Professional Development of Teachers in the Global Setting: A Systematic Review

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ABSTRACT

In view of the strong belief that the professional development of teachers plays an integral part in the achievement of learners and in providing quality education, this study analysed the professional development needs of teachers in the global context. Specifically, it described the professional development needs of teachers in the five components namely: the ability to conduct scientific research, professional teaching knowledge, technology use in education, content area knowledge and community service. The findings were, then, used as basis for human resource development planners in education to propose an intervention program suitable to the needs of teachers.

The method employed in gathering data of this study was a mixed method evaluation design such as the data mining approach and systematic literature review from researches conducted across countries related to the professional development of teachers. The researchers utilized the common components of the professional development needs of teachers present among the selected countries for analyses and for arriving at the description of their needs.

The researchers found out that most countries in the globe have their commonalities on the needs of teachers for professional development that would be responded appropriately in realizing the goals of education in the 21st century. Further shown in the study is the most prevailing need of teachers on technology use in education followed by the content area knowledge and the professional teaching knowledge. It is noteworthy to mention that the ability to conduct scientific research and community service got the lowest mean.

Based on this finding, the researchers proposed the development of a support system that would provide a regular intensive ICT training, allocation of fund for the procurement of ICT tools and equipment, and deployment of IT support staff to assist the teachers in the teaching-learning process. It was also recommended that further studies be conducted for an in-depth study of the professional development of teachers in global context to create a solid ground that would serve as basis for the development of a more responsive professional development program for teachers.

Keywords: Trainings and Professional Development, Components of Professional Development for teachers and development support system in education

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I. INTRODUCTION

Professional development in the context of education is an indispensable aspect in human resource management and development providing teachers tools and best

environment in furtherance of the development of their profession (Oitua, et.al. 2014). It is a life-long and continuous process in which teachers are expected to acquire, develop (Poskitt , 2005) and upgrade their knowledge and skills, master new skills and change their practices (Hien, 2009 as cited by Oitua, et.al., 2014).

As the contemporary world presents teachers with multifaceted challenges like technological changes and increasing global connectivity requiring them to be empathetic problem solvers capable of recognizing and weighing diverse perspectives (Boix Mansilla & Jackson, 2013; Reimers & Chung, 2016; Wagner et al., 2010), it is imperative and crucial that professional development instils teachers with the skills and dispositions needed to respond to the challenges of 21st century educational contexts (Sprott 2018).

For a professional development program to be successful, one factor to consider is the professional development needs of teachers. These needs include many different activities like those focusing on students with special needs and managing the classroom, designing curriculum and unit planning (Garet et al., 2001; Pehmer, Groschner, & Seidel, 2015); managing budgets and purchasing (Sağır & Memişoğlu, 2013); teaching strategy support, information on where to search for needed resources; and classroom management, and parental involvement (Evers et al. 2016). In addition, various studies also supported professional needs of teachers that are content-focused, research-oriented and technology-driven.

These led the researchers to undertake a study to explore what researches across nations say about the professional needs of teachers to gain in-depth understanding about Professional Development needs of teachers which could be an input or bases in designing PD programs for teachers.

II. OBJECTIVES

The purpose of this paper is to analyse the professional development needs of teachers in the global context through the application of scientific procedures.

Specifically, it sought to:

1. describe the professional development needs of teachers in terms of the following:

1.1 Skill in conducting Scientific Research;

1.2 Professional Teaching Knowledge;

1.3 Technology Use in Education;

1.4 Content Area Knowledge and

1.5 Community Service.

2. propose an intervention development support program to appropriately meet the preferred needs of professional development of teachers based on the findings.

III. DESIGN AND METHOD

This research employed a mixed method evaluation design. A Systematic Literature Review (SLR) was used to explore the professional development of teachers in the global setting. The review of literature included two phases: namely, the selection of bibliographic references and the filtering of articles. The selection of bibliographic references was an exploratory approach where the researchers used the search engines such as sciencedirect.com, t and f online.com, google scholar.com and

eric.com using key words like Resource Development program, teachers' training, professional development and others.

Another was the data mining approach because a significant number of articles of the previous researches were accessed from the same search engines that provided a large compendium of studies related to the study at hand. These articles were screened and filtered based on relevance. Relevant literature and studies were then selected while those considered irrelevant to the theme were discarded. Selected literature was then subjected for full reading to extract data for the study at hand.

Hence, this study is descriptive-analytical in nature because the researchers analysed and described the extracted data about the current professional development needs of teachers common in all selected countries. The professional needs in which all the selected countries have in common were presented in tabular forms. The mean scores of each country were arranged in descending order to describe the needs of the professional development of teachers.

IV. PRESENTATION OF DATA AND ANALYSIS

Professional development is an integral part of Human Resource development that provides an avenue for teachers to update their knowledge, sharpen their skills, and acquire new teaching techniques, all aimed at enhancing the quality of teaching and learning (Darling-Hammond et al. 2009 as cited by Rotermund, et. al., 2017).

First and foremost, one of the things that the Human Resource Development planners should do to help them on scientific basis in designing an effective program that will achieve realistic and well-defined objectives is to identify the Development needs in terms of trainings and professional development of teachers (Florian and Hegarty, 2004). Haesner et al. (2015) points out that identifying professional needs is essential for any successful training process. Pop and David (2009) also confirms training needs as the initial step of building and designing any successful training program.

Table 1-5 revealed the training and professional development needs of teachers that were common to the select countries. These needs were rated using the 5-point scale with an assigned hypothetical mean ranging from very much needed or very highly needed to least needed or needed very little.

On the Ability to Conduct Research

One of the development needs expressed by the teachers is the need to acquire the skill in conducting research which is the priori demand of every educational institution. This viewed need is presented in Table1.

Of these countries that perceived the need on possessing the skill to conduct the scientific research, the Kingdom of Saudi Arabia demonstrated that it was very highly needed as shown in Table 1 with a mean score of 4.34. According to Alshayea (2013), while the globe recognizes the importance of scientific research in national development and as a vehicle for progress, the state of scientific research in the Arab world is dismal at best. This can be attributed to shortage of funding and red tape, old regulations, and a lack of cooperation. The limited number of patents and scientific papers published is

very small compared to other nations such as the US, Korea and some European countries.

Table 1. **The Training and Professional Development Need of Teachers on the Ability to Conduct Scientific Research**

Country/State	Results (Mean)	Description
Saudi Arabia	4.34	Very Highly needed. This means that training the skills, principles, ethics and techniques of writing scientific research was the top most priority and need in this country.
Mexico	3.54	Much needed. This means that this component was strongly important because the respondents expressed their interest and willingness to engage in Research-Based Teaching but this same component obtained 1% rating from the teachers because they did not perceive themselves as researchers and they conceived research activities as difficult or unattainable.
Portugal	2.85	Somewhat needed. This research capacity was important but was not regarded as the top most professional needs in this country.
Turkey	2.79	Occasionally needed. This means that this component was moderately addressed thus, regarded important for self-development.
Belgium	2.53	Needed a little. This was regarded important but not their top most priority.
United Kingdom	2.41	Needed a little. This was not necessarily significant at the moment. Eventually not their top most priority.
Finland	2.32	Needed a little. This means that trainings for developing the skill in conducting research were met so this was not considered as the top most priority.
Average Mean	2.96	Somewhat Needed

Legend:
1.00 – 1.80 Least needed or needed very little or not at all
1.81 – 2.60 Less needed or needed a little
2.61 – 3.40 Somewhat Needed or Moderately Needed
3.41 – 4.20 Much Needed
4.21 – 5.00 Very Much Needed to the highest degree

Similarly, the respondents in Mexico perceived it as much needed in their teaching profession with a mean score of 3.54. This is due to the fact that the respondents were interested to engage on it however, they found themselves not capable of doing it. They considered it difficult and unattainable.

Whereas, the respondents in Turkey viewed this component for professional development as occasionally needed. In the study conducted by Büyükyavuz(2013), it was found out that majority of the Turkish teachers(72 %) do not conduct action research, which is regarded as a crucial activity within professional development.

Though the teachers believed in the merits and necessity of professional development, however, the heavy teaching load, crowded classrooms, lack of resources and guidance place the ongoing professional development pursuits behind the realities of the actual teaching practices thereby turning it into 'luxury' for the time being and for near future.

Generally, the respondents from the select European countries such as Portugal, Belgium, United Kingdom and Finland rated this area of professional development as somewhat needed and needed a little with mean scores ranging from 2.85, 2.53, 2.41 and 2.32. This could be deduced from the fact that these countries have good research practices (ALLEA, 2017).

On Professional Teaching Knowledge

An essential part of teachers' work is teaching. Teachers are expected to master content and discipline; construct, organize and manage classroom activities; choose the best pedagogical methods; and develop and evaluate their own work (Darling-Hammond, 2006; Darling-Hammond et al., 2009). Classrooms today are increasingly heterogeneous. When planning and carrying out teaching, students' different backgrounds and special needs have to be taken into account. (Livingston, 2014.)
Among the countries cited in Table 2, Saudi Arabia greatly felt the need for Professional

Teaching Knowledge rated as highly needed with a mean score of 4.17. This high rating of the aforesaid need could be construed from the fact that the 21st century learners are diverse, subsequently teachers needed to differentiate teaching and employed variety of strategies tailored fit to the needs of their learners.

This Professional Teaching Knowledge which can include differentiating one's teaching and modifying instruction to meet the needs of individual students and help students learn by making learning relevant was seen as challenging in all five countries. Although teacher education offers basic, theoretical knowledge about special and multicultural education, managing classroom activities may still be hard. Overall support for this component especially for novice teachers is of great importance.

As shown in the same table, this development need for teachers was less needed in the United Kingdom. This could be deduced from the study conducted by Harju, et.al, (2016) that if teacher education provided good competences, teachers 'needs might not be very high. Alternatively, if teachers are changing and new demands are emerging, more support is also needed.

Table 2 presents the need for Professional Teaching Knowledge which is considered important in the teaching profession.

Table 2. Development Need of Teachers on Professional Teaching Knowledge

Country/ State	Results	Description
Saudi Arabia	4.17	Much Needed. This confirms the need for training on planning, execution and use of teaching strategies and evaluation methods to a great extent.
Mexico	3.23	Somewhat Needed. This means that professional knowledge specifically teaching strategies and pedagogical approaches is perceived by respondents to cause an impact on the teaching-learning process.
Finland	2.92	Somewhat Needed. The means provisions for PD were definitely given in a limited manner hence respondents considered this component as one of the important professional learning needs.
Belgium	2.90	Somewhat Needed. This means that this is one of the important professional competences needed to be responded to some degrees.
Portugal	2.86	Somewhat needed. This confirms that the component is considered as one of important professional competences to be developed from among the teachers to some degrees.
Turkey	2.63	Occasionally Needed. This means that under the Professional Teaching Knowledge category, teachers reported that learning the new approaches in education, changing paradigms and educational systems, planning a social activity and providing guidance to prospective teachers were moderately or occasionally addressed.
United Kingdom	2.31	Needed a little. The respondents took this component as needed a little because PD programs and other types of trainings had met this need to a great extent. However, this component when ranked together with the common variables cited understudy was still considered as one of the important professional learning needs of this country.
Average Mean	3.00	Somewhat Needed

Legend:

1.00 – 1.80 Least needed or Needed very little or not at all

1.81 – 2.60 Less needed or Needed a little

2.61 – 3.40 Somewhat Needed or Moderately Needed

3.41 – 4.20 Much Needed

4.21 – 5.00 Very Much Needed to the highest degree

On Technology Use in Education

Assessing training needs of faculty members regarding the use of innovative technology and the way this is related to achieving total quality seems to be an interest of many researchers. There are a good number of researches that indicated the need for training on technology processes, use of internet, data display and presentation equipment and video conferencing. It is believed that effective teaching relies on employing innovative technology and opportunities for professional development. It was also construed that teachers feel satisfied about their teaching which creates interactive environment with students thru innovative technology.

This perceived need is presented in Table 3.

Table 3. Development Need of Teachers on Technology Use in Education

Country/ State	Results (Mean)	Description
Saudi Arabia	4.30	Very Much Needed. This confirms the importance of technological innovations and the use of multimedia related to teaching practice.
Mexico	4.25	Very Much Needed. This explains the teachers' interest in knowing more about instructional technology to strengthen their teaching and this is also due to the fact that students are skilled in using technology compared with Mexican teachers' digital abilities.
Finland	3.00	Somewhat needed. This shows that digital methods are put to use concentrating on devices but is not connected with pedagogy or even content.
Belgium	2.88	Somewhat needed. This confirms the need related to classroom pedagogy, such as support in instructional design, managing classroom interaction, readiness for media education
Portugal	2.82	Somewhat needed. Teachers felt they needed more support in working and in organizing new learning environments. This may reflect the changes schools are facing through increasing digitalization.
Turkey	2.62	Occasionally Needed. In this category, teachers reported regularly needing in service training on tablet and smart board usage, on preparing effective teaching materials with Flash and similar software and on preparing effective teaching material with MS Office software.
United Kingdom	2.32	Needed a little. This means that this component for professional development was thought of as needed to a little extent because provisions of PD programs had been provided to them.
Average Mean	3.17	Somewhat Needed

Legend:

1.00 – 1.80 Least needed or needed very little or not at all
1.81 – 2.60 Less needed or needed a little
2.61 – 3.40 Somewhat Needed or Moderately Needed

3.41 – 4.20 Much Needed
4.21 – 5.00 Very Much Needed to the highest degree

As demonstrated in Table 3, Saudi Arabia and Mexico extremely felt the need to embrace the digital transformation. Specifically in Saudi Arabia, such a need is in consonance with one of the main objectives for the Ministry of Education (MoE) in the National Transformation Programme (NTP), the kingdom's development plan to 2020 which is the continuation of a "shift to digital education in support of both teachers and students (https://oxford businessgroup.com).

Likewise, using technology in instructions was very highly needed with a mean score of 4.25 in Mexico. This explains the fact that students are skilful in the use of technology compared to Mexican teachers, this was possibly the cause as to why they were interested in knowing more about it especially in strengthening their teaching abilities. This explains further that the use of technology should be integrated in designing carefully a planned strategy and different techniques for teaching.to meet the learning needs, the EFL (English in foreign language) learning needs in particular (Valladares,etal.,2014).

Whereas, the rest of the countries rated this development need of teachers as somewhat needed and surprisingly needed a little in the United Kingdom. It was mentioned by the researchers that teacher education and pre-service teacher training were good and provided but did not fit the real work in schools. ICT was introduced primarily as a tool but there was no connection with pedagogy and content.

On Content Area Knowledge

Many studies (McBer, 2001; Burke, 2013) support that effective teachers do not maximize their teaching style to their level of knowledge. They are the ones who continually evaluate their teaching style and know how to improve their skills.

As shown in Table 4, Saudi Arabia and Mexico highly needed the development on knowledge of Content Area. This matched the study conducted by Alturki (2016) that teachers in Saudi Arabia decided to continue their education by studying Master's degrees abroad or inside the country to expose them to a variety of teaching methods they had not exposed to the Saudi's school system. The same study construed that the type of learning experiences needed for Saudi Arabian pre-service and in-service teachers are: Teaching skills and knowledge for Saudi teachers, the possibility of an inquiry approach in Saudi classrooms, and the need for on-going professional development for in-service Saudi teachers.

On another hand, the respondents in Mexico justified that degree and non-degree courses were the only professional development activities provided. These could be the reasons for the interest of teachers in knowing more about lesson planning, and the need to know about and experience other long-term knowledge-construction type of development practices such as mentoring, classroom observation and teaching networks and conferences.

On Content Area Knowledge

Many studies (McBer, 2001; Burke, 2013) support that effective teachers do not maximize their teaching style to their level of knowledge. They are the ones who continually evaluate their teaching style and know how to improve their skills.

Table 4. Development Need of Teachers on Content Area Knowledge

Country/ State	Results (Mean)	Description
Saudi Arabia	4.17	Much Needed. This means that teachers greatly need in areas related to teaching like planning, preparation, execution, learning resources and learning outputs.
Mexico	4.13	Much Needed. This confirms that this area is important because it strengthens the teaching ability of teachers
Portugal	2.84	Somewhat Needed. This means that mastering academic contents of the curriculum is considered as an important need.
Belgium	2.74	Somewhat Needed. This means that mastering academic contents of the curriculum is considered as an important need.
Turkey	2.58	Needed a little. This means that occasional in-service training on learning new topics in their subject area, developing and using learning materials and activities in their subject areas, and curriculum changes and reforms were provided for teachers.
Finland	2.51	Needed a little. This means that mastering academic contents of the curriculum is considered not really a felt need.
United Kingdom	2.16	Needed a little. This means that this variable is ranked the less in this country
Average Mean	3.02	Somewhat Needed

Legend:
1.00 – 1.80 Least needed or needed very little or not at all
1.81 – 2.60 Less needed or needed a little
2.61 – 3.40 Somewhat Needed or Moderately Needed
3.41 – 4.20 Much Needed
4.21 – 5.00 Very Much Needed to the highest degree

It is worth mentioning that in the Era of National Reforms whereby Turkish teachers have experienced many educational reforms and radical changes, the respondents rated this professional development need in curriculum change/reform, learning new topic in their subject area, and revising topics in their subject area as needed a little with a mean score of 2.58. These results conflict with the current literature, which reports that Turkish teachers do not feel competent about new curricular content knowledge (Elmas et al., 2014; Taneri & Engin-Demir, 2011).

Why do Turkish teachers not report needing to participate in such programs if they do not feel competent in teaching reformed curricula? One possible reason might

be that participating in too much compulsory and low quality training on the curricular and transition system changes has alienated teachers since they do not see the training programs on educational reforms as helpful (Oztaskin, 2010; Yalin, 2001). These results give key feedback that the teaching force sees little potential value in attending short in-service workshops that concentrate on developing stronger content knowledge, since content knowledge development takes a relatively long time and may expose professional weaknesses that teachers are reluctant to reveal.

Moreover, the European countries in this study considered this professional competence as somewhat needed to needed a little with a mean ranging from 2.84, 2.74, and 2.51 to 2.16. These results were affirmation of the fact that these countries have different systems of initial teacher education. For example, in Finland, all primary and secondary school teachers gain a master's degree when graduating as a teacher, whereas in Belgium (Flanders), most of the teachers gain a bachelor's degree. In addition, in the UK (England), teacher education is commonly organised around school-led training, whereas in the other countries, teacher education is often organised in universities. They also have organized mentoring systems that exist between schools.

On Development Need of Teachers on Community Service

Teachers' work is not only limited to the classroom. Nowadays, it is also increasingly expanded outside the class and school (Korhonen & Lavonen, 2014).

Table 5. Development Need of Teachers on Community Service

Country/State	Results (Mean)	Description
Saudi Arabia	4.22	Very much needed.
Portugal	2.84	Somewhat Needed
Belgium	2.74	Somewhat Needed
Finland	2.51	Less Needed
Turkey	2.24	Less Needed
United Kingdom	2.16	Less Needed
Average Mean	2.79	Somewhat Needed

Legend:
1.00 – 1.80 Least needed or needed very little or not at all
1.81 – 2.60 Less needed or needed a little
2.61 – 3.40 Somewhat Needed or Moderately Needed
3.41 – 4.20 Much Needed
4.21 – 5.00 Very Much Needed to the highest degree

Results in Table 5 showed that professional development in this component was very much needed in Saudi Arabia. These results match the findings of Xian (2014) such as : training on providing social consultations, employing research findings to serve community, staff participation with views, knowledge and experiences to serve community, improving university outputs to serve labour market needs, there is a gap between outcomes and labour market due to negligence of innovative technology, poor contribution of education in building social knowledge, empowering the relationship between the academic product and social needs.

Results also indicated that these countries felt they needed to develop either for working in society or working outside the classroom. It has been construed that as influential agents in society, teachers need to learn how to collaborate with different partners such as parents, colleagues and other societal partners (Niemi, 2014).

The table also showed that Turkey together with Finland and UK got the lowest mean for this component. In the case of Turkey, results of the Teaching and Learning International Survey (TALIS) have found that participation rate of Turkish teachers in PD activities is the lowest among all of the participating countries in the TALIS. One potential reason for lower participation rates among Turkish teachers might be the lack of formal enforcement of teacher participation in PD activities by the government, another reason is that teachers have life-long jobs in Turkey as a result, neither superintendents nor principals hold any formal power to compel teacher participation in PD activities. Consequently, teachers decide whether or not to participate in PD programs. Additionally, salary supplements are not available for teachers, and this is another potential reason for lower participation rates (Bayar, 2019).

Finland and UK have different education cultures peculiar of their own. School in Finland is the center of community that provides not just educational services but social services (Choi, 2014).

V. SUMMARY, FINDINGS AND RECOMMENDATIONS

This portion presents the summary of findings, conclusion and recommendation of the research. Table 6 below shows the summary of findings.

Table 6. Summary of Results on the Professional Development Needs of Teachers based on the selected countries

Needs of support for Professional Development of Teachers	Results (Average Mean)	Description
Technology Use in Education	3.17	Somewhat Needed
Content Area Knowledge	3.02	Somewhat Needed
Professional Teaching Knowledge	3.00	Somewhat Needed
Ability to Conduct Scientific Research	2.96	Somewhat Needed
Community Service	2.79	Somewhat Needed

The data extracted from researches in global context showed that the teachers' perception of their PD needs in terms of the identified parameters vary. It is evident, however, that the study in Saudi Arabia showed that in all parameters: skill in conducting scientific research, professional teaching knowledge, technology use in education, content area knowledge, and community service were with mean of 4.34, 4.17, 4.3, 4.17.and 4.22 respectively, correspondingly interpreted as very highly to highly needed. It could also be noted that only Mexico other than Saudi Arabia has come up with a mean of 4.25 and 4.13 for the use of technology and content area knowledge respectively. All other researches from other select countries reflected a mean ranging from 2. 2 to 3.5 in all parameters interpreted as needed a little to

somewhat needed. Another observable data is from the United Kingdom rating all parameters as needed a little.

According to the study by Altun (2011) with the title, "INSET and Professional Development for Teachers: A Comparative Study of British and Turkish Cases (2011) that in the UK, all teachers have a professional duty to review their teaching methods and work programs and participate in arrangements for their CPD, it has a more advanced system for professional development which is addressed by many institutions either provided within the school, or at a LEAs teacher centre, at a HEI (higher education institution) and a further education institution or at an independent training and training centre.

The summary of results on the professional needs of teachers showed an over-all mean ranging from 2.79 to 3.17 interpreted as somewhat needed. As reflected in the summary, technology use in education got the highest mean of 3.17, followed by the content area knowledge of 3.02 and the professional teaching knowledge of 3.00. Ability to conduct scientific research and community service got the lowest mean of 2.96 and 2.79 respectively.

As evidently shown on the data provided above, the use of technology in education appears to be the highest need of teachers. This poses a question since most of the countries included in the research are considered highly developed nations. Mulhim (2014) paper can provide an answer to this inquiry. Through a review of a number of studies from different parts of the world paying greater attention to Saudi Arabia, he reported some of the reasons behind the low use of Information and Communication Technology (ICT) by teachers. His review of literature revealed a number of factors that hinder teachers' use of ICT.

Three most prevailing and most mentioned factors in the literature visited were lack of access to technology, lack of training and lack of time. Another study that can impart light to the question is that of Salehi and Salehi (2012). Their paper investigated the teachers' perceptions of the barriers and challenges preventing teachers to integrate ICT in the classroom. They stated that the integration of information and communication technology (ICT) in teaching and learning provides more opportunities for teachers and students to work better in an information age. But this is hindered by some factors that may discourage teachers to integrate ICT in the classroom and prevent them to introduce supporting materials through ICT usage.

The findings of their research indicated that although teachers had a strong desire to use ICT in the classroom, they were prevented by some barriers most major of which were insufficient technical supports at schools and little access to Internet and ICT. Also, the shortage of class time was another significant barrier discouraging teachers to use ICT into the classroom as revealed in the descriptive analysis of the results.

The result of this study both affirms and contradicts the findings of Badri, et.al (2016) on their study entitled "Perception of Teachers' Professional Development Needs, Impacts, and Barriers: The Abu Dhabi Case". Like the current study, a sizeable proportion of the teacher respondents frequently rated areas of high development needs are new technologies in the workplace, and information and communication technology (ICT) skills for teaching. However, as oppose to the study at hand, "knowledge and understanding of subject field(s)" and "knowledge of the curriculum." received the lowest

scores. These two can be equated with content area knowledge which is second in rank in the current study.

Tulu's (2019) study entitled "The practice and challenges of school-based teachers' continuous professional development: A case of Government Secondary Schools of Hawassa City in Ethiopia" also presents an opposing view relative to the teachers' involvement in research. If in the current study, ability to conduct scientific research ranked second from the lowest, Tulu's. study revealed that action research empowers teachers by increasing the individual classroom instructional practices, improved students learning outcomes, commitment to work, supportive workplace and effective school leadership Aga (2017).

In careful consideration of the findings above both supported and contradicted by literature, the researchers arrived at a strong contention that a more rigorous study be conducted in assessing the professional needs of teachers across nations as basis for the furtherance and intensification of the professional development programs for teachers. As teachers are considered as knowledge workers by some scholars, it is imperative that they continuously seek for the enhancement and development of new knowledge and skills to ensure the quality of instruction provided and to address the varying and changing needs of their students.

Involving the teachers in planning and in designing PD program will also pave for a more responsive and successful professional development programs and initiative. Teachers, administrators and legislators can work hand-in-hand in the creation and implementation of a mechanism or system that will address the real needs of teachers.

Development Support for Teachers

Based on the findings, the most prevailing need of teachers is technology in education. As supported by rich literature, technology particularly ICT (Information Communication Technology) has the potential to increase access to education and improve its relevance and quality (Raja & Nagasubramani, 2018). Tinio (2002) also asserted that ICT has a tremendous impact on education in terms of acquisition and absorption of knowledge to both teachers and students. Also Zhang (2013) as cited by Ghavifekr & Rosdy (2015) found out in his study the Internet Use in ELT Teaching and Learning in Northwest China and the positive attitude of teachers regarding the use of internet in teaching and learning.

Based on the foregoing, the researchers believe that the most effective support that universities and the government as whole can provide to the teachers are:

1. The institution of a professional development program geared at providing the teachers with a regular intensive training on the use of technology in the teaching learning process;
2. The allocation for the purchase of ICT facilities for instruction purposes. ICT tools and equipment will prepare an active learning environment that is more effective and interesting for students and teachers alike (Ghavifekr & Rosdy, 2015);
3. And the deployment of a technical staff that will assist teachers to address technical problems.

These would constitute a more inclusive measure to address the technology use in education need of teachers. Williams (2000) has also raised the same recommendation when results of his study showed that most teachers in Scotland are still on the entry point to the Apple Classroom of Tomorrow (ACOT) model (Dwyer, et. al. 1991). He believed training alone is unlikely to be effective in the development of ICT skills and knowledge and enhanced use of ICT in the classroom. He proposed a more holistic approach comprising intensive training, ready access to ICT and on-going support and advice to encourage progression beyond formal training.

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