THE ROLE OF PLCS IN THE PROFESSIONAL DEVELOPMENT OF TEACHERS IN SOUTH AL-BATINA GOVERNORATE/ SULTANATE OF OMAN IN LIGHT OF ONLINE LEARNING

Iman Mohammed Zaid Al Maawali
Ministry of Education - Sultanate of Oman

ABSTRACT
The study aimed at identifying the role of PLCs (henceforth PLCs) in the professional development of teachers in South Al-Batina Governorate/Oman in light of online learning. The research community consists ofall of the staff members of the academic year 2020-2021, whose number is 6,942 teachers based on the statistics of the Department of Education. The study sample consists of (200) male/female teachers. The study tool consists of five domains with (30) items. The study found that PLCsplay a major role in the professional development of teachers in South AlBatinagovernorate/Oman. The results of the study also showed that there are no statistically significant differences related to the role of PLCs in the professional development of teachers in South Al-Batina governorate/ Oman, where differences were found to be due to the change of gender, type of school, scientific qualification and experience. However, the results showed statistically significant differences in the school type variable in the domain of self development in favor of the first category. The study also found statistically significant differences in the variable of experience in the domain of collective participation in favor of experience category from 11-15. The research suggests many recommendations, the most important of which is the need to continually support teachers to benefit from all new theories that can serve the educational environment and develop their skills. Besides, it is necessary to establish an office in the educational institution to train and develop the skills of employees.

Key Words: virtual learning communities, professional development, online learning, South Al-Batina Governorate.

1. INTRODUCTION
Due to the development of communication devices among humans, electronic interaction has increased especially with the availability of many devices that facilitate the process of communication regardless of place and time. Many changes took place in the last third of the 20th century, which imposed a new social reality as well as an increase in the processes of change and development, accompanied by the need to information and knowledgein the age of information and technology. The use of the World Wide Web resulted in the appearance of new societies which were called PLCs; as the technological factor is considered the main drive of thosevirtual electronic communities,(Taleb, 2020).

The Virtual community appeared as natural development of the informational revolution because of its connection with communication technology. What distinguishes those communities is that they are available to individuals who want to participate in one of its patterns. The virtual city, as Albert Ropert, and Jenkinson Mchael say, is a city that does not sleep. Parks(2011) stated that users of virtual communities will become active users who commit themselves to the services of social nets, especially when they find that a great number of their peers use those services to carry out variety of discussions.

Technology has founded communities that are classified to communicate within specific specialties and topics. At the same time, these communities are not limited to a special group, but are available to all classes and levels, away from space and time boundaries,Boglove, (2017).Sahar Mohammad (2020) also stated that PLCs are not a substitute of traditional communities, and that those professional communities often get together by a communication net, which is linked with technology.

The process of communication in (PLCs) do not occur face- to- face. They occur through electronic communication channels where words, voice and images are used. De Moor&Weigand(2007) see that PLCS consist of four stages: foundation and trying stage; inauguration and start stage; internal development stage; and external development stage.

Development of PLCs forced teachers to improve their professional skills, which will improve the level of their performance. Learning through PLCs differs partly from traditional communities. It requires complete dependence on the internet use. Therefore, teachers have to be able to deal with those environments, and this will result in improving teachers' continuous professional practices of improvement skills(Keamy&Selkring, 2013).Using PLCs in the process of learning requires teachers' ability to interact, negotiate, and participate in discussions of issues, as well as the necessity of having basic skills needed in the process of using learning technology in the educational process. (Bustamante & Moeller, 2015)

It is noticed, through the above mentioned information thatthe process of learning and education is in a constant state of change. This requires that teachers should be ready to face this change in learning processes to enforce teachers' role in PLCs. Encouraging teachers to develop their professional skills for the continuity of learning through PLCs will improve their performances, and will move them to the other part of employing all of the current techniques of learning; as learning process do not take place inside classes, but it goes beyond that to be a twenty-four hour learning process through the use of techniques provided by virtual learning environment.

2.PROBLEM OF THE STUDY

The emergent conditions of the world countries made these countries depend on education technology for the continuity of the educational process. At the same time, this caused many burdens that have to be solved by the people concerned to maintain the process of communication and education by developing required skills to improve the professional performance of teachers.Qazaq(2012) stated that readiness of staff members to apply online learning still needs

more support and training.(Scott(2010) & Lock,(2012) state that PLCsares considered good devices to foster professional development of teachers, and develop their skills to apply PLCs in learning processes. Based on this, the importance of teachers' professional development is evident through the employment of virtual communities. Several previous studies indicate that there has been shortage in the employment of PLCs, particularly studies made by Ibrahim and Marzouki (2018), whichrevealed problems in professional development programmes and school physical aspects. Suneangish (2019) also showed that the majority of teachers do not employ PLCs optimally. Therefore, stating the study problem lurks in identifying the role of PLCs in teachers' professional development in South Al-Batinagovernorate in Oman in light of online learning. Based on this, two sub questions will come out:

1. What is the role of PLCs in the professional development of teachers in south AlBatina Governorate in Oman?
2. Are there statistically significant differences at the level of the significance (α≤0.05) in the role of PLCs in the professional development of teachers in South Al-Batinah governorate, where online learning remains depending on the variables of gender, qualification, school level, and experience?

Importance of the study

The importance of the study is shown through accessible results that can benefit all those working in the educational process. It lurks in the theoretical and applied importance of the study.

First: the theoretical importance of this study lies in the enrichment of the Arab Library in the field of PLCs and its role in the professional development of teachers, especially with rarity of studies in this field. It also lurks in providing a theoretical framework of the PLCs of the Arab Library, which can contribute to its development through works of researchers.

Second: The applied importance: it provides decision makers with informationand some mechanisms to enhance the development of the level of professional performance of teachers by creating new learning methods and patterns to improve teachers' professional skills to enable them to use learning techniques effectively and overcome any difficulties in the process of traditional learning. It is considered an important opportunity to increase teachers' effortstowards developing their skills in the field of employing educational techniques, which have a positive impact on the development of their professional skills. The results of this study can be distributed to all teachers of different disciplines.

Objectives of the study

1. Identifying the role of PLCs in teachers' professional development in south Al-Batinagovernorate in light of online learning within the study dimensions.

2. Revealing differences in the role of PLCs in teachers' professional development in south Al-Batinagovernorate in light of online learning according to variables of sex, qualifications, school level and experience.

Terms Of The Study

Virtual Communities: Hijab (2004, p47) defined PLCs as: "A community of people who are geographically distant, and who communicate through electronic networks. Consequently, a sense of loyalty and participationtook place among them". Practically, the researcher defines PLCs as all the devices and procedures that are carried out by teachers for the continuity of learning, which contribute to the improvement of the level of professional performance through the use of a network.

Professional performance of a teacher:

Wahba (2011, 00) defines it as: "upgrading of teachers' performance by acquiring the necessary skills and developing positive trends to improve learning and education in response to the changes and needs of society." Practically, it is the method followed by teachers through employing PLCs in the learning process, which develop practical and cognitive skills in employing learning technology in teaching.

Limitations Of The Study

Objective limitations: the role of PLCs in the professional development of teachers in south AlBatinaGovernerate in light of online learning.

Spatial limitations: schools of post primary education in south Al-Batinagovernerate.

Time limitations: which were applied in the second semester of 2020/2021

Human limitations: teachers of post primary education.

Theoretical Frame And Previous Studies

Applying PLCs in teaching and learning provides teachers with opportunities to access students beyond spatial and time dimensions. The nature of PLCs facilitates human communication, and contributes to enhance the process of creativity and innovation to create new educational opportunities.

PLCsdo not see-eye-to-eye onthe concept of the educational environment. Some called it online learning;others called it virtual learning. Despite this change in concepts, the purpose remains the same: continuity of the PLCs in light of some challenges that face the PLCs. Besides, this change in concepts is considered a starting point towards the development of the patterns of learning methodology.PLCs are platforms for discussion and information sharing to enhance the learning process, and enhance the relationship between the content and theway you access it using technological tools (Valencia, 2018). the Studies made by Salem (2018); Abu Fakhr (2012); and Khamis (2014) show that the goal of PLCs is to provide science,

communicate, access information and provide training through the Internet, hopingthat it might develop teachers' professional skills in learning and education process. The beginning of learning communities goes back toSenge Peter, the founding father of learning communities, who identified the importance of learning communities in educational institutions.PLCs seek to continue the learning process, in which individuals learn through experience and meditation, where groups learn to collaborate, exchange educational experiences and discuss some educational issues (Shihab, 2019).

The cooperation of the teaching staff is mere frameworks of joint cooperation, which aims to share experiences and address the difficulties and challenges facing the educational process in the application of online learning through the wide spread of the Coronavirus pandemic.These frameworks aims to ultimately spread the culture of professional communities, train teachers, supervise the educational process according to each course,Prepare plans that aim at providing appropriate learning for students, and avoiding problems which hinder the achievement of the goals of applying online learning.

Concept of PLCs (PLCS):

Many researchers have referred to the concept of the term PLCs. Marcel(2009,p, 300) defines it as: "A group of people interacting with each other through chat rooms , exchanging and sharingdifferent subjects related to the educational sector of each specialization." Al-Fajlaoui (2009, p, 9) defines it as: "Social groups emerging through the Internet, where users have the ability to recognize and create discussions to form collective consciousness and personal relationships in a virtual space".

Proulx (2004) defines the PLC as: "A group of individuals who use chat rooms, discussions panels, or dialogue groups, and develop aloyalityrelationship as a single group , which has the same tastes, values, interests and shares common goals."

Based on these definitions, PLC is the process of communication between teachers and students through all websites to discuss educational issues, regardless of temporal and spatial dimensions.

Importance Of Plcs:

Due to the current circumstances, online learning is seen as one of the most effective solutions to challenges that hinder the continuity of the learning process. PLCs are only groups trying to provide a learner with information. The developments in educational environments and the technological and scientific change forced educational institutions to be part of this situation. They should provide training courses to the teaching staff to keep up with these techniques, (Al-Qahtani, 2010). PLCs have provided new learning experiences through discussions, training and improvements that affected traditional learning and online learning. Consequently, interesting, exciting and highly efficient learninghas taken place during the spread of the Coronavirus (Othman, 2009). Halal(2014) adds that the importance ofPLCs lurks in the continuity of learning.

Dettinger & browerm(2003) identified several features of learning inputs which can build an educated society. They mentioned learning integration with every work done by individuals, sharing learning experiences, encouraging the learning process for learning itself, as well as supporting teamwork, creativity, empowerment and quality of the learning process, (Makhlouf, 2015).

One of the basic pillars of building a PLC is cooperation and interaction at all levels of leaders and teachers, as this will maintain the process of leaning (Alshiyaab, 2019). This indicates the interest of learning society, which provides learning opportunity at all levels and times to become inseperable part of the learning community culture, (Halal, 2014). It has become clear that PLCs have been found to be an important means in the processes of development and reform, and a starting point towards the employment of new tools, especially after the development of the technological revolution and knowledge explosion, which enabled the educational institutions to respond to these changes and employ them in the educational process.

Goals of PLCs

The creation of a PLCis determined based on the goals it seeks to achieve in the light of many challenges, especially with the Corona pandemic. The most important characteristics of these communities are diversity of individuals and information, openness to other environments and societies,as well as facilitating exchange of experiences and professional dialogue (Highk 2019). Al-Assali (2019) adds that PLCscontinue to evolve. The most important objectives of PLCs are:

First:Reform and development of schools: the process of developing schools is the responsibility of all people concerned. Teachers and school administrations are concerned to develop school facilities.PLC is an opportunity to participate in the development process. The findings of Bryk et al. 1999 showed the important role of the PLCs in the process of educational change, development and reform to facilitate learning.

Second: Creating asupportive and stimulating learning school environment.Diversity of experiences acquired by teachers through the professional learning community is an opportunity to develop learning mechanisms to create a stimulating learning environment in the learning process, as well as to build a collaborative environment in the exchange of experiences among teachers.

Third: Developing a sense of collective personality: the environmentof PLCs is a collective environment that operates in one entity with the aim of sharing information according to the specializations of teachers, which gives a strong opportunity to enhance learning processes and encourage teamwork among teachers in one or several schools.

Fourth: Developing the experiences and skills of students and teachers:PLCs seek to develop skills, knowledge and experience,as well as the development of social, academic and professional experiences, which will provide a professional learning community with skills, experiences and thinking skills, and will teach students to use scientific research methods in their studies.

Fifth: Raising the level of academic performance in PLCs: Improving the academic performance of teachers is an opportunity provided by the learning communities concerned, which reflects the level and performance of the school, and increase the awareness and achievement of the students; as schools which adopt the system of professional communities maintain high rates of achievement.

Louis (2008) says that students can obtain higher levels of achievement through PLCs. Wong (2010) states that the achievement of an individual student is positively associated with the high level of learning at school, because a school is a professional community. Collective learning is a salient feature of PLCs. Morrissey(2000) referred to the relation ship between individual learning and collective learning, where the pattern of old learning lost its ground long time ago, especially with the spread of technological devices. With new teaching methods like active learning, cooperative learning, learning teams, and student centeredlearning, theold model of learning has become more secluded. The new learning patterns used in teaching will achieve the following:

1. Students wil be involved in the process of discovery, research and expansion of knowledge, where they create the meaning of the subjects they study under the supervision of teachers.

2. Students will rely on themselves in modern learning processs, because the nature of learning is only to employ the previous experiences of students in the educational environment.

3. Teachers will attempt to develop students' talents and nurture their talents.

4. These patterns will develop teachers' performance to contribute effectively to the process of school improvement.

It should be noted from the above that PLCsare springboardprogrammes for teamwork, which will contribute to the development of the learning process, the development of teachers' skills and knowledge, and to obtain feedback through sharing ideas.This will improve the educational process that increases teachers' loyalty to the school as well as the students' acceptanceof the learning process.

Principles of PLCs

PLCs principles are required in the light of the proliferation of technology and the ease of forming virtual groups that can communicate and share experiences around the clock. The learning community is characterized as a predicting society of future problems, which cares about the external environment, and seeks improvement and development (Dufour et al., 2019). The process of buildingPLCs is effective. It

It focuses on the continuous improvement of the learning environment (Shihab, 2019). Hord (1997) and Hall (2014) identified many characteristics and conditions for building a professional learning community as follows:

First: a supportive Participatory leadership:PLCshelp to exchange information between the school principal and the staff, share power and authority with them, and share ideas to access some information and appropriate educational methods.

Second: shared Vision and Values: The Organization of PLC contributes to achieve the overall vision of the learning process, as these communities attempt to bear responsibility for the learning process, and develop it to serve the learning environment.

Third: Collective creativity: One of the main advantages of PLC is that they work collectively and share information in promoting learning processes that will provide an educational environment toresearch new innovative methods to use them in the learning process.

It can be said that ascribing the concept of PLC to schools is based primarily on building and developing the capacity of the school staff to practice different activities and leadership roles. It is also baseddoncomplete cooperation between a school administration and teachers with the aim of increasing the efficiency and performance of the school, which will build the capacity and management skills of teachers to exchange information.

Professional development:

Human element is the capital on which states invest and provide full support to enable him to be capable of dealing with different environments, by equipping him with appropriate training programmes to face life whichis in a state of constant change. The educational sector is one of the most important sectors that contain a lot of human elementswho provide knowledge and science to students. As learning and education methods are developing in the light of technology and the proliferation of new learning patterns, the Ministry of Education is responsibileto provide an appropriate environment capable of interacting with technology and the challenges facing the education sector.

Hamidawi (2017) stated that professional development is an old term, andthat tools are in an ongoing development process.Professional development indicates what is present and affects the course of the educational process. Professional development has become an imperative for teachers to use electronic platforms in teaching. Teachers need to hold workshops, seminars, lectures, and all available electronic means to enter communities ofprofessional growth to keep up with everything that serves the educational environment (Al-Qarni, 2018).A new vision has emerged for the teacher's professional development to meet the requirements of time, as this development is an essential entry point to keep up with all that is new, and make all teachers think seriously of improving their professional practice and developing their knowledge and trends (Al Fahid, 2013)

Many institutions have called for the need to work continuously on the professional development of teachers to avoid any weakness and deficiency in their performance.Continuous professional development works to raise the efficiency and effectiveness of the teachers towards better performance. Al-Harithi (1430, 13) defined professional development as: "All the information, skills and experiences that the learner acquires in his field of work in order to develop his habits, trends and style of work."

It should be noted from the above that professional development is a renewal of the knowledge and skills of the teachers in the light of what is new. This shows the importance of the role that teachers play in the tasks that require them to cooperate with the departments of education to provide everything that serves the teacher's environment, and work to develop skills to serve the educational environment, the teacher, the student and the school.

Professional Development Goals:

ProfesionalSelf-development aims to achieve a number of goals that are for the interest of the educational process in all of its axes.Al-Qarni (2018) and Al-Bushi (2015) stated that the goals of professional development are summarized as follows:

1. Improvingteachers' ability to do their jobs well, refining their professional skills, and increasing their knowledge and innovation;

2. Increasing efficiency and maximizing productive efficiency;

3. Learning about the latest educational theories, effective methods, modern techniques, and innovation in professions.

4. Avoiding deficiencies in the preparationof teachers, enhancing their performance, and correcting inactiveapproaches.

5. Preparing qualified teachers and getting them to deal with others in a civilized way.

6. following-up contemporary educational thought, identifying the most important results of educational research and studies, andadopting the most important results and recommendations.

The researcher believes that self-development programs attempt to keep up with the teacher on all educational developments, and give him a positive subjective concept towards himself to possess the skills and professional methods that help him develop his work in the school.

Importance of self-professional development:

Self-professional development is a prerequisite to the success of the school provided that it is linked to educational practices, and has a direct impact on it, withclose relationship to scientific research and planning. Besides, it should be within an edecational plan of a school or an educational institution, and be based on a clear vision and scientific planning and implementation.

AL-Hur(1430 H) stated that effective professional development affects not only improving the skills, or the attitudes of the school staff, but it also affects the culture and structure of the organization or school to become effective and distinctive.Recently, interest in developing human resources has increased as it is the base of economy, and the main tool to achieve comprehensive development. Consequently, great attention has been given to prepare, train and develop these working powers to increase their production and achieve purposes of the

development plan,(Alhomaidhan, 2013). Many developed countries have focused their attention on the development and training   of teachers by facilitatingthe application of the concept of self-employment through development methods, techniques and development programmes.

The professional development of teachers has stemmed from many problems referred to by many researchers, including (Bahwashi, 2006, Abdulaziz and Abdul Azim, 2007), the most important of these problemsare:

1. Shortcomings in teacher training programmes, especially with the development of learning and education methods, which need to be handeled (Bouchi, 2015).

2.The emergence of many problems associated with the educational process and teaching methods, which make it necessary for the teacher to train and know how to employ them and face them in a logical and conscious way.

3. Constant development of courses in different subjects, and the need to follow up and train teachers.

4.Creating methods in the field of teaching different subjects, with the aim of improving teachers' performance with new learning patterns.

5.Technological development in designing educational devices, which have changed the nature of the educational process.

6.Weakness of teachers' training programs, which made them need preparation and professional self training in a new way

It should be noted that the professional development of the teacher is a basic requirement. Many countries have established a specialized departments aimed at providing training programs for teachers in light of the proliferation of teaching and learning and the wide spread of technology, which is accompanied with many educational electronic platforms, which make it easier for teachers to follow students and their duties; considering that the role of the teacher today has become the basic in the light of the space gap between teachers and students.

Previous studies:

Many previous studies have dealt with PLCs, and here are some of these studies arranged from the latest to the oldest.

Al-Sinani and Bani Atta (2020) discussed the role of PLCsin the development of planning skills of the female teachers of Islamic education in AlMadinaAlmonawarah(KSA).The researcher used the descriptive method. To achieve the goal of the research, a questionnaire of (15) valid and stable skillswas set. The sample consisted of (15) female teachers chosen randomly from schools of AlMadinah. The results of the research showed that the role of PLCs in the development of planning skill was high.

AlMasroori, and others (2020) carried out a stusdy that aimed at detecting the availability of the requirements of applying PLCs dimensions from the view-point of supervisors in government schools in Oman. The study also aimed to identify the impact of the variables of scientific qualification and supervising experience. To achieve the objectives of the study, the researchers used the descriptive method, where they prepared a questionnaire of (43) phrases divided into (5) axes, which include

values and shared vision; supportive participatory leadership; learning and collaborative learning teams; and supportive conditions and personal and professional personality traits. After ascertaining the validity and stability of the tool, the study was applied ona sample consisting of (55) male/female supervisors of the Educational Supervisors of the Directorate of Education in the south of the east governorate. The results of the study showed that the degree of availability of the requirements for applying the dimensions of PLCs in public schools in Oman was of a medium degree. Moreover, the results showedno statistically significant differences between males and females in the levels of years of experience and scientific qualification in all axes.

Hassan (2019) conducted a study to identify the requirements of building PLCs in public education schools and their role in improving academic performance. He followed the descriptive method, using a questionnaire of 47 phrases applied to a sample of 789 teachers in the primary, middle and secondary levels in the governorates of Al-dammam, Al-khobar and Al-Dhahran. The study reached several conclusions, the most important of which are: complete agreement of the members of the sample on the need to provide the requirements of building PLCs in public schools, as well as on the role of PLCs in improving academic performance. The study found statistically significan differences between male/ female responses in the axis of the requirements of building PLCs and the role of these communities in improving teaching in favour of male teachers. The study also found statistically differences in the study sample responses in the variable of the educational stage in the axis of the requirements of buildingPLCs in favour of male teachers in the elementary and secondary stages. No differences were found in the responses of the study sample groups in the axis of the role of PLCs in improving academic performance. It also did not show any statistically significant differences in the variable of years of experience; whereas statistically significant differences were found in the axis of the role of PLCs in improving academic performance in favour of male teachers whose experience was less than five years. The study set a suggestion to activate PLCs in public education schools in the KSA to improve academic performance and solve the problems they were facing.

Mohammad(2019) conducted a study with a proposal to transfer secondary schools into PLCs to develop schools intellectual capital. The study reached many conclusions, among of which is concord of the sample study of university staff members wwith the mechanisms of transferring secondary schools into PLCs to develop schools intellectual capital. Mechanisms of building human abilities came ahead of mechanisms from the point of view of university staff members; whereas mechanisms of financial and technical support came in the first rank from the point of view of educational lederships. Both groups agreed on the third and the last order of mechanisms of the organizational structure. Differences in responses ofuniversity staff members

and the educational leaders came to the favour of staff members for the three mechanisms and the total. As for the educational leaders, school headmasters and supervisors, no statistically significant differences were found at the level (0.05) between educational leaders and university staff members concerning the importance of the mechanisms due to years of experience in teaching. Statistically significant differences were found at the level (0.01) between the educational leaders in favour of the supervisors. Differences were also found among those who had taken training courses in learning communities or intellectual capital. The sstudy set an imaginative sample of the relationship between variables of the study.

Al-Dawood and Al-Jaroudi study of (2019) attempted to identify the availability of elements of PLCs in public education schools as an entry point for continuous improvement in Al-Kharj governorate, Saudi Arabia. The descriptive analytical method was used, where the study tools consisted of HelalScale (2014) to apply PLCs in educational institutions. The study conducted on a sample of (295) female teachers and administrators of primary, middle and secondary classes in Al-Kharj governorate. The results of the study showed statistically significant differences in the responses of the study sample concerning the availability of elements of PLCs in the schools of public education in Al-Kharj governorate, where the differences were ascribed tothe stage at which the study sample were working, and were in favour of female teachers working in the primary and secondary stages. The results also showed big difference in the responses of the study sample.

Another study carried out by Demas Abdel Fattah (2019) to identify the role of online learning communities in improving the performance of female chemistry teachers in schools of south Jeddah Education Office. The study which consisted of 63female teachersused the descriptive method.It concluded that online leaarning communities had an effective role in improving professional performance. It showed no differences attributed to the change in scientific qualification and experience.

Al-Zayed, Hajj and Omar (2016) conducted a study to know the impact of online PLCs programmes on improving the understanding of female teachers of sciences. The study used the qualitative approach by examining a case-by-case study based on a questionnaire and semi-closed interview. The study sample consisted of (6) female teachers. The results of the study showed the effectiveness of using online PLCsprogrammesto improve teachers' understanding of aspects of the nature of science related to scientific knowledge and level of performance.

Comments on the previous studies:

The previous studies used the descriptive and qualitative approach. The researcher has benefited from these studies in identifying the areas studied, and how to make use of them in the development of the theoretical framework. In addition to benefiting from the tools of these studies, the researcher has had an idea concerning explaining the findings of this study. What distinguishes this study from the previous ones is that it is one of the few studies, as far as I know, which studied the role of PLCs in the professional development of teachers in Oman.

2. RESEARCH METHODOLOGY

The researcher used the descriptive method in accordance with the research nature. The descriptive approach fits educational researchs, the community of the study, and collecting and analyzing data to conclude results and their connotations.

Research Community: it consists of all male/ female teachers (6942) working in post primary teaching. This number is based on the statistics of the department of education for the year 2020/2021.

The study sample: It consists of 200 male/female teachers.

Research tool:

For the sake of developing the study tool, the researcher made use of some of the previous studies, among of which the studies of Sahar Mohammad (2020) and Demas Abdulfattah (2019), which help in developing the study tool which consists of five dimensions with five domainsand 30 items.The first dimension, self development, with (7) items; the second dmiension, which includes achieving professional development with (6) items; the third dimension, collective participation, with (6) items; the fourth dimension,using teaching technology, with (6) items; and the fifth dimension, design and production skill, with (5) items.

Credibility of the study:

The researchermade sure that the study wascredible through:

First: credibility of referres: The researcher sent the study tool in its initial form to (5) experienced and competent referres to take advantage of their observations on the formulation of the phrases of the questionnaire, clarity and appropriatenessof each phrase for the total field, andthat the study measures what it was designed to find. The researcher asked the referres to give their observations and opinions on the credibility of these items, their suitability, andwhether I have to make some additions, deletion, or modification.After I got the questionnaire back, all the observations were considerd.

Second: credibility of the internal construction of the study tool:Credibility of the internal construction of the items of the study tool was verified by calculating the pearson correlation coefficient by distributing the tool to the sample which consists of (10) of the study community who were excluded from the sample.The correlation coefficient of the items and the total degree were calculated**.** Table (1) shows this.

Table(1) Correlation coefficient for each phrase with the total degree to which the item belongs

Self estimation	Correlation coefficie	Profesionaldevelobment	Correlation coeffici	participation	Correlation coeffici	Technology use	Correlation coeffici	Design	Correlation coeffici

	nt		ent		ent		ent		ent
1	0.795**	1	0.762**	1	0.895**	1	0.863**	1	0.852**
2	0.792**	2	0.848**	2	0.861**	2	0.759**	2	0.847**
3	0.903**	3	0.826**	3	0.905**	3	0.820**	3	0.877**
4	0,829**	4	*0.833*	4	**0.892	4	**0.905	4	0.830**
5	0.737**	5	0.684**	5	0.922**	5	0.849**	5	0.757**
6	0.735**	6	0.841**	6	0.877**	6	0.793**		
7	0.871**								

Statistically significance at the level(0.01)

The table shows that the values of correlation coefficient among items, and the total degree of the domains to which the items belong are all at the level(0.01). This result indicates that the tool items are of correlative relationship which is statistically significant to the domain it belongs to. Credibility of the internal construction of the axis domains with total degree were verified by calculating Pearson correlation coefficient as table (2) shows.

Table(2) Pearson correlation coefficient for the domains and the total degree of the axis

	Domain	correlation coefficient
Professional learning community	Self development	0.765
	Professional development	0.654
	Collective participation	0.632
	Use of learning technology	0.907
	Skill of design and production	0.614

**Statisticaly significance at the level(0.01)

The table shows that the values of correlation coefficient of the domains of the study tool and the total degree of the domains are all statistically significant at the level(0.01), where the correlation coefficient is between (**0.614-**0.907) This result indicates that the tool items are of correlative relationship which shows that the domains are credible, and this permits the application of the tool to achieve the purpose of the study.

Stability of the tool

The stability of the tool was confirmed by applying test and retest.The internal consistency factor (Kronbach Alpha) was also calculated to ensure the stability of internal consistency, where the study tool was distributed to the sample the first time, and after two weeks , it was reapplied to the sample itself.The stability factor of the study axes was calculated and the total stability of the instrument was (0,84). Table 3 shows this.

Table (3) consistency factor of the study tool (Kronbach Alpha)

	Domain	Valueof Kronbach Alpha
Virtual professional learning	Self development	0.754
	Professional development	0.834
	Collective participation	0.825
	Use of learning technology	0.875
	Skill of design and production	0.885

The results in table (3) indicate that all the values of stability factor were between (0.754-0.885) which are acceptable for this study.

Correction and judgment standard:

For the purposes of interpreting the results of this study, the standard test was adopted, namely, the length of the category = the upper limit - the minimum /5 = 5-1/5 = 8/5 = 0.8

Very low	Low	Medium	High	Very high
1.801	1.80-2.60	2.60-3.40	3.40-4.20 -	4.20-5.00

:Procedures of conducting the study

:The researcher followed the following steps

1. Surveying related literatue and previou studies of virtual learning communities.
2. Developing the study tool bybenefitting from relevant previous studies.2.
3. Ascertaining credibility and stability of the study tool in accordance with the procedures of descriprive research.

4. Specifying the community and the sample of the study
5. Distributing the study tool to the study sample
6. Collecting data and information about the study sample and saving them in the computer.
7. Getting the study results based on its questions and objectives and processing the data statistically.

Statistical methods used:

The researcher used a range of statistical methods through the Statistical Program (SPSS). Cronbach's alpha factor has been used to demonstrate the stability and credibility of the study tool through Pearson correlation coefficient between the item and the total domain. Arithmetic mean and standard deviation were also used to identify the most important items represented by each area of study, which are related to the study axes.Besides, the T- test was used to find out the differences between the variables of the social type (gender)and school level. The single contrast analysis "One Way ANOVA" was also used to identify differences in scientific qualification and experiences.

Presenting and discussing the results of the study

The most prominent findings of the study were discussed as follows. The main question of the study was answered. Sub-questions were also asked about the role of PLCS in the professional development of teachers in the governorate of south AlBatina/Oman in light of online learning. The results were analyzed and discussed in light of the results of the previous studies.

Question 1: is about the role of PLCs in the professional development of teachers in south AlBatinagovernorate/Oman within the following study domains: self-development, professional development, group participation, use of education technology, anddesign and production skill. To answer this question, the arithmetic mean and standard deviations of the study sample responses were calculated within all the study domains. Table (4) shows this.

Table(4) Arithmetic mean and standard deviations of the role of PLCs in the professional development of teachers in South Al-Batina governorate/ Oman for all domains in a descending order.

Domain	Arithmetic average	standard deviation	The role
Use of education technology	3,92	0.42	High
Prosuction and design skill	3,90	0.42	high
Collective participation	3,83	0.44	High
Professional development	3,80	0.46	High

Self development	3,78	0.43	High
Total	3,85	0.27	High

Table (4) shows that the PLCs role at the total domains has an arithmetic mean of(3.85), and a standard deviation of (0.27) and a high role. The table also shows that the domain(using teaching technology) has an arithmetic mean of(3.92), and a standard deviation of(0.42). The domain self development has an arithmetic mean of(3.78), and a standard deviation of(0.43) and a high role for the role of virtual learning communities in improving teachers' performance.The researcher attributes these findings to the ministry's keenness to support teachers through the continuity offsetting courses and workshops and getting benefit from the experiences of developed countries, as well as providing technical support in the use of technology in the educational process, especially in light of the circumstances that the countries of the world are going through, and the discontinuity of the process of direct education.

Oman, like other countries, attempted to maintain the continuity of the educational process through advanced preparation to eliminate negative effects of Covid-19, and managed to overcome challenges of the educational process. The role of PLCS in improving teachers' professional skills is high because of the real application of the skills needed in teaching, as well as the ministry's direct support to teachers. The results of the study is compatible with those of Al-Sinani and Bani Ata(2020), which show that the role of PLCs in developing the planning skill is high. It does not agree with the results of Al-Masroori and others (2020) which indicated that the degree of the availability of requirements of applying the dimensions of PLCs in government schools in the Sultanate is medium; the same as that of Al-Dawood and Al-Jaroodi studies of(2019).

The following are the results of the statistical analysis of the study sub- questions for each domain of the study:

1. What is the role of PLCs in the professional development of teachers in South Al-Batinagovernorate/Oman in light of online learning in the domain of self development?

To answer this question, arithmetic mean and standard deviations of the study sample responses were calculated in the domain (self-development).Table (5) shows this.

Table (5) Arithmetic mean and standard deviations of the role of PLCs in the professional development of teachers in South Al-Batina governorate/ Oman (self development) in light of online learning in a descending order.

No.	Domain	Arithmetic mean	Standard deviation	Rank	Level
1	increasing skills of	3.91	0.85	2	High

No.	Domain	Arithmetic mean	Standard deviation	Rank	Level
	applying online teaching				
2	using new teaching methods by smart devices	3.87	0.83	6	High
3	PLCs enhanced the ability to work as one team	3.79	0.85	4	High
4	managing PLCs ffectively and achieving progress ambition	3.78	0.80	1	High
5	Enhancing the ability to talk freely in cases of one specialization	3.74	0.84	1	High
6	PLCs enhanced accessing the digital world	3.74	0.92	7	High
7	PLCs contributed to the increase of the abilityto participate positively in different activities	3.70	0.96	5	High
Total level		3.78	0.43		High

It appears through table (5) that the role of PLCs in the professional development of teachers in south Al-Batina governorate/Oman in light of online education in the domain of self-development at the total level is with an arithmetic mean of (3.78) and a standard deviation of (0.43), and in a high role. All items in the domain of (self-development) have a high role. Item (2), "increasing the skills of applying online learning in educational tasks", comes in first place with anarithmaticmeaan of (3.91), and a standard deviation of(0.85) and a high role. Item (5), which reads "PLCs contributed to increasing the ability to participate positively in all activities", iswith a arithmaticmeaan of (3.70) and a standard deviation of (0.96) comes in the last order and in a high role. The researcher attributes these findings to the constant attempts of teachers to improve themselves, and the efforts of the contributions of the Ministry of Education and their desire to follow up on all that is new to serve the educational environment, which contributed to improve teachers' professional performance through virtual learning communities. Moreover, the conditions experienced by teachers as a result of the Corona pandemic contributed significantly to their constant quest to develop professional skills.

2. What is the role of PLCs in the professional development of teachers in South Al-Batina governorate/Oman in light of online learning in the domain of professional development?

To answer this question, arithmetic mean and standard deviations of the study sample responses were calculated. Table (6) shows this.

Table(6) Arithmetic mean and standad deviation of the role of PLCs in the professional development of teachers in south Al-Batina governorate in light of online teaching in the domain of professional development in a descending order.

No.	Domain	Arithmetic mean	Standard deviation	Rank	Level
1.	Developing variable teaching strategies that fits the nature of electronic environment	3. 91	0.089	5	High
2.	Managing and sorting files	3.89	0.83	2	High
3.	Developing dependence on creative thinking in presentin courses	3.85	0.87	3	High
4.	Enhancing the level of using teaching techniques	3.84	0.86	4	High
5.	Cooperation of supervisors in using PLCs contributed in developing teachers' skills in learning	3.69	0.88	6	High
6.	PLCs contributed in the use of world samples in planning syllabi electronically	3.68	0.85	1	High
Total level		**3,80**	**0.46**		High

It appears through table (6) that the role of PLCs in the professional development of teachers in south Al-Batina governorate/Oman in light of online learning in the domain of professional development at the total level is with an arithmetic mean of (3.80) and a standard deviation of (0.46), and in a high role. All items in the domain of (professional development) have a high role. Item (5),"Developing variable and new teaching strategies which fit the nature of online learning", comes in the first rank and a high role. Item (1), "PLCs contributed to the use ofworld samples in the electronic planning of the syllabus", has an arithmetic mean of (3.68) and a standard deviation of (0.85) and in the last order with a high role.The researcher attributes these findings to thefact that trainingteacherts to use new teaching methods in the learning environment contributed positively to teachers' performance through the use of new methods and the possibility of accessing students anytime and every where.

3. What is the role of PLCs in the professional development of teachers in south Al-Batina governorate/ Oman in light of online teaching in the domain of collective participation?To

answer this question, arithmetic mean and standard deviation of the responses of the study sample in the domain of (collctive participation) were used.Table (7) shows this.

Table(7) Arithmetic mean and standad deviation of the role of PLCs in the professional development of teachers in south Al-Batina governorate in light of online teaching in the domain of (collectiveparticipation) in a descending order.

No.	Domain	Arithmetic mean	Standard deviation	Rank	Level
1	PLCs have enhanced the skill of scientific thinking in solving students' problems electronically	3.92	0.78	5	High
2	Cooperation between teachers has led to an increase in scientific knowledge among them within the same discipline	3.90	0.81	4	High
3	PLCs Contributed to raise awareness of modern scientific sources of electronic access to knowledge	3.84	0.84	1	High
4	Raising skills of issues related to the educational process	3.81	0.78	3	High
5	PLCs interact in discussing the difficulties of the educational process in a single discipline	3.79	0.79	6	High
6	Teachers' participation in electronic scientific conferences in the field of specialization	3.78	0.87		High
Total level		**3,83**	**0.44**		High

Table (7) shows that the role of PLCs on the overall level is in an arithmetic mean of (3.83) and a standard deviation of(0.44) and a high role. All the items in the domain of collective participation have a high role. Item (5), " PLCs enhanced scientific thinking skill in solving students' problems electronically", comes in the first rank, with an arithmetic mean of (3.92) and a standard deviation of (0.78) and a high role. Item (2), "teachers' participation in electronic

scientific conferences in the field of specialization", has an arithmetic mean of (3.78) and a standard deviation of(0.87). It is in the last order with a high role. The researcher ascribes these findings to the cooperation of teachers to overcome the difficulties that face the educational process, as well as their continuous attempts to get feedbacks, and participate in all conferences. All these things enhanced and improved their performance.

4. What is the role of PLCs in professional development of teachers in south Al-Batina governorate/ Oman in light of online teaching in the domain of using teaching technolog?

To answer this question, arithmetic mean and standard deviation of the responses of the study sample were used.Table (8) shows this

Table (8) Arithmetic mean and standad deviation of the role of PLCs in the professional development of teachers in south Al-Batina governorate in light of online teaching in the domain of (usingteaching technology) in a descending order.

No.	Domain	Arithmetic mean	Standard deviation	Rank	Level
1	Teaching with the help of computer	4.01	0.76	5	High
2	Enhancing ability to use e-learning tools in dealing with educational material	3.99	0.81	2	High
3	The ability to choose educational alternatives available online	3.93	0.77	1	High
4	Increasinge knowledge and skills in the use of educational techniques	3.92	0.77	3	High
5	Identifying the importance of employing PLCs in learning sciences	3.89	0.79	4	High
6	Increasingthe use of websites specialized in the development of virtual communities	3.84	0.75	6	High
Total level		**3,92**	**0.42**		High

It appears through table (8) that the role of PLCs in the professional development of teachers in south Al-Batina governorate/Oman in light of online education in the domain of(using teaching technology) at the total level is with an arithmetic mean of 3.92 and a standard deviation of

(0.42), and in a high role. All items in this domain have a high role. Item 5, comes in first place with anarithmaticmeaan of (4.01), and a standard deviation of (0.76) and a high role. Item (6), gets anarithmatic mean of (3.84) and a standard deviation of (0.75) and in the last order with a high role. The researcher attributes these findings to the fact that the world is moving towards the use of technologyin education. Thus, the expansion in the use of technology and the role of PLCs contributed positively to teachers' performance, and reflected a positive image. Besides, the development of teaching mechanisms and the possibility of reaching to students any time and everywhere have led to these results. Moreover, the educational environment and the availability of learning and teaching techniques have provided many references to make use of, to transfer from the theoretical aspect to real application.

5. What is the role of PLCs in professional development of teachers in south Al-Batina governorate/ Oman in light of online teaching in the domain of design and production skill?

To answer this question, arithmetic mean and standard deviation of the responses of the study sample of this domain.

Table(9) Arithmetic mean and standad deviation of the role of PLCs in the professional development of teachers in south Al-Batina governorate in light of online teaching in the domain of (design and production skills) in a descending order.

No.	Domain	Arithmetic mean	Standard deviation	Rank	Level
1	Increasing multimedia use in the development of educational material presentation	3.98	0.77	1	High
2	The ability to deal with sections and images to illustrate the educational material	3.97	0.78	2	High
3	Putting files, videos and links on the web page	3.89	0.79	5	High
4	The ability to develop appropriate educational programs according to the educational material	3.85	0.78	3	High
5	The ability to use colors to sort out the educational material	3.85	0.80		High
Total level		**3,90**	**0.42**		High

Table (9) indicates that the role of PLCs in the professional development of teachers in south Al-Batina governorate/Oman in light of online education in the domain of design and production skills at the total level is with an arithmetic mean of (3.90) and a standard deviation of (0.42), and in a high role. All items in this domain have a high role. Item (1) comes in the first place with anarithmatic mean of (3.98), and a standard deviation of (0.77) and a high role. Item (4)is with anarithmatic mean of (3.85) and a standard deviation of (0.80). It comes in the last order and in a high role. The researcher attributes these findings to the positive role of PLCs, and the development of teaching methods, which enhanced teachers' ability to design and produce materials related to the courses they teach.

Question 2: Are there statistically significant differences at the level of the significance ($\alpha \leq 0.05$) between average responses to the role of PLCs in the professional development of teachers in south Al-Batina governorate/Oman in light of online teaching that can be ascribed to the variables of gender, school type(gender), scientific qualification, and experience?

First: the social type(gender): Table (10) shows this.

Table (10) Test (T) to identify the differences between the averages of the sample responses of the study sample to the role of PLCs in the professional development of teachers in South Al-Batina governorate/Oman, in light of online education, which are attributed to the the variable of social type(gender).

Domain	Training	No	mean	Standard deviation	Degrees of freedom	value	Significance level
Self development	Male	64	3,79	0,41	177	0,189	0.850 insignificant
	Female	115	3,78	0,45			
Professional development	Male	64	3,80	0,45	177	0,039	0.969 insignificant
	Female	115	3,81	0,47			
Collective participation	Male	64	3,87	0,47	177	0,845	0.399 insignificant
	Female	115	3,81	0,42			
Use of teaching technology	Male	64	4,00	0,40	177	667,1	0.097 insignificant
	Female	115	3,88	0,43			
design and	Male	64	3,97	0,51	177	555,1	0.122

Domain	Training	No	mean	Standard deviation	Degrees of freedom	value	Significance level
production skills	Female	115	3,87	0,37			insignificant
Total scale	Male	64	3,89	0,25	177	328,1	0.186
	Female	115	3,83	0,28			insignificant

*α≥0.05Differences are significant at the significance level

Table (10) shows that there are no statisticallt significant differences at the significance (0.05) between the average of the sample responses to the role of PLCs in the professional development of teachers in south Al-Batina governorate/Oman in light of online education of this variable, where the T- value is(1,328), which has no statiscal significance at the level (0.186). The results also showed no differences that can be qattributed to this variable.   . The researcher attributes these findings to the fact that teachers of both sexes have the same experiences and conditions, and that the support provided by the Ministry of Education enabled teachers to overcome all difficulties. The results of this study show the same results of Al-Masroori's and others'studies (2020).

Second: school type

To show differences in this variable, the researcher use T-test between two independent averages. Table (11) shows this.

Table (11) T-test to identify differences between the average of the responses of the study sample concerning the role of PLCs in the professional development of teachers

Domain	Training	No.	mean	Standard deviation	Freedom degree	T-value	Significance level
Self development	Level 1	110	3,84	0,41	177	2,160	*032,0
	Level 2	69	3,69	0,45			Significant
Professional development	Level 1	110	3,81	0,43	177	0,272	0.786
	Level 2	69	3,79	0,51			Insignificant
Collective	Level 1	110	3,87	0,42	177	1,482	140,0

Domain	Training	No.	mean	Standard deviation	Freedom degree	T-value	Significance level
participation	Level 2	69	3,77	0,47			Insignificant
Use of education technology	Level 1	110	3,93	0,42	177	102,0	919,0
	Level 2	69	3,92	0,42			Insignificant
design and production skills	Level 1	110	3,90	0,42	177	028,1	978,0
	Level 2	69	3,92	0,44			Insignificant
Total scale	Level 1	110	3,90	0,26	177	304,1	194,0
	Level 2	69	3,90	0,28			Insignificant

*α≥0.05Differences are significant at the significance level of

Table (11) shows that there are no statisticallt significant differences at the significance(0.05) between the average of the sample responses to the role of PLCs in the professional development of teachers in south Al-Batina governorate/Oman in light of online education of this variable, where the T- value is(1,304), which has no statiscal significance at the level (0.194). However,the results showed differences that can be attributed to this variable, where T- value is(2,160), which is considered significant at the level(00,32) in favour of level 1, where level 1 group focuses on developing their professions more in the educational environment. The researcher attributes these findings to the fact that teachers of both level 1 and 2 have the same experiences and conditions, which they made use of in developing their educational environment. The results of this study shows different results from those in Hassan's study (2019),which shows that there are significant differences at the school level.Thisstudy also shows results similar to that of Al-Dawood's and Al-Jaroodi's(2019).

Third: Experience. Table (12) shows the results.

Table (12) Results of "One way Anova" analysis for the role Of PLCs in the development of teachers' performance in the study area.

Requirement	Source of diversity	Total of quarters	Degree of freedom	Quarters average	F-value	Significance level
Self development	among groups	0,031	3	0,010	0,052	0,984
	Inside groups	34,392	175	0,197		
	Total	34,422	178			

Professional development	among groups	0,153	3	0,051	0,230	0,875
	Inside groups	38,742	175	0,221		
	Total	38,895	178			
Collective participation	among groups	2,362	3	0,787	4,184	*0,007
	Inside groups	32,936	175	0,188		
	Total	35,298	178			
Use of education technology	among groups	0,444	3	0,148	0,814	0,488
	Inside groups	31,826	175	0,182		
	Total	32,270	178			
design and production skills	among groups	2,476	3	0,159	0,859	0,463
	Inside groups	32,341	175	0,185		
	Total	32,817	178			
Total scale	Between groups	0,153	3	0,051	0,679	0,566
	Inside groups	13,178	175	0,075		
	Total	13,331	178			

*α≥0.05statistically significant at the level of

Table (12) shows that there are no statisticall significant differences at the significance(0.05) of the role of PLCs in the professional development of teachers in south Al-Batina governorate/Oman in light of online education of this variable, where the F- value is(0.679), which has no statiscal significance at the level (0.566). However, the results showed differences in the variable of taking descision, where F value (6.662, which is insignificant at the level(0.002). The result also showed differences in the variable of collective participation, where F- value is(4.148), which is significant at the level(0.007) . To identify sources of these differences in the levels of the variable scientific qualification on the total domain, the researcher used Sheffe Test for the dimensional comparisons among averages. Table (13) shows this.

Table (13) Dimensiuonal comparisons between averages of the responses of the role of PLCs in the professional development of teachers in the study area in the variable of experience.

Experience	mean	5-1	10-6	15-11
5-1	3,83			
10-6	3,77	0.96		
15-11	3,98	0.55	0.080	
Above 16	3,68			*0.016

*α≥0.05Differences are significant at the significance level of

Table (13) shows that the sources of differences for the variable of experience arebetween the group 11-15 and those over 16 in favour of experienced group of 11-15, with arithmetic mean of(3.98) and astatistical significance of (0.016).

The researcher attributes these findings to the fact that the group of experience here has the opportunity to develop and participate in exchanging information concerning the educational process. Besides, they attempt to develop their professional skills through the use of PLCs, as their previous role was within traditional teaching,. Therefore, they found a technical opportunity that they have to benefit from to increase their knowledge and experience. The results do not agree with the stusdy of Al- Masroori and others (2020), but agrees with Hassan's study of (2019); Mohammad's study of(2019); and Demas's study of (2019).

Fourth: Qualification the researcher used" One way Anova" analysis, as is shown in table (14)

Table(14) Results of "One way Anova" analysis of the variable of qualification.

Requirement	Source of diversity	Total of quarters	Degree of freedom	Quarters average	F-value	Significance level
Self development	Between groups	0,455	2	0,228	1,180	0,310
	Inside groups	33,967	176	0,193		

	Total	34,422	178			
Professional development	Between groups	0,155	2	0,077	0,351	0,704
	Inside groups	38,740	176	0,220		
	Total	38,895	178			
Collective participation	Between groups	0,742	2	0,004	0,024	0,977
	Inside groups	31,528	176	0,186		
	Total	32,270	178			
Use of education technology	Between groups	0,742	2	0,371	2,072	0,129
	Inside groups	31,528	176	0,179		
	total	32,270	178			
design and production skills	Between groups	0,009	2	0,004	0,024	0,977
	Inside groups	32,809	176	0,186		
	total	32,817	178			
Total scale	Between groups	0,118	2	0,059	0,783	0,459
	Inside groups	13,214	176	0,075		
	total	13,331	178			

*α≥0.05Differences are significant at the significance level of

Table (14) shows that there are no statisticallt significant differences at the significance(0.05)in the average of the sample responses to the role of PLCs in the professional development of teachers in south Al-Batina governorate/Oman in light of online education in the total scale of this variable, where the F- value is(0.783), which has no statiscal significance at the level (0.459). The researcher attributes these findings to the fact that all teachers of different majors see that PLCs contributed to the development of their skills and the experiences they have gained through direct contact with modern teaching methods. The results of this study agrees with those of the study of Al-Masroori and Al-Mashaykhi(2019) and the study of Demas Abdulfattah,(2019).

3. RECOMMENDATIONS

Based on the previous findings, the researcher recommends the following:
1. The need to support teachers continuously to employ all of what is new to servethe educational environment and develop skills.
2. Providing an office in each educational institution to train the teachers
3. The need to switch from traditional education to online teaching to meet any future challenges.
4. Showing interest in the establishment and maintenance of early warning devices to detect crises that may occur in the educational establishment.

REFERENCES

Abdul Aziz, Safaa and Abdul Azim, Salama (2006). Classroom management and teacher development. Alexandria. The new university publishing house.

Al-Bouchi, Mohammed (2015). The reality of the professional development of the primary school teacher from the point of view of teachers in Al-aal governorate in light of the directions of the new teacher project. Unpublished master thesis. Faculty of Education. King Saud University.

Al-Fahid, Heila. (2013). Self-professional development of female principals of the community primary school in Riyadh: a proposed model. Unpublished master's thesis. Faculty of Education. King Saud University.

Al-Homeidhan, Pendri (2013). The reality of self-professional growth of the teachers in Illiteracy centers in Riyadh. Unpublished master's thesis. Faculty of Education. King Saud University.

Al-Hurr, Abdul Aziz (1430 Ah). Tools of the Future School for professional development. Riyadh. Arab Education Office for the Gulf States.

Al-Masri, Fahad al-Mashaihi, Saeed and Al-Ma'aqdiya, Aisha (2020). The degree to which the requirements for applying the dimensions of PLCs in public schools in Oman are met from the point of view of educational supervisors. Comprehensive interdisciplinary electronic magazine. 27(8)1-28.

Al-Osali, Leila (2019). The role of learning communities in the professional development of secondary school teachers in Qassim, Master's Thesis, Faculty of Education, Qassim University, Saudi Arabia.

Al-Qahtani, Ibtisam (2010). The reality of using virtual classes in the distance learning program from the point of view of faculty members at King Abdulaziz University in Jeddah. Unpublished master's thesis. Um al-Qura University.

Al-Qarni, Ali (2010). The reality of the use of educational internet resources and services by educational supervisors in the professional development of teachers inTaif. Unpublished master's thesis. Faculty of Education. Um al-Qura University. Mecca.

Al-Sinani, Shatha, and Bani Atta, Suad (2020). The role of PLCs in developing the planning skills of Islamic education teachers in Medina. The Arab Journal of Scientific Research. January 2, 222-237.

Al-Zayed, Zainab, Hajj, Omar, and Susan, Hussein (2016). The impact of online PLCs on the understanding of science teachers and teaching practices. Jordanian Journal of Educational Sciences. 12(3),pp,349362.

Bouglov, Siham (2017). Vertual community and value format: Reading in the effects of new media. Al-Hikma Magazine for Media Studies. Number (10) 145-179.

Bryk, A., Camburn, E., & Louis, K. (1999). Professional community in Chicago elementary schools: Facilitating factors and organizational consequences. Educational Administration Quarterly, 35(SUPPL.), 751-781.

Bustamate, C. & Moeller, A. (2015). Developing a learning community in online teacher professional development: A Qualitiative case study. A paper presented at the international conference on education and e-learning. Singapore 13-3- 2016.

Căciulan, D (2017). Social Networks Sites as a virtual community – Can SNSs replace the organic communities. Romanian Journal of Cognitive Behavioral Therapy and Hypnosis. 4(3), 1-7.

Caputa, W. (2017). The Role of Virtual Communities In The Process Of Creation of Knowledge Resources in A Company. Scientific Journal WSFiP. 2(2), 27-43.

Dasmas, Amina Abdel Fattah, Khaled (2019). The role of PLCs in improving the professional performance of chemistry teachers in schools of the South Jeddah Education Office. Journal of Scientific Research iEducation. 20(10)536-571.

Dawood, Manal bintSaad, al-Jaroudi, MajedaBint Ibrahim (2019). The degree of availability of elements of PLCs in public education schools in Al-Kharj governorate as an entry point for continuous improvement. Journal of Educational Science studies at the University of Jordan,46(1), 217-237.

Dettinger, K. &Brower, A. (2003). What is a learning community? About campus, EBSCO Publishing, PP. 15 – 21.

Dufour, Richard et al. (2019). Learning through work, ed2, Dammam: Educational Book House for publishing and distribution.

Fejlaoui, Y. (2009). Leadership d'opinion et communautésvirtuelles : un état de l'art; Centre de RechercheenGestion, Institutd'administration des Entreprises, Université des; Sciences Sociales de Toulouse1, Place Anatole France.

Halal, Shaaban (2014). PLCs as an entry point for educational goodness in educational institutions, Egypt: The Orchard Of Knowledge Library.

Hamidawi, Khudair (2017). Electronic-training for professional Development of Teachers. Egypt: Al-Sahab Publishing and Distribution House.

Harithi, Muhammad. (1430H). A proposed conception of the activation of the self-professional development of the teachers of the primary classes. Unpublished master's thesis. Faculty of Education. King Saud University.

Hassan, Maher (2019). Building PLCs as an entry point for academic performance in public education schools in Saudi Arabia. Journal of the Islamic University of Educational and Psychological Studies. 27(6),

High, l. (2019). Elementary principal's behaviors and collaborative PLCs, doctoral dissertation, Walden university, U.S.A.

Hord,M.(1997). PLCs of Continuous Inquiry and Improvement, South West Educational Development Laboratory, Austin, Texas , P. 24

Ibrahim, Hussam al-Din and Al-Marzouki, Ahmed (2018). Problems facing PLCs in Oman, Journal of Arts, Humanities and Sociology, (29)pp,306-337.

Keamy, R. &Selkrig, M. (2013). The effectiveness of protocols when preservie teachers engage in online collaborations: An Exporation. Australian Journal of Teacher education 38(2), 102-117.

Khamis, Mahmoud (2014). The concept of virtual learning environments. Education Technology: Egyptian Society for Education Technology, vol.24, no.4, pp,1-4

Louis, K. (2008). Creating and sustaining professional communities.Sustaining PLCs, 1, 41-57

Makhlouf, Asmaa (2015). PLCs as an entry point for the development of primary schools for the Jazan region in the light of the Model Oliver Hep and Hoffman, Journal of Education, 3 (165,) 356-340.

Mohamed Mounir Hijab(2004), media dictionary. Cairo: Dar al-Fajr.

Mohammed, Ashraf (2019). PLCs for the development of teacher intellectual capital. Scientific Journal.

Morrissey. M. (2000). PLCs: An ongoing exploration, Southwest educational development laboratory, P. 34

Sahar, Muhammad (2020). The educational role of friendship in virtual societies. Vol,26(2), pp,159-227.

Salem, Abdel Fattah (2018). The impact of virtual learning environment on the development of creative thinking skills in computer course and information technology on students of the

preparatory stage.   University Education Studies: Ain Shams University - University Education Development Center, vol,39,pp, 244-314.

Shihab, Lubna (2019). Comparison of professional learning community networks in Singapore and England to be used in Egyptian schools, Educational Journal, 65,pp, 639-729.

Sunaengsih, C. (2019). The Implementation of Professional Learning Community in Elementary Schools, Advances in Social sciences, Education and humanities, 400,2080-281

Taleb, Doaa (2020). A proposal for the development of PLCs in UNRWA schools in Gaza governorates. Unpublished master's thesis. Al-Aqsa University. Gaza

Valencia, H., Enríquez, J. , &Tigreros, M. (2018). Innovative Scenarios in the Teaching and Learning Process: A View from the Implementation of Virtual Platforms. English Language Teaching, 11(7), 131–141.

Wong, J.(2010). What makes a professional learning community possible? A case study of a Mathematics department in a junior secondary school in China, Asia Pacific Educ. Rev. No. 11, PP. 131 – 139.