teachers, and monitoring & evaluation of the overall design. The study of the factors suggests that when technology is not used, it is not simply the fault of the teacher, but also the fault of the administration that fails in systematic management of the system and is hasty in purchasing the latest technological innovations without considering the needs of both teachers and students.

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