Framework for Analyzing Secondary Teacher Education Programs

Adula Bekele Hunde [a]*, Giuseppe Tacconi [b]

[a]*University of Verona, Lung. Porta Vittoria, 41 Verona,37129, Italy*
[b]*Giuseppe Tacconi,Lung. Porta Vittoria, 41 Verona, 37129, Italy*
[a]*adulabekele.hunde@univr.it*
[b] *giuseppe.tacconi@univr.it*

Abstract

This article aimed to set framework for conducting comparative study on secondary teacher education programs with the intention of shedding light on areas worth the study to the end of sharing good practices across the contexts. To this end, the study made use of literatures produced so far on outstanding teacher education programs. In addition, the researchers own experiential knowledge on teacher education of different contexts used as an asset. Finally, the study came up with ten thematic areas as a framework for conducting holistic analysis of teacher education programs. Specific points deserve special focus in relation to each thematic areas were also outlined.

Keywords: teacher education; comparative study; secondary teacher educations

1. Introduction

Cultivating young generation with necessary competences that they will use to develop potential that may allow them to become productive member of a workforce is shouldered on the profession of teaching[1]. The profession use provision of quality education as a means to discharge its responsibility of ensuring that the upcoming generation is endowed with necessary competences. Therefore, if we agreed that quality education is a tool for enhancing the goal of teaching profession, the next issue is pinning to where, how and with whom to deal in order to escalate the quality of education.

----

* Corresponding author.

E-mail address: adulabekele.hunde@univr.it.

This argument takes us to consider the starting point of learning teaching profession. Tracing back to the beginning point is useful to clear the ground otherwise there is possibility of having problems circulating whereby people of different groups pointing to one another for a wrong education they may encounter. So, the answer is very clear that teacher education is the place where people start learning teaching profession.

Countries which are on the top of school performance index like Singapore, Finland, the Netherlands, Germany, France and USA are those who have a good ground of teacher education [2]. It is for the same reason that at this moment teacher education is moving higher to the political agenda of European Union member states [1].

In the process of teacher preparation, taking a lesson from one another would enable institutions to go ahead with preparing future teachers within a range of local and global directions. It is clear that learning of good practices from one another is based on comparative study. For the success of comparison, there should be common ground based on which two or more cases can be compared [3]. Thus, laying detail structure and points to be considered within a case will amplify the effort of sharing good practices.

It is a public knowledge that tremendous studies have been published on primary education and teacher education for primary schools. However, the literatures on secondary education and the corresponding teacher education are scant. It is undeniable that the investment in turn is high in primary education compared to any level of education. Again UN Convention resolution *44/25 of 20 November 1989, article 28, number 1a* forces the member states to make primary education compulsory and available free to all children. These and related factors make mobilization of resources easy for research on primary school related education.

However, secondary school education is also important and should not be undermined as it is a gate way to higher education. It is at secondary school where students expected to be equipped with generic knowledge and skills that they would successfully use at upper level of education and training. In addition, neglecting professional development of secondary school teachers made teachers unsuccessful in their work, which leads them to hate their profession, and push them in search of alternative job. This situation may not only influence learning of students but also imprints negative image about teaching profession in their mind. If students hold from the beginning a negative impression about teaching job, it is unthinkable to attract outstanding students to the system. Thus, teaching profession may be appeared as the least choice for such students when they enter into higher education. For this matter, we believe that secondary teachers education deserve critical attention.

Thus, the article bears two main purposes. The first is contributing to international literatures on the development of secondary teacher education. The second, the main purpose, is framing components that form successful teacher education program along specific questions to be considered in the process of comparison.

2. Methods

We didn't collect any primary or secondary data systematically for the purpose of this article. We framed the study on our own professional experiences and reading of research reports on outstanding teacher education programs. We have been working as teacher educator in different contexts. So we do have diverse experiences.

At the same time, we have ongoing comparative research project on practices of expert teacher educators. Consequently, first we identified thematic areas that believed to influence preparation of teachers from our own professional experiences and preliminary reading of literatures. Then, we consulted in-depth international literatures on successful teacher education programs in order to figure out how they come out best; what they have been doing in relation to each theme. Then, these factors presented finally as a framework for analyzing teacher education program for the sake of drawing formative lessons from one another.

3. The themes: areas to be considered

The following themes are considered playing crucial role in the effort of preparing quality teachers. For this reason, discussion pertinent to how they could influence teachers' preparation and particular aspect of those themes that need to be focused on as a focal point in the process of analyzing programs with the plan to share good practices are presented in this section.

3.1. Education system in action

The first question expected to come to mind while thinking about teachers' preparation is the kind of job they are expected to carry out at school. This directly addresses the education system of the country. It is obvious that teacher education is a tool for implementing educational reform. This is so since their task is to prepare teachers who play the role of agent in translating the reform needed into classroom instruction. For this reason, the author indicated in[4] describes teachers as not only immediate object of educational reform but also as a lead *agent* in implementing the change in hand. As a result, teacher education program designed taking into consideration where and what future teachers will be expected to do. If this is not the case, the teacher education practices and school errands fall apart, then new teachers tend to perceive their preparation as useless. For this reason, teacher education programs are often seen striving to mitigate the limitation by strongly aligning their practices with the ongoing education system. This implies that, understanding of the ongoing education system is important for learning the nature of the teacher education program in focus.

3.2. History of secondary teacher education

Considering history of secondary teacher education facilitates understanding of the current situation in two ways. In the first case, even if structural change is made in the system, substantive elements continue to perpetuate in the new one.Authors stated in[5]echoed in their visits of secondary schools of Ethiopia the remark made by one of their teacher educator interviewee regarding the great influence of traditional education system on the current practice. Their interviewee said: '*unless you understand the traditional education of Ethiopia, you can't understand the modern education*' [5:4]Then, they confirmed their interviewee's point from their school visits and concluded that: "*the practice of teaching in them [secondary schools] had considerable resemblance with the practices in traditional education*" [5:4].The second point takes us to the essence and function of historical developments. Why do we need to study history specifically in the context of education? Drawing on the assertion of Pelikan (1984), who said: ' *…wise understanding of our history is the best starting point when planning for the future*', G. Rossiter[6]articulatesthat the present educational issues can be well understood from

the view of formative influences that have shaped them. For that matter, we belief that giving brief account of historical development of teacher education programs being compared will lead to a good understanding of the historical forces behind the current practices.

3.3. Regards for teachers and teaching profession

The other important factor for the success of teacher education of any level is the status teaching profession has hold in the society. If community's respect and attitude to the teaching profession declines, teachers themselves don't believe that they are highly valued in the community even if they may attach much value to their work [7]. Pinning to the fact that teachers in many countries are no more maintaining the elevated status they used to enjoy, [8] synthesized the short and long detrimental effect of the lowering professional status of teaching on the future generation as follow:

If teachers are not respected in the society, children won't listen to them in class, parents won't reinforce messages that are coming from the school, and the most talented graduates will continues to disregard teaching as a profession.Over time, this declining respect for teachers will weaken teaching, weaken learning, damage the learning opportunities for millions and ultimately weakens society around the world"[8:3].

In reverse, if teaching profession has high prestige and respect in the society, it is possible to attract the best and brilliant graduates and retain them as well in teaching job. The 2013 Teacher Status Index shows that countries where teaching is among the most sought professions are characterized by high teacher qualification, high competition to win a place, and high school achievement [8]. There are different factors associated with the social stands of teachers and teaching profession in society, which are directly or indirectly linked to the payment scale compared to other competing professions, and the quality of service they offered. For that reason, countries that are on the top position in school achievements are seen taking constructive measures in order to retain the good stand of teaching profession. For example, salary scale arrangement, clear and visualized teaching career development and strengthening learning community practice where teachers continue to learn from each other are exercised in The Netherlands [7]. Singapore has also been taking similar measures to increase the prestige of teaching occupation: raising initial salary above the other competing professions, offering employment opportunities from the day of their registration in teacher education, and fridge benefits like funds for buying laptops and other educational materials [9]. The high prestige of teaching occupation in Finland is attributed to other factors than raising the initial salary of teachers.The author indicated in[10]unpacksthree driving forces for the success of teaching profession in Finland. In the first case, teachers' workplace allows them to fulfil their moral missions. They know that they work for the betterment of human being, to keep the promise of their profession from the bottom of their heart than working as a result of externally regulated phenomenon. Second, as top students are recruited for teacher education, the teacher education curriculum is more demanding; hence graduates get prepared in advance way than other parallel programs in the university. As a result, graduates can also apply for other job or directly join PhD study. Lastly, even though salary is not the main reason for finish to apply for teaching occupation, the existence of career structure of teaching that allow them to climb the salary ladder as their teaching experience grow has also scaffolding the prestige of teaching status.

3.4. Policy directives

Any teacher education program needs legislative base; which is a frame of reference for further development, its implementation and monitoring activities. The goal of teacher education and the way of ensuring achievement of the goals need to be implied in the policy document. Therefore, having standards/qualification requirements that tied up different phases and components of the program has crucial role in leading teacher preparation to the desired direction [11]. Thus, success of teacher education program depends on the commitment a government shows towards improvement of teachers' preparation. This is reflected in the provision of appropriate legal ground for teacher education in addition to the allocation of resources needed for the implementation. The renowned author in the area of teacher education, indicated in [12], put forward the role of government in strengthening teaching stating that absence of political will and favorable condition for teaching may lead the great nation to see herself the modern day equivalent of the fall of Rome.

3.5. Structure of the teacher education program

Structure of teacher education program can be seen in two different ways: the position of teacher education program within the University and the model of the program.

So, to begin with the first, the position of teacher education program within a university plays crucial role on the identity of teacher educators. Identity and commitment of teacher educators greatly influence their effort. Teacher educators who identified themselves as teacher of teachers tend to be more committed to the teaching profession than those who are coming to teach as a part-time job. These teachers who defined themselves as teachers of teachers are fulltime workers in the college or faculty of education. Of course they have two roles which are supportive to one another: producing of knowledge on education, teaching and learning; andteaching of teachers [1]. However, this is possible when teacher education program is positioned in similar status with other sisterly programs in a university. Having independent organ for training of teachers is an indication for the professionalization of teaching. And the professionalization of teaching in turn helps to create nexus between research and training [13]. This is so since those experts who identified themselves as teacher educator for secondary school could also expected to conduct research in the same area. Therefore, having teacher education program with its staff being recognized as full-fledged teaching unit parallel to other program in a university is one of the indicatives for having successful teacher education program.

Regarding modality of teacher education program, teacher education traditionally is structured in two ways: the concurrent and the consecutive (add-on) model. In the concurrent model student teachers get prepared to teach by taking professional courses along the general education-discipline courses. Whereas the consecutive model students study first discipline content and earn bachelor or master's degree, then join teacher education program for certification to teach. Empirical research shows that the most important thing is not the question of which modality is being used but the adequacy of time for learning of the discipline contents, pedagogical preparation and carry out a longer school-based clinical practices[11]. For the same reason, the traditional concurrent four year-teacher education program is extended to five-year program in USA. As secondary education is organized based on specific content specialization, teachers need to have deep understanding of the subject-matter content.

As a result, outstanding secondary teacher education programs have been seen lifting up the entry requirement to teacher education to master's degree in discipline subject-matter in the case of France, Great Britain, The Netherlands and some programs in the USA or elongating the duration of training programs in the case of concurrent model, for example, five years in Singapore and Finland and some programs in the USA that provided dual degrees (bachelor, Master's degree) with teaching certification.

In general, a growing body of literatures from USA shows that the traditional routes to initial teacher preparation program, either consecutive or concurrent model that are consisting of university-based coursework and supervised pre-service practice, have no inherent problem on the quality of teachers they are preparing [14]–[16]. Rather, the problem is associated with the alternative route to teacher education programs that start to appear in the field of teacher education in response to the foreseen limitations of the traditional routes. According to author indicated in[14], the alternative route was required since the traditional models are claimed to be ineffective in preparing teachers who can competently deal with students coming from diverse socio-economic, educational and language backgrounds. Besides, there is an argument that the rigorous qualification requirement to teacher certification is inhibiting highly motivated and caliber individuals to enter the teaching career. As a result, alternative routes that utilized online learning, short summer courses on pedagogical issues have been tried as a proof that bright, committed individuals can teach successfully without formal teacher training. Thus, for the program named *Teach for America,* graduates from selective universities, many of whom are top performers recruited and provided with a few weeks of training before they begin teaching. However, empirical study conducted by [15] showed that the uncertified *Teach for America* recruits were significantly less effective than certified teachers; performed almost similar to other uncertified teachers with comparable experiences in similar settings. Besides, *Teach for America* recruits who became certified after two or three years showed similar effect on students' achievement with other certified teachers of comparable experiences. However, at that moment 2/3 of them were already quitted teaching job. In general, attrition rate is high for teachers who didn't go through proper initial teacher training. Pooling on intensive literatures, [16] noted that beginning teachers who lack professional training are about twice as likely to leave teaching profession in their first year compared to those who have had formal teacher preparation. This implies that rigorous initial teacher preparation program is imperative even for the bright young recruits if they wanted to be effective and retained in teaching profession.

3.6. Selection of student teachers

A growing body of literatures shows that almost half of school achievement interpreted in terms of what students brought to the school, being followed by the influence attributed to the teachers they face [17,18], hence there is no exception for teacher education program that the entrants' prior knowledge, skill and disposition influence their preparation to become a teacher. As a result, Haberman [19] underscores that selection has significant impact on having star teachers who will uplift achievements of students in desperate urban areas. Hence, he goes on saying that anybody who wants to be a teacher must not leniently allowed going through a teacher education program. Rather, applicants who have the knowledge, skills and predispositions to deal with learning of all students with ever increasing diversity should be screened for teacher preparation.

Internationally recognized teacher education programs are recruiting student teachers using different considerations. In the situation where teaching profession is highly regarded, for example China [8], Singapore [9], Finland[10], [20] and outstanding teacher programs in USA [11], there is enormous applicants, hence picking only the best among the pool of applicant is possible. In all the cases, selection of applicants targets on:

- attracting candidates with sound contents and other related knowledge
- absorbing candidates with strong interest and dedicated to teaching

To raise some practical experiences, in Singapore, screening of candidates is taken place at two levels where each of the above targets treated one after the other. First applicants are sorted out according to their academic achievement and educational background. Then, an intensive interview will take place by school principal and staff from Teacher Education Institute. The interview intended to dig out the communication skills, interest in teaching, goals and aspiration as well as willingness to learn. More importantly, the interview is meant to identify the candidate with strong passion for teaching and sense of making a difference.

In a nutshell, having a system by which programs recruits candidates and rigorousness of the procedures in selecting entrants with the required general academic, and contents knowledge along the strong and interest and dedication to become teachers are indicators for the successful teacher education program claiming production of outstanding tomorrow teachers. Therefore, this has to be one of framework based on which teachers' education should be assessed for their appropriateness.

3.7. Curriculum and its organization

The other important component of teacher education program is the contents to be learned. Contents of a teacher education depend on what the would-be teachers are expected to do in school. Hence, it is not a must to find similar contents across programs as they are based on the pressing needs of schools for which teacher education works. However, there are points which seem cross-cutting hence deserve attention across programs for the betterment of teacher's preparation for the complex world of teaching. According to Darling-Hammond[11:303]there are three knowledge bases of teaching, which comprises general knowledge, skills and attitudes necessary for teaching that teacher education expected to embark on

a. *Knowledge of learners and how they learn and develop within a social context.* Like any profession, teaching is service of students. Therefore, in order to service students learn effectively, teachers need to know how students learn, and what various students need in order to learn effectively. They need to include this knowledge in their teaching and curriculum construction. Therefore, teachers who don't have deep understanding about how student learn and how different people learn differently, lack the foundation that can help them to figure out what to do when a given technique or text doesn't fit to the learning of all students. According to Darling-Hammond, preparing teachers without stressing on the knowledge of learners and how they learn and develop is like training doctors in the techniques of surgery without adequate knowledge of anatomy and physiology.

b. *Understanding of subject matter and curriculum goals.* Teachers can teach successfully if they

have deep understanding of the subject matters and skills to be taught to school students. This understanding has to be in line with the disciplinary demands-the nature of knowledge and skills expected to be learned, student needs and educational goals set for the target teaching class.

c.   *Understanding of and skills for teaching.* This includes content pedagogical knowledge, knowledge for teaching diverse learners, assessment knowledge and knowledge for classroom management.

The programs studied by Darling-Hammond [11] differ in locality, and program design but all of them have a curriculum grounded on the knowledge of child and adolescent development, learning, social context, and subject matter pedagogy taught in the context of practice. The above analysis in short shows that the knowledge base of teaching is the function of the consistent interaction among: content, context and pedagogy. Teaching, like any other profession is non routine. Thus, teachers are expected to use methods flexibility in the way students learning of content can be maximized. This is what Shulman[21] called *Pedagogical Content Knowledge (PCK)*. According to Shulman, PCK represents *"blending of contents and pedagogy into an understanding of how particular topics, problems, or issues are organized, represented, and adapted to the diverse interest and abilities of learners and presented for instruction"* [21:8].

However, knowledge base of teaching in 21st century goes beyond requirement of the three knowledge domains mentioned. Now a days, world is characterized by the booming of new technologies that are primarily digital, such as computers, educational games, internet and numerous application supported by it [22]. According to the authors, this advent of new technologies has dramatically changed the routines and practices of human work. This situation demands European Parliament to recommend digital competences for the nations of the member states as one strategy for equipping generation with lifelong learning skills [23]. This, in the first case requires new teachers to learn the operation of ICT for their own personal and professional development and then, learn how to apply them to teaching. As a result, [22] explicitly explained that knowledge of technology is an important aspect of overall teacher knowledge. Finally, [24], [25]joined Mishra and Koehler in stating that knowledge about technology should not be treated as context free, rather good teaching requires understanding of technology in relation to the content and pedagogy where all of them practiced in context. As a result, they extended the PCK model of teaching knowledge developed by Shulman to TPCK (Technological Pedagogical Content Knowledge). Therefore, TPCK is an important aspect of the knowledge base of teaching.

Having bunch of courses alone doesn't qualify teacher education as the most wanted program. Careful design and sequencing of courses in the way the organization leads a set of courses creates a spiral curriculum that enables repeated consideration of teaching issues at higher level of understanding throughout the program is the way forward [see 1:52]. In addition, the different course works and phases of training need to be symmetrically synchronized in the way concepts and skills learned in foundation courses tend to be used in the content area methods, and where all of them put in action in the extended supervised clinical practices arranged in school settings. Moreover, these all practices need to be connected to school curriculum and practices. Authors indicated in [26] added that teacher education program consists of a collection of separate courses in which theory is presented without much connection to practice, risks irrelevance to the everyday activities in schools. As a result, they went on mentioning that such teacher education programs become rather counterproductive to

teachers' learning. The reason is that new teachers coming out of these programs face complex problems during their first year of school teaching for which they didn't prepare well as what they learned in teacher education program didn't match to what is being demanded in school setting. Hence, they experience *reality-shock*. Then, this *reality-shock* makes them question the usefulness and applicability of what they had been learning in teacher education program. Then, the *reality-shock* experiences lead them to experience *wash-out effect*. Finally, they turn their face to the traditional way of dealing with teaching issue.

3.8. Process of teacher education

By process, in this context, we meant how and with whom the designed teacher education program is translated into action. This calls for exploration of the expertise and commitment of teacher educators and pedagogies they used in the attempt of educating student teachers.

Teacher educators

Teacher educators are linchpin in the process of preparing quality teachers. However, they could do so if they themselves have solid practical teaching experiences, good teaching competences and high academic standards [1]. For that matter, the Ministers of the European Members States agreed on the viability of having study on the selection, recruitment, and training of teacher educators. This is a subtle response for the call by [27]who eloquently expressed the need for having more local and international policies that support the developments of what teacher educators should know and do in order to prepare teachers for the ever complex demands of 21st century teaching.

As can be understood from the above description, like for student teachers, all people who want to train teacher educators should not be allowed to do so if preparing effective and efficient teachers who can deal with the complex school diverse is needed. Like that of student teachers, they have to be outsmarting in their subject matter. As Bain [28:15]noted, *without exception outstanding teachers know their subjects extremely well*. In addition, expert teacher educators need to have adequate pedagogical knowledge, skills and disposition to teach successfully. Finally, like for student teachers, teacher educators need to have the interest and commitment to be teacher educator. To this end, having independent organ that can support, and certify teacher educators makes the process of securing expert teacher educator at ease.

Pedagogies of teacher education

The other point influence greatly the preparation of teachers is the teaching practices utilized in the program. The innovative and well-coordinated curriculum of teacher education program can achieve what it supposed to achieve if pedagogies responsive to the need on the ground is used. In their review of limitations in traditional theory-dominated type of teacher education, authors indicated in[26]point out that new conception of teaching and learning like constructive views of learning are being taught in the same approach traditional concepts being taught. In this circumstance, the experience of the *reality-shock* and subsequently *wash-out effect* of the learned principles in teacher education program is inevitable. For this, they stressed that changing the curriculum of teacher education alone is not adequate unless the circle of traditionally trained teachers who teach in a

traditional manner is getting broken.

Similarly, drawing on literatures, L. Darling-Hammond [16] postulates three key-problems pertaining to learning to teach that could perpetuate with trainees and impair their teaching effectiveness unless intervention with proper pedagogies is done in time.

A. *Problem of apprenticeship observation*. It is learning of teaching that takes place by virtue of being a student, just by watching what and how teachers are teaching in the traditional classroom setting. This is important to imprint interest in students to become a teacher. However, like learning of any skills, learning teaching through mere observation has its own limitation.Students tend to observe only the overt teaching of teachers in class; they are not invited to experience teachers' performances behind the scene. It is obvious that all the planning, production of materials and organization of teaching, which comprise the major part, are done outside of the classroom. So, students are mentally modeling the superficial teachers' practices than going deep into the professional knowledge of teaching. This tendency leads students to assume teaching wrongly as an activity that anyone can make. Therefore, learning to teach requires changing student teachers' conception of teaching from the way they used to perceive it when they were student.

B. *Problem of enactment*. Teacher education courses tend to be full of theory and student teachers don't get concrete tools and strategies that they can put in practice when they encounter a situation that demands the application of such dispositions. Thus, student teachers must not only know how students learn and what teaching strategies may help them; they must also test such notion in action through learning by teaching. In a nutshell, learning to teach requires that new teachers not only learn to think like teachers, but also act like teachers in the process of learning to teach

C. *Problem of complexity*. Teaching by its nature is complex and demanding task that calls for diverse and non-routine practices. Thus, new teachers need to deal with the problem of complexity which derives from non-routine and ever changing nature of teaching and learning. Moreover, it is impossible for teacher education to prepare teachers for their entire career [29]. Thus, teacher education needs to employee pedagogies that allow student teachers learn from experiences, from one another, and build their own professional knowledge [26].

By and large, we have argued that outstanding teacher education program is characterized by a tight coherence and integration among courses, between courses and extended clinical experiences in school setting, then all of which are related to teaching in school context. However, this coherence depends on the pedagogies employed by the teacher educators. Pedagogies that require trainees to use knowledge and skills learned in different part of the course in responsive to the diverse demand in real classroom teaching is highly needed. The programs studied by Darling-Hammond [11] have been pronounced for using teaching practices that involves *learner-centered and leaning-centered teaching*. By *learning-centered teaching*, the programs are known in facilitating in-depth learning that results in powerful thinking and proficient performance on the part of the learners. This involves using teaching strategies that create *a natural critical learning environment* where learners learn by confronting, intriguing, facing beautiful or authentic tasks that will challenge them to grapple with ideas, rethink their assumptions and examine their mental model of reality [28:15]. Regarding *learner-centeredness*, at the

same time such programs are responsive to individual learners' experiences, needs, talents and cultural background.

Now, the question which demands substantive answer is a kind of teacher education pedagogies that could realize tying teacher education courses, content area methods, clinical experiences and school teaching together and get rid of reality-shock and wash-out effect experiences; pedagogies that breakthrough the problems of learn to practice teaching and the one that bring to existence the basic essence of learning-centered and learner-centered teaching. In general, it is difficult to find specific teaching strategy that could successfully respond to these demands. However, different literatures on effective preparation of novice to learn to teach recommends embedding more intensive and practice based experiences of teaching across all courses of teacher education program [7]. To this end, providing opportunities for student teachers to learn teaching in practice (learning teaching by teaching) like learning of making presentation by delivering presentation during the teacher education lessons, leading group discussion, conducting mini-research independently or in team, and microteaching that allow student teachers to explore the secrete of teaching from its root [30]. [11] came across the following teaching strategies as best practices across the seven outstanding teacher education programs she studied: case methods, analysis of teaching and learning, performance of tasks, teaching portfolio, student research, and modeling teaching strategies.

3.9. University-school relationship (clinical practices)

Practicum (school-based clinical experiences) is one of the critical components of teacher education where student teachers learn the social and cultural context of schooling; learn teaching by teaching in authentic environment using authentic tools, and receiving feedback from real experts. Therefore, it is during practicum that student teachers' ability of handling contents, facilitating learning of students from diverse background and managing general learning environment is tested and a path card to teaching profession is provided [31]. As learning teaching in practice is critical in dismantling the problem associated with learning to practice teaching, different strong teacher education programs are taking different measures. Some of them are adding more courses emphasizing on professional practices into their curriculum. Others are designing strong school-based teacher preparation program where student teachers are attending professional courses at school base, and conduct seminars. However, though the organization of school practicum differs from program to program, it is mandatory for the preparation of teachers in the same way medical internship is required for the preparation of medical professionals. Thus, there are points need care in having strong practicum experiences:

> A. *Strong relationship between school and university-based faculty of education.* The first and the base for the success of practicum experiences is creation of common knowledge, shared belief among school, university and student teachers [11], [26], [32]. Thus, all of them need to have common understanding on good practices envisaged and work toward that. In order to create this atmosphere, teacher education programs use different strategies. Distribution of practicum manuals to all stakeholders and following up its implementation; organizing orientation program or short term training on the goals and procedures and activities during practicum experiences. Moreover, some teacher education programs are purposefully selecting their graduates among school teachers for

clinical supervision.

B.   *Distributing practicum throughout the program.* The traditional practicum program used to be organized only for a few weeks at the end of the teacher education program as a means to check if trainees could apply what they have learned so far. However, this resulted in fragmentation of theory and practice; hence it rarely equipped student teachers with good teaching knowledge and skills. In addition, the focus of practice teaching should not be limited to application of theoretical concepts learned to practice like laboratory in hard science courses [30]. Rather it should be designed in the way trainees would be able to build knowledge and skills through exercising teaching, planning, studying school environment, curriculum policies, assisting all students in class learn best. Thus, content to be learned is created and developed there than taking it as testing the applicability of concepts learned outside of the school [26].

C.   *Conducting extended teaching under the supervision of highly experienced staff.* As quality of teachers of any level of education influence students achievement, so does the quality of mentors assigned to supervise teaching practices of student teachers. For that matter, merit based selection of mentors who have sound teaching experiences, and expert in subject student teachers being prepared to teach could help more the purpose of practicum [11].

3.10. Qualification requirements

Qualification requirement is one of the common way by which teacher education programs ensure the preparedness of their candidates to the teaching job. The contents, the structures of teacher education programs as well as the means of safeguarding the quality differ from country to country or program to program. In the USA, teacher education programs set their own programs depending on the State law and qualification requirement, which usually run by professional associations [2]. For that reason, it is common to find variation in quality of graduates. For instance, the seven programs studied by Darling-Hammond are using different standards, as a result even using different program structure and evaluation system. If we take Alverno College, one of the seven programs, performance assessment and portfolio anchored in all courses used to assess students' performances from the beginning to graduation. Even there are no grades, and students receive validation of their competences in particular levels of specific abilities in each course. Finally, on graduation, they receive narrative transcripts describing the nature and level of their performance in line with the abilities required. However, all of the seven programs are highly pronounced in using self-developed and well-defined standard of practices and performances that guides teaching and evaluation of courses and clinical experiences throughout entire span of the program.

Other European and Asian countries, acknowledged in having strong teacher education program, are setting graduation requirement as well as standards of practices and performances at the national level. Then, all teacher education programs use the standards as they are or adopt them to their concrete reality. According to author indicated in [11], these countries are successful in raising school achievements across a country compared to USA. Therefore, the implication is that, what so ever who developed, having well-defined standards of practices, having common understanding on these standards and consistently teaching and assessing performances of students from the view these standards is condition for success of teacher education programs.

4. Conclusions and implications

The aim of this article is to set a framework for analyzing secondary teacher education programsthat may be conducted for the purpose of sharing good practices. Accordingly, as shown in table 1, ten different thematic areas have been identified, and discussed based on literatures produced on internationally recognized teacher education programs.

As can be seen from the ten thematic areas, factors shaping a current secondary teacher education program is not limited to specific level and specific theme. Rather, many interrelated factors work simultaneously in shaping the nature of teacher education. It goes from the policy formulated at the top level to the curriculum element and teaching strategies used by the classroom facilitator. Similarly, the past experiences of teacher education organization and implementations proactively interact with what is happening currently. Therefore, complete picture of the current teacher education program obtained from the study of these all themes than sticking to what is in progress during the time of study. As a result, comparative analysis for teacher education for the purpose of sharing good practices needs to take into consideration the ten thematic areas if understanding of the program in its holistic sense is needed.

It is clear that comparative research is conducted for the sake of sharing good practices; hence, the task of a researcher shouldn't be looking for pitfalls in the programs, rather for the good deeds that believe to be worth learned and disseminated to the similar context. Based on this premise, we tried to imply what analyzers would look for corresponding to each thematic area (please see the third column of table 1). In addition, the framework could also service as a lens for those who would like to assess the effectiveness of their program.

Table 1: thematic areas along focal points for comparative analysis on teacher education programs

N	Themes	Rationale	Points worth consideration
1	Current education system	Teachers are agent and object of education reform. So, teacher education program need to respond to the need.	Understanding the way teacher education programs align their program and practices to real tasks of teachers at school.
2	Historical development	It facilitates the understanding of the current practice including how the present practice is informed by the past experiences.	The way secondary school teacher education organized and provided in the past; its possible influence on the current practice.
3	Regards for teachers and teaching profession	Status of teaching profession is a key factor for attracting and maintaining brilliant, outstanding and dedicated candidates and teacher educators to the system.	Considering the status of teaching profession compared with other competing professions. Particularly looking at: salary and fridge benefits, academic freedom (work environment), career structure, and professional development opportunities.
4	Policy directives	It gives legal ground for teacher education program and practices. It is a reference point for the formulation of standards and qualification requirements.	By whom and how the standards are formulated and regulated; the way it directs the alignments among courses, between course works and clinical practices.

5	Structure of secondary teacher education	The stand of teacher education program in the university compared to other parallel programs plays a role in shaping identity and commitment of teacher educators and candidates. In similar way, modality of the program (concurrent, consecutive or alternative) imparts influence on the quality of teachers' prepared.	Teacher education status and measures taken to enhance its stand in the university. In short, it asks for action taken to lift-up the recognition of teacher education within the university organogram or any strategies used to have teacher educators who recognize themselves as teacher educator. The nature of modality used and its rigorousness in addressing adequate time for learning discipline contents, pedagogical preparation, and carryout longer school-based pre-service clinical practices.
6	Recruitment	Having brilliant and outstanding candidates with strong passion and dedication to teaching has significant implication for having quality teachers.	Mechanisms and procedures followed to attract candidates with strong general academic abilities, discipline contents and strong interest and dedication for teaching profession.
7	Curriculum and its organization	Contents and their coherence and integration determine what student teachers have to learn to do as future teachers	Representativeness of program contents for the development of the following knowledge bases of teaching: • understanding of learners, and how they learn and develop, • understanding of subject matter and curriculum goals and • understanding of teaching (PCK, TPCK, understanding of teaching diverse learners, assessment knowledge, and knowledge of classroom management). Looking at the way programs of the different phases and within the phases coordinated in order to mitigate counter productiveness of teacher education practices to teachers' learning.

8	Process of teacher education	Having well-represented and coordinated courses alone cannot be panacea for all problems associated with teacher education. It needs dedicated educators; utilization of appropriate pedagogies that purposefully link concepts and skills learned in and across the program phases and all of them to the school routines so that the problem associated with practice to learn teaching (Problem of apprenticeship of learning, problem of enactment and problem of complexity) would be tackled	Policies and practices in relation to recruitment and training of teacher education, particularly focusing on strategies the program used to attract educators with proper experience and expertise to educate student teachers; professional support rendered to them. Considering core pedagogical strategies recommended and practiced across the course; the nature of these pedagogies in tackling the problem of compartmentalization of concepts and skills learned, problem of learning practice teaching and enabling candidate implement theory-guided teaching (for example, microteaching and different type of learning teaching in practice, portfolio, case studies, analyzing teaching and learning, student research and the like).
9	University-school relationship	Organization of school-based pre-service practice is critical phase of teacher education. Its effectiveness depends on the collaboration among the university and schools; distribution of the practices over the longer period than attaching it to the end of the program for a limited weeks.	Availability of favorable conditions for the strong collaboration between university and schools; clear and define roles and responsibilities among university-based and school based teacher educators or mentors; merit based selection or assignment of tutors for clinical supervision; distribution of clinical practices.
10	Qualification requirements	Well-versed qualification requirement motivate student teachers and teacher educator to work hard to achieve the minimum standards. It is the nature of the qualification required that link the different part of the program to one another; then to the authentic change and practices envisaged at schools	Considering the way the qualification requirements and final examination link the goal set to the program to its different components; then this all to the demands of the world of teaching

5. Limitations of the study

We are conscious of the fact that more quantitative oriented researchers could pin to drawback in the method employed as we didn't go for systematic search of outstanding teacher educations and then looking for the corresponding papers produced on their experiences. We also believe that, it might have been possible to come up with the thematic areas in terms of their relative importance (ranking), had it been we employed systematic meta-analysis of previous studies. Nevertheless, we believe that we provided comprehensive framework that could help one interested in the area.

References

[1]   European Commission.*The Profession of Teacher Educator in Europe: Report of a Peer Learning Activity in Reykjavik, Iceland 21-24 June 2010*, no. November 2009. 2010.

[2]   L. Darling-Hammond. "Teacher Preparation and development in the USA: A changing landscape.," in *Teacher Education around the world: changing policies and practices*, L.Darling-Hammond and A. . Lieberman, Eds. London: Routledge, 2012, pp. 130–150.

[3]   B. Adamson. "International comparative studies in teaching and teacher education," *Teach. Teach. Educ.*, vol. 28, no. 5, pp. 641–648, Feb. 2012.

[4]   M. Fullan.*The New Meaning of Educational Change*, 4th ed. New York, London: Teachers College Press, Columbia University, 2007.

[5]   B. Ridley and D. Bridges. "Secondary teacher education in Ethiopia: ancient traditions and modern tensions," 1997.

[6]   G. Rossiter. "Historical perspective on the Religious Education in Australia: future development of Catholic.," *J. Relig. Educ.*, vol. 47, no. 1, pp. 5–18, 1999.

[7]   K. Hammernass, V. J. Tartwijk, and M. Snoek. "Teacher preparation in the Netherlands.," in *Teacher Education around the world: changing policies and practices*, L. Darling-Hammond and A. Lieberman, Eds. London: Rutledge, 2012, pp. 22–43.

[8]   P. Dolton and O. Marcenaro-Gutierrez.*2013 Global Teacher Index*. London: Varkey GEMS Foundation The, 2013, p. 60.

[9]   L. Goodwin. "Quality teachers, Singapre style," in *Teacher Education around the world: changing policies and practices*, L. Darling-Hammond and A. Lieberman, Eds. London: Routledge, 2012, pp. 22–43.

[10]   P. Sahlberg.*Finnish Lessons: What can the world learn from educaitonal change in Finland?* New York: Teachers College Press, Columbia University, 2011.

[11]   L. Darling-Hammond.*Powerful teacher education: Lessons from exemplary programs*. San Francisco, CA: Jossey-Bass, 2006.

[12]   L. Darling-Hammond. "Teacher Education and the American Future," *J. Teach. Educ.*, vol. 61, no. 1–2, pp. 35–47, Dec. 2009.

[13]   R. Minello. "International research on teachers education: An update framework," *Eur. J. Res. Educ. Teach.*, vol. IX, no. 03, pp. 331–354, 2011.

[14]   K. K. Kumashiro. "Seeing the Bigger Picture: Troubling Movements to End Teacher Education," *J. Teach. Educ.*, vol. 61, no. 1–2, pp. 56–65, Dec. 2009.

[15]   L. Darling-Hammond, D. J. Holtzman, S. J. Gatlin, and J. V. Heilig. "Does teacher preparation matter? Evidence about teacher certification, Teacher for America, and teacher effectiveness," *Educ. Policy Anal. Arch.*, vol. 13, no. 42, 2005.

[16]   L. Darling-Hammond. "CONSTRUCTING 21st-CENTURY TEACHER EDUCATION," *J. Teach. Educ.*, vol. 57, no. 3, pp. 300–314, 2006.

[17]   J. Hattie.*Visible learning: A synthesis of over 800 meta- analyses relating to achievement.* London & New York: Routledge, 2009.

[18]   McKinsey and Company.*How the world's best performing school systems come out on top. Available:www.mckinsey.com/clientservice/social sector/resources/pdf/Worlds_School _Systems_Final.pdf*. New York: Author, 2007.

[19]   M. Haberman. "Selecting 'Star' Teachers for Children and Youth in Urban Povery," *PHI Delta Kappan*, vol. 76, no. 10, pp. 777–781, 1995.

[20]   H. Niemi and R. Jakku-Sihvonen. "Teacher Education in Finland," in *European Dimensions of Teacher Education – Similarities and Differences*, M. V. Zuljan and J. Vogrinc, Eds. ijubljana, Slovenia: Dravska Tiskarna, 2011, pp. 33–52.

[21]   L. Shulman. "Knowledge and teaching: Foundations of the new reform," *Harv. Educ. Rev.*, vol. 57, no. 1, pp. 1–23, 1987.

[22]   P. Mishra and M. J. Koehler. "Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge," *Teach. Coll. Rec.*, vol. 108, no. 6, pp. 1017–1054, Jun. 2006.

[23]   European Parliament and the council of European union. "Recommendation of the European Parliament and the Council of 18 December 2006 on key competences for lifelong learning," *Official Journal of the European Union*, no. March 2002, Brussels, pp. 10–18, 2006.

[24]   C. Angeli and N. Valanides. "Epistemological and methodological issues for the conceptualization, development, and assessment of ICT–TPCK: Advances in technological pedagogical content knowledge (TPCK)," *Comput. Educ.*, vol. 52, no. 1, pp. 154–168, Jan. 2009.

[25]   T. Engida.*ICT-enhanced Model ICT-enhanced*. Addis Ababa, Ethiopia: UNESCO-IICBA, 2011.

[26]   F. Korthagen, J. Loughran, and T. Russell. "Developing fundamental principles for teacher education programs and practices," *Teach. Teach. Educ.*, vol. 22, no. 8, pp. 1020–1041, Nov. 2006.

[27]   M. Cochran-Smith. "Learning and unlearning : the education of teacher educators," *Teach. Teach. Educ.*, vol. 19, no. 1, pp. 5–28, 2003.

[28]   K. Bain, *What the Best College Teachers Do.* Massachusetts: Harvard University Press, 2004.

[29]   T. J. Mays. "Developing Practice : Teaching Teachers Today for Tomorrow," *Us-China Educ. Rev.*, vol. 6, pp. 859–871, 2011.

[30]   M. Lampert. "Learning Teaching in, from, and for Practice: What Do We Mean?," *J. Teach. Educ.*, vol. 61, no. 1–2, pp. 21–34, Oct. 2009.

[31]   S. Wassermann.*This teaching life: How I taught myself to teaching.* New York, London: Teachers College Press, Columbia University, 2004.

[32]   L. Darling-Hammond and K. Hammerness. "The design of teacher education programs," in *Preparing teachers for a changing world: What teachers should learn and be able to do*, L. Darling-Hammond and J. Bransford, Eds. San Francisco: Jossey-Bass, 2005, pp. 391–441.