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## The use of technology in promoting organizational learning capabilities: A quantitative study in higher secondary educational institutes of Khyber Pakhtunkhwa, Pakistan

**Shakil Ahmad**

Department of Education,  
Shaheed Benazir Bhutto University, Sheringal Dir (U), Khyber Pakhtunkhwa, Pakistan.  
E-mail: [shakilahmadupperdir@gmail.com](mailto:shakilahmadupperdir@gmail.com)

**Muhammad Niqab**

Department of Education,  
Shaheed Benazir Bhutto University, Sheringal Dir (U), Khyber Pakhtunkhwa, Pakistan.  
E-mail: [niqab@sbbu.edu.pk](mailto:niqab@sbbu.edu.pk)

**Khalid Saleem**

Department of Teacher Education, University of Okara  
Email: [Khalid.saleem@uo.edu.pk](mailto:Khalid.saleem@uo.edu.pk)

### Abstract

*ICT in Education which is also called Education Technology sometimes according to Kaware and Sain (2015) have varied uses in different dimensions of Education. While through the integration of ICT new skills and innovative ideas of employees within an organization are developed. Contemporary study conducted in Dir Upper and Lower, Khyber Pakhtunkhwa, Pakistan. Two hundred and fourteen Subject specialists of the two districts who were serving there in the higher secondary schools were respondents in this study. The main objectives of the study are to investigate the relationship between ICT and OLC. Furthermore, it is analyzed that whether ICT influences OLC. The role of gender as moderator is also tested. For getting answers of the raised questions, statistical tests like percentage distribution, Pearson correlation and Linear regression used. Due to COVID-19, data collected through Google form. After analysis interested results obtained. After discussion, valuable implications filed to the policy maker for changes and implementation.*

**Keywords:** ICT, Organizational Learning Capability, Educational institutes, organizational effectiveness.

### Introduction

Since organizations like schools are continuously changing to cope with changing conditions hence an effective mechanism is required for the achievements goals and this can be done effectively through Organizational Learning Capability (OLC) Yusoff, Omar et al. (2019). OLC is considered as a process of using, acquiring, distributing and sharing knowledge for the organizational efficiency and therefore, the capacity of an organization grows and innovates (Yusoff, Omar et al. 2019)

Mbengue and Sané (2013) stated that OLC is a set of administrative practices by which the performance of an organization is improved by the absorption and integration of new knowledge or skills.

ICT related facilities are very useful in the support of learning process both at individual level as well as organizational level. ICT has the potentialities to promote Organizational Learning Capability (Olivo, Guzmán et al. 2016). Similarly Organizational Learning provides clear, concise and consensus visions about the sustainable growth and development of an organization (Odor 2018) Therefore, successful Organization Learning Capability (OLC) is heavily depends upon the effective administration because it the administration which conveys vivid visions and supports growth and development of an organization and for this ICT is extremely helpful (Odor 2018).

For meeting the technological needs in Khyber Pakhtunkhwa, the Government has set up IT Labs in all Higher Secondary Schools under IT Labs Project. Under this project numerous ICT related facilities have been provided to the higher Secondary Schools across the province. Furthermore, for effective administration the online Biometric Attendance System (BAS) has been installed in Secondary Schools. All and above to integrate human and computer base process a new system of EMIS has also been successfully introduced. EMIS stands for Education Management Information System and works as a tool for data collection, storage, integration, analysis and dissemination designed to support planning, decision making, supervision and management ("Education management information system (EMIS)," n.d.). Since OLC ultimately supports administration to keep abreast with changing situation and attain organizational goals and this has always been supported by technology integration so therefore, there is a close relation between the two (Odor 2018). The aim of this paper is know the effect of ICT on OLC in Higher Secondary Educational Institutions of Khyber Pakhtunkhwa, Pakistan.

### **Problem Statement**

School like organization are evolving by leaps and bounds in order to meet the changing panorama of the modern world and Organizational Learning Capability (OLC) is considered highly effective in the actualization of organizational goals (Yusoff, Omar et al. 2019).

Similarly ICT related tools facilitate learning both at individual as well as group level and thus ICT has always promoted Organizational Learning Capability (OLC) (Olivo, Guzmán et al. 2016). Therefore, the need for carrying out a study between the relationship of ICT and OLC was felt.

### **Research Objectives**

- To investigate the availability of ICT related facilities in Higher Secondary Schools of District Dir Upper and Lower.
- To know the correlation of ICT and Organizational Learning Capability (OLC).
- To examine the impact of ICT and Organizational Learning Capability (OLC).
- To test role of gender as moderator in the relationship of ICT and Organizational Learning Capability (OLC).

### **Research Questions**

- 1) What type of ICT related facilities have been provided to Higher Secondary Schools of Districts Dir Upper and Lower by Government?
- 2) Is there any relation of ICT and Organizational Learning Capability (OLC)?
- 3) Has ICT any effect on Organizational Learning Capability (OLC)?

- 4) What is role gender as moderator in the relationship of ICT and Organizational Learning Capability (OLC)?

## Review of Literature

### Concept of Information and Communication Technology

ICT has been used as an umbrella term in which different types of tools and devices like computer, Smartphone and its related facilities like camera, scanner, printer, video player, audio player and recording mechanize etc. (Semenov 2005). He further says that ICT is the combination of various types of networks like satellite, hardware and software by which communication and information sharing becomes possible on various platforms like social networking media, websites, video conferencing and emails.

Similarly, there is no commonly agreed single definition of ICT, according to Rouse (2019) although the phrase is used for all devices, applications, systems, and networking components that are combined and used by individuals and organizations to communicate digitally.

According to Kaware and Sain (2015), ICT is a combination of three words: information, communication, and technology. Thus, these three words help us to understand the concept of ICT as it is mixture of tools and technological resources which are used to manipulate and communicate information. The tools refer to electronic or digital devices such as computer, smart phone, internet and broadcasting technologies etc. They further say that information may of different types such as text, audio, video, image, number and multimedia and to transfer or communicate the information technology electronic devices like computers and telecommunication networks are required.

Similarly Güzel (2017) is of the view that ICT is a very broad term which contains all those tools, infrastructures and services that involve communication. ICT as Rouse (2019) contemplates that it includes antiquated technologies like landline, fix, radio, TV alongside the modern internet enabled technologies such as cellular/android mobiles, wireless devices as well as cutting- edge ICT pieces like robotics and artificial intelligence. The author goes on to explain that ICT components are extensive and constantly evolving, with some existing for decades and others, such as smart phones and robotics, being more recent additions. According to him, ICT is sometimes used interchangeably with IT (Information Technology), but ICT is a larger and more inclusive phrase than IT.

ICT, according to Celebic & Rendulic (2011), relates to Hardware (physical and tangible components), Software (intangible parts), and Networks. It also refers to all technologies used to collect, process, store, and secure various forms of information (connected by wire or wireless). They claim that ICT is employed in e-learning, e-banking, e-commerce, e-health, and e-government.

According to Seeram (2019), the majority of tasks were once carried out manually, but thanks to technological advancements, man is today dependent on it in a variety of professions. ICT is employed in various industries, including education, defence, business, government, banking, agriculture, transportation, and many more, according to the author. According to him, technology has transformed every industry, and humans will become increasingly reliant on it in the future.

### Use of ICT in Education

ICT in Education or Education Technology according to Kaware and Sain (2015) refer to the study and practice of the use of technological processes and resources which facilitate /teaching learning and improves performances. Ra, Chin et al. (2016) in their paper have revealed ten dimensions of the use of ICT in education

- ICT in national vision in education.
- ICT in educational policies and plans
- ICT in infrastructure and resources
- ICT for the professional development of educational leaders
- ICT for the professional development of teachers
- ICT in partnerships
- ICT in development and modernization of curriculum
- ICT in teaching and learning processes and improvement of learning environment
- ICT in assessment, evaluation and educational research
- ICT for the improvements in education management information system (EMIS) for better planning and resource allocation.

In their research, Kaware and Sain (2015) listed six uses for ICT in the realm of education: ICT expands options for learning through online learning, enables a knowledge network for students, supports teacher professional growth, expands the supply of high-quality educational materials, and improves administrative effectiveness.

### **Organization Learning Capability (OLC)**

Organizational learning capability (OLC) is the process of learning that takes place within an organization, according to Deric (2019). She claimed that the original intent of the OLC was to be limited to organizations, but over time it drew academics from a wide range of fields, including sociology, anthropology, physiology, management, economics, and political science, each with their own viewpoints. She asserts that there is academic agreement that organizational learning and development (OLC) can be cognitive (derived from other people's behaviors), exogenous (external, inter organizational learning), indigenous (derived from one's own experience), incremental (relates learning to performance), environmental (derived from organizational culture, structure, and available resources), temporal, and occur at different levels within an organization.

Organization learning capability (OLC) is defined by Lafuente, Solano et al. (2019) as the capacity of an organization or institution to acquire, share, integrate, and transfer learning and knowledge. This suggests that information flow within an organization is a constant process with the ability to provide sustained competitive advantage, become a source of higher performance, and enable the business to adopt better organizational strategies.

When Teylor observed that the performance and productivity of the organisations were greatly improved by the transfer of information, the idea of an organization's learning potential was first put forth in 1900. However, Cyret and March are the academics who are credited with developing blended learning and organizational skills. They also popularized the term organizational learning in the literature on organizations. Organizational learning has changed the way that learning is perceived. Previously, learning was thought to only occur at the individual level. Now, however, learning can also occur at the group level when organizational culture and environment support learning thus attracted the attention of academics and researchers (Tohidi, Seyedaliakbar et al. 2012).

Organizational learning capability (OLC) is not limited to the business but is discussed in myriad of different fields like health care, military readiness and the learning of students at schools etc. Organizational learning capability (OLC) is the ability of an organization to undertake suitable and accurate managerial procedures and make an environment which is conducive for learning. Knowledge acquisition processes can be external in which an individual gathers knowledge from outside sources as well as internal in which one learns from within activities inside an organization. Knowledge acquisition happens by the process of observing others in organization and by deliberate searching and monitoring. Organizational learning capabilities are successful when consist of such procedures in which knowledge and information is gathered from both internal and external sources (Shoid, Kassim et al. 2011).

### **Characteristics of Organization Learning Capability**

Saadat and Saadat (2016) divulged that Organizational learning capability (OLC) attracted more attention after the progress of “Strategic Management” which is based on the internal activities and procedures of an organization and human potentialities’ of the organization are considered as source of competitive advantage. They further explained the OLC as process

- Complicated. Because it is based on interpersonal and intrapersonal and environmental communication that take place within organization.
- Unplanned. Unlike educational learning OLC is unplanned because it is not based on books and formal setting.
- Purposeful. OLC is purposeful activity and aims the improvement of an organization.
- Dynamic. The process of OLC is nonstop in which people and groups acquire knowledge and experiences from others and then further transfer these to others.
- Universal. It is a universal process because it not limited to specific time, place or organization.
- Evolved and Growing. After feedback the process of OLC is evolved for further improvement.
- Affected by cultural sources and technological tools. As it processes of continuous sharing information therefore can be affected by the cultural sources and technological tools.

### **Levels of OLC**

Roder (2019) thinks that basically there are four levels of organizational learning:

- Individual learning. When an individual worker learns new idea or skill from his environment and then adjust his behaviour accordingly after interpreting and experimenting.
- Group learning organizational. When individual members interact with each other and thus share the knowledge which have acquired individually, it becomes group learning. Since it is a team work therefore, and it leads to better coordination.
- Organizational learning. When all groups coordinate with each other’s, they share and discuss the previously acquired knowledge through communication, which is transformed to be used for increasing efficiency of the organization.
- Inter-organizational Learning. This type of organizational learning is in common businesses having franchises at different places in which business model of a franchise becomes source of learning to other franchises.

### **Stages of OLC**

Odor (2018) is of the view that Organizational learning has five stages:

- Knowledge acquisition process,

- Sharing of the acquired knowledge,
- Interpretation of the shared knowledge,
- Maintained of knowledge, and
- Utilization of knowledge.

According to the author the acquired knowledge brings cognitive and behavioral changes when it is integrated in the organization, it allows the organization to improve its action and bring competitive advantages. In other words, individual knowledge becomes collective knowledge.

He explains that knowledge acquisition process has further five ways: The first drawing of knowledge forms the facts which have become the causes of birth of the organization. The second the earning of knowledge from experience. The third is accumulating of knowledge from the observations of other organizations. The fourth is grafting of needed knowledge and the fifth is the gathering of information of physical environment of the organization.

### **Dimensions of OLC**

According to Chiva, Alegre et al. (2007) and Gomes and Wojahn (2017) there are five dimensions of OLC

1. Experimentation. It deals with creative ideas, new suggestions due to which work processes are shaped. It also involves innovative way of coming up the solutions of the problems.
2. Risk Taking. Risk taking means acceptability of mistakes in order to assume risk in initiating some activity in the organization and hence it has become a great source of organizational learning.
3. Interaction with external environment. In order to adjust with changing environment, harmonious relations with environment is very necessary. Environmental factors consist of business agents like competitors, economic, social, or political systems which are not under the direct control of the organization.
4. Dialogue. It is persistent inquiry into the daily experiences about the procedures, possibilities and achievements.
5. Participative decision making. It means the involvement of employees into decisions making which provides a sense of ownership in them.

Shoid, Kassim et al. (2011) and other researchers think there are three dimensions of OLC.

1. Transfer of knowledge. Employees of an organization learn from each other and this learning is transferred, due to which organization grows and capabilities are enhanced through learning organization.
2. Leadership. Leadership play a vital role in the encouragement of learning environment, motivate the employees to follow innovative ideas, encourage them to learn from their mistakes and foster the flow of information.
3. Performance of Knowledge. The culture of sharing information across the organization is very essential for the improvement and growth of the organization and ultimately results in the generation of competitive advantage.

While Shamsul, Mohd Shoid et al. (2014) add following dimensions of OLC.

1. Shared vision and mission. It means the commitment of an organization to plan future strategies to be adopted as road map.

2. Organizational culture. It refers to a set of values which shape processes and behaviours of the organization.
3. Team Cooperation. Individual skills and knowledge which are beneficial for the organizations are transferred.
4. ICT. It implies that ICT tools are highly beneficial for organizational learning.
5. Knowledge performance. Here knowledge whether individual, in team or organizational is valued.

Tohidi, Seyedaliakbar et al. (2012) developed a model of five dimensions of OLC

1. Managerial Commitment and Empowerment. For the progress of the organization is pertinent for the management to comprehend the significance of OLC by promoting a learning culture, encourage acquisition, transfer and integration of knowledge.
2. Experimentation. For new ideas and creative learning experimentation is required through which new avenues are opened.
3. Risk Taking. It is the tolerance of an organization towards errors, mistakes and new innovative ideas.
4. Openness and interaction with external environment. To be successful organization needs to harmonize with the changing environment and should be open for accepting opinions and experiences.
5. Transfer of knowledge and integration. It means the internal sharing of knowledge which is acquired individually through communication, dialogue, interaction and debate, which the most important factor of OLC.

Jerez-Gomez, Céspedes-Lorente et al. (2005), Alsabbagh and Khalil (2017) and (Yusoff, Omar et al. 2019) have given a model which is based on four dimensions of organizational learning.

1. Commitment of management. It is the development of culture by the management which encourages acquisition, transfer and integration of knowledge.
2. System perspective. It means that organization should be considered as system which consists of different sectors which required collaborative work.
3. Openness and experimentation. It means promoting a climate which welcomes new ideas, opinions of others and allows risks to be taken.
4. Knowledge transfer of and integration. It means the sharing of knowledge and then its integration after feedback system and refinement.

## Research Design

In the process of research all those procedures which are employed for the collection and analyzing of data is called research design (Ranganathan and Aggarwal 2018). For the current study correlational research design has been used having two variables; ICT is independent variable whereas OLC is used as dependent variable. For prediction and clarification correlational research design is helpful and it also facilitates us to know the measurement of what and how extent the variables are interrelated (Seeram 2019). In correlational research design, usually tool in the form of survey or questionnaire is used (Omair 2015). Quantitative approach has been used for the collection and interpretation of data in the instant study For the generalization of results on entire population qualitative approach is very suitable (Creswell 2013, Muhammad 2015).

## Population and Sampling

Subject Specialists teaching in Public sector Higher Secondary Schools of Districts Dir Lower and Dir Upper which are 334 in number was the target population for the study. Stratified random

sampling was adopted because the population was comprised of two districts and this technique was suitable in order to provide equal representation to either stratum. From the population of 334 subject specialists who served in two adjoining districts, a sample size for the current study was 214 (Krejcie and Morgan 1970, Muhammad 2015).

### Instrument of Data Collection

Close ended questionnaire was used for the collection of data from the subject specialists serving in those schools. The questionnaire had three parts; Part-A comprised of the demographic information of subject specialists had 5 items, Part-B which was about the perceived importance of ICT is comprised of 10 items adopted from Nwafor (2020) with his permission. ; whereas Part-C which was about OLC comprised of 16 items was also an adapted instrument (adapted for educational institutes) for data collection with permission (Permission was granted by Jerez-Gomez et al.'s, 2005). All the items all parts of questionnaire were 31 in total.

### Data Collection Procedure

For the collection of data permission was obtained from District Education Officers who are the controlling authorities of the sample schools at District level. In order to get permission for the collection of data from the sample schools, District Education Officers, being the controlling authorities, were approached. Furthermore, due to pandemic of Covid-19 schools were closed. The questionnaire was sent to the Subject Specialists who were respondents of the study in the Google forms through WhatsApp.

### Data Analysis

SPSS V-25 was used for the analysis of the data gathered from respondents. For correlation of and ICT and Organizational learning capability (OLC) Pearson Correlation was used while for understanding the impact of ICT on Organizational Learning Capability (OLC), Linear Regression had been used.

## Results

### Demographic Profile of the Respondents

Demographic characteristics		Frequency	Percentage
Gender	Male	172	80.3
	Female	42	19.7
Age	25-30 Years		15
	31-35 Years		48



	36-40 Years	60
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	More than 40	91
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Professional Qualification	Certified teacher (C.T)	0
	Bachelor of Education (B.Ed.)	26
	Master of Education (M.Ed.)	158
	Others	30

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Experience	Less than one year	27
	1-5 Years	15
	6-10 Years	46
	11-15 Years	87
	16-20 Years	21
	More than 20 Years	18

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Academic Qualification	Undergraduate	0
	Graduate	0
	Master	152
	Others	62

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**Table 4.1:** Displays the respondents' demographic information

## Demographic Profile of respondents N=214

One hundred seventy-two (80.3%) of the 214 Subject Specialists that took part in the survey were male, while 42 (19.7%) were female. According to age, there were fifteen SS who were between the ages of 25 and 30 while 48 were between the ages of 31 and 35; similarly, 60 (28.03%) were between the ages of 36 and 40; and 91 (42%) were older than 40. 26 people (12.1%) held B.Ed. degrees, 158 people (73.8%) held M.Ed. degrees, and the remaining 30 people (14%) got various degrees in terms of professional qualification. In terms of teaching experience, twenty-seven teachers (12.6%) had less than a year of experience, fifteen (7. %) had between one and five years of experience, forty-six (19.6%) had between six and ten years of experience, eighty-seven (40.6%) had between eleven, twenty-one (9.8%) possessed sixteen to twenty years of experience, and eighteen (8.4%) had more than twenty years. One hundred and fifty-two (71%) of those with master's degrees held other academic degrees, such as an M. Phil. or M.S., while sixty-two (29 %) said they had other degrees.

**4.2 Reliability and Validity of the instrument**

The values of the various reliability indices that have been measured are provided in Table 4.2

Construct	Cronbach alpha
ICT	0.76
Organizational Learning Capability (OLC)	0.75

**Table 4.2:** Reliability measurement indices

The reliability for ICT and OLC is shown in Table 4.2, and it is clear from the Cronbach Alpha values that the internal reliability is within the required range of threshold values. Additionally, the questionnaire which has been used in the instant study was appropriate because it had already been utilised in earlier research. The instrument's validity was similarly determined using the instrument's face validity. As a result, it was determined that the instrument could be utilised to collect data.

**Normality of the data**

Variable	Minimum	Maximum	Mean	SD	Skewness	Kurtosis
ICT	1.01	3.71	1.76	0.73	0.72	-0.42
OLC	2.85	6.33	5.03	0.81	-0.93	1.56

**Table 4.3:** Descriptive statistics (N = 214)

The values of skewness and kurtosis are shown in Table 4.3. Table 4.3 indicates the values of Skewness and Kurtosis of the two variables which are ICT and OLC. Keeping in view the Skewness and Kurtosis it is concluded that both have been normally distributed.

### Techniques for secondary analysis

In order to search the first objective of the research study the research question was raised by the researcher; was about the availability of ICT related facilities in Public Sector Schools of the two Districts.

For answering, the percentage distribution technique was used to analyse, this question, and the results are shown as in Table 4.3.

Facility	Available		Not Available	
	Frequency	%	Frequency	%
Computer	214	100	0	0.0
Laptop	35	16	179	84
Television	0	0.0	214	100
Scanning Machine	191	89.7	23	10.3
Printer	214	100	0	0.0
Internet Services	200	100	13	0.0
Fax Machine	0	0.0	214	100
CCTV	208	97.6	6	2.4
Photocopy Machine	15	7.1	199	92.9

Handset	33	15	181	85
Radio	0	0.0	214	100
Computer Accessories	214	100	0	0.0
Projector	0	0.0	214	100
Satellite Dish	0	0.0	214	100
Software	0	0.0	214	100
Video player	112	52.5	102	47.5
Voice Amplifier	191	89.2	23	10.8

**Table 4.4:** Availability of ICT related Facilities in Govt. Higher Secondary Schools

Table 4.4 makes it clear that all schools have access to certain basic ICT resources, including computers, laptops, printers, internet services, and computer accessories. Like how there are no schools with radios, televisions, projectors, screens, satellite dishes, software, or fax machines. In thirty-three schools (15%), there are telephones hand set available, but one hundred eighty-one schools do not have them (85 percent). One hundred ninety-one schools, or 89.7% of them, have access to scanning machines; twenty-three schools, or 10.3% of them, do not. The availability of a video player is comparable; it is present in 112 schools (52.5%) but not in 102 (47%) of them. When it comes to the availability of CCTV, it is present in 208 schools, or 97.7% of all schools, while it is absent from six (2.4%) schools. One hundred ninety-one (89%) of the schools have voice amplifiers, but only twenty-three (10%) do not.

### Correlation

Research question-2 was framed in reference to the study's second objective.

### Correlation between ICT and OLC

		ICT	OLC
ICT	Pearson Correlation	1	-.342
	Sig. (2-tailed)		.000

OLC	Pearson Correlation	-.342	1
	Sig. (2-tailed)	.000	

**Table 4.5:** Correlation between ICT and OLC (N=214)

According to Table 4.5, there is a moderately negative and statistically significant association between ICT and OLC ( $r = -.342$ ,  $p = .000$ ,  $n = 214$ ).

RQ-3 is developed in response to the third objective.

### RQ3. Is there any impact of ICT on OLC?

Linear Regression was used to examine the effect of ICT on Organizational Learning Capability (OLC), and the results are shown in Table 4.5.

	Beta Estimate	P	Result
ICT → OLC	0.021	0.758	Insignificant

**Table 4.6:** Effect of ICT on OLC (N=214)

Table 4.6 shows that ICT has a negligible effect on OLC ( $\beta = 0.021$ ,  $p = 0.758$ ).

### RQ4 What is the role of gender in the form of moderator in the relationship of ICT and OLC?

In order to get answer of this research question Regression Analysis has been used.

Model		Beta Estimate	P	Result
1	ICT ----OLC	-0.036	0.000	Significant
2	ICT ----OLC	0.024	0.725	Insignificant
	↑			
	Gender			

**Table 4.7:** Regression Analysis for the effect of moderator

Table 4.7's findings show that gender has no bearing on the association between ICT and OLC ( $r=0.024$ ,  $p=0.725$ ). According to Ali (2017), the purpose of the moderator is dual since it either increases or weakens the association between the dependent and independent variables.

According to Bennett (2000) gender can act as a moderator in some situations while acting as none in others. The relationship between PLS (Principal Leadership Skills) and IC (Intellectual Capital) is unaffected by gender in the study conducted by (Muhammad 2015); and the same has been demonstrated in the current study.

## Discussion

Pakistan is developing quickly, thus ICT use and digitalization are now essential in many spheres of life. As a result, ICT in schools is becoming unavoidable. As organizations such as schools evolve in response to changing situations, an efficient process is always required for organizations in order to achieve their goals, which can be accomplished through OLC (Yusoff, Omar et al. 2019).

The goal of this study is to determine the influence of ICT use on OLC of Higher Secondary School Principals in Dir Upper and Lower, Khyber Pakhtunkhwa, Pakistan.

### Availability of ICT Facilities

According to the findings of current study (Table 4.3), ICT related facilities or tools have been provided in mostly schools, there are still significant gaps in the availability of such facilities. All schools, however, have access to basic resources including computers/laptops, printers, and the internet. The provision of these facilities is one issue, but the real issue is the proper usage of these available facilities for carrying out administrative tasks because many principals especially aged do not possess computer literacy, consequently there is very limited utilization of ICT for efficient administration. To get the desired results, principals' organizational learning capabilities must be enhanced, and they must be trained in this area.

### Relationship of ICT and OLC

From the findings of the current study it has been concluded that there has been a moderate correlation between ICT and OLC which is shown in table 4.8.

Organization learning promotes organizational performance and for better performance new skills and innovative ideas are to be acquired and which is possible through the integration of ICT (Bolaji Bello and Adeoye 2018). ICT provide platform for acquisition, sharing and retrieving of new knowledge and information thus ICT triggers organization learning. (Siddiqui, Rasheed et al. 2019) found that ICT is the main factor for promoting innovative capabilities which lead to organizational learning.

### Gender as Moderator

According to Ali (2017), gender plays two roles: it either strengthens or decreases the correlation between the dependent and independent variables. According to Belo (2016), the involvement of demographic characteristics as moderators may have an impact or may have no influence on the link between dependent and independent variables. Gender has no influence on the link between ICT (Information and Communication Technology), an independent variable, and OLC (Principal's Administrative Effectiveness), a dependent variable, according to the current study's findings. When

demographic characteristics are used as moderators in study, the results vary. Muhammad (2015) observed that utilizing demographic factors as moderators, there is no moderator influence on the relationship between PLS (Principal leadership skills) and IC (Intellectual capitals). Therefore, Muhammad (2015)'s study is said to be consistent with the current study in that demographic factors have no influence on the correlations between ICT and OLC. Ali (2017), on the other hand, discovered that demographic characteristics had a significant impact on the relationship between instructional leadership and school effectiveness.

### **Implications of ICT**

ICT in Education which is also called Education Technology sometimes according to Kaware and Sain (2015) have varied uses in different dimensions of Education. The application of ICT enhances opportunities for learning through online learning, provide a huge network of knowledge for learners, helps in the capacity building of educationists, develop professional development of teachers, increases the integration of material and human resources and flourishes administrative effectiveness (Ra, Chin et al. 2016). Manual data management is time-consuming labor, while ICT allows for faster data organization, allowing for improved decision-making and thereby enhancing the quality and level of education (Antonio and Lorenzo 2019). Manual school administration planning and use of current resources is difficult, but the use of ICT has made it simpler to allocate school resources properly, which eventually assists in the attainment of educational goals (David, Tanui et al. 2019).

### **Implication of Organizational Learning Capability (OLC)**

OLC is the process of learning inside organization (Deric, 2019). According to the author the concept of OLC was limited to business organization but later it attracted the academics and now it is used at schools. According to Lafuente, Solano et al. (2019) OLC is the continuous flow of knowledge which provides an environment of competition due to which productivity and performance are flourished in organization like school.

Odor (2018) argues that organizational learning occurs at two levels, external like customers, competitions etc. and internal like workers, procedure and structures. According to the said author role of effective administration is very pivotal because it is the administration which creates learning environment, set principles where knowledge flow effectively and efficiently. Konstantinidis and Oikonomidou (2019) assert that administration should make an organization flexible to allow new experimentations in order to pursue innovative ideas and thus organizational learning is fostered. Organizational learning is linked with organizational effectiveness and hence it is the effective administration which paves path for the flow of learning, devise effective procedures improve planning and evaluate requirements (Konstantinidis and Oikonomidou 2019).

Jamil and Obeidat (2019) are of the opinion that administration of an organization shapes a climate where knowledge is promoted, and organization learning occurs through which the long-term goals are achieved.

Akhtar (2016) argue that organization need to develop itself into learning organization where knowledge is acquired, shared and it is possible in by systematic way only using ICT.

Bolaji Bello and Adeoye (2018) conclude that through the integration of ICT new skills and innovative ideas of employees within an organization are developed because of which the organization moves forward on the track of progress.

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