



Pre-service Teacher Education in Nepal: A Qualitative Case Study

ABSTRACT

Attempts have been made to reform Pre-service teacher education in Nepal for the past 6 decades. However, prospective teachers do have little or no opportunities to go through practice skills. Most or almost all the units of Maths, Science and Language curricula focus on low level cognition whereas the 21st century skills demand higher order thinking skills. Very few pass B.Ed examinations and out of them negligible percentage have been employed.

National Campaign for Education Nepal

Table of Contents

Introduction

What is pre-service teacher education?	5-9
Pre-service teacher education in Nepal	
Rationale of this study	
Research questions	
Delimitations	

Methods of Study 10-12

Design
Paradigm
Informants
Tools for information collection

Findings 13-34

What are 21st century skills for pre-service teacher education?
How often is curriculum reformed?
How relevant is the curriculum?
How meaningful have been the instructional activities in schools?
Do TEIs use ICT in preparing teachers?
How many do get success in completing their B.Ed?
The real picture of B.Ed. enrollees and pass percentage
The number of teaching license holders
The employment rate
Do past graduates have complaints about PST program?
Has there been any reform attempts?

Do they have strategic plans to raise teacher education quality?

Has quality demand been fulfilled by the trained teachers?

What are the strengths and weaknesses of PST graduates?

Has there been any initiations to improve PST?

What were the expectations of student from PST and what did they get?

How did the students prepare for the exam and what did they study?

How was the instructional activities in college?

How is the situation of applying PST knowledge and skills in schools?

Any particular skills that the students learned in PST colleges?

How does B.Ed. help to become a teacher?

What is the reason behind enrolling in B.Ed. program?

Do students have expectations from B.Ed.?

How do students judge B.Ed. curriculum?

Do students think PST curriculum help them to become better teachers?

Do TEI teachers teach according to pedagogical principles?

Do students think they can transfer their knowledge and skills to schools?

Do students think there should be any change in curriculum?

What message do we get from real classroom observation?

In TEI

In schools

Curriculum Analysis of Preservice Teacher Education

Conclusions	35-37
Strategies for future	38-39

Campaigning for pre-service teacher education by organizations like NCEN	40
At local level	
At provincial level	
At federal level	
References	41-43
Annex	44-60

List of Tables

Table 1: Number of enrollees, graduates and employed as teachers (as perceived by TEI heads)

Table 2: Number of B.Ed students appeared and passed in the examination

Table 3: Number of license holders in the past 12 years (Region-wise Total)

Table 4: Number of secondary school teachers employed permanently within 5 years

Table 5: Curriculum analysis of B.Ed. level in selected specialization subject area (Nepali Education)

Table 6: Curriculum analysis of B.Ed. level in selected specialization subject area (Science Education)

Table 7: Curriculum analysis of B.Ed. level in selected specialization subject area (Mathematics Education)

Table 8: 21st century skills and our pre-service teacher education curriculum

Table 9: Strategies for future actions for teacher preparation

Table 10: Paradigm shift in Education

Table 11: Elements of a Successful PSTE Program

Table 12: Table of revised cognitive domain

Table 13: An example matrix that has been filled in might look something like this:

Preservice Teacher Education in Nepal: A qualitative case study

Introduction

Teacher education has always been a priority in Nepal. The Government of Nepal has made teacher education mandatory for all school teachers since 1971. To become a teacher one must have three qualifications. One, minimum qualifications; two teaching license; and three the success in teacher employment examinations. Pre-service teacher education is provided by the universities, license and teacher entry exams are conducted by the Teacher Service Commissions.

What is pre-service teacher education?

In practice teacher education has been considered important in three phases. The first one is the training of teachers prior to their teaching career, which is called the pre-service teacher training or education. The second phase is the induction training where the new teachers are oriented about school atmosphere, the classroom environment, nature of the students and other pedagogical aspects. This may be a short term but it is considered an important part of teacher education. The third one is the professional development opportunities provided to the working teachers. This is also called the in-service teacher training or education. Pre-service teacher education has its own importance in teaching. Many countries around the world including Nepal have made it mandatory for entry positions as teachers.

Teachers have an instrumental role in enhancing the overall development of students by nurturing their interests and sharpening their instincts. Hence their professional development is indispensable for the multidimensional development of the nation. In fact teachers are the real architects of the nation's destiny because teachers are supposed to inculcate the values of life in the tender minds of the children and empower them with the caliber to judge what is right and what is wrong. It is by virtue of their commitment, diligence and dedication students get physically, mentally and emotionally prepared for the roles and responsibilities they need to shoulder in their lives. To guide student thinking, teachers must also understand how children's ideas about a subject develop, and the connections between their ideas and important ideas in the discipline

(Schifter & Fosnot, 1993). Teacher education encompasses teaching skills, sound pedagogical theory and professional skills.

Teacher Education = Teaching Skills + Pedagogical theory + Professional skills.

Teaching skills would include providing training and practice in the different techniques, approaches and strategies that would help the teachers to plan and impart instruction, provide appropriate reinforcement and conduct effective assessment. It includes effective classroom management skills, preparation and use of instructional materials and communication skills.

Pedagogical theory includes the philosophical, sociological and psychological considerations that would enable the teachers to have a sound basis for practicing the teaching skills in the classroom. The theory is stage specific and is based on the needs and requirements that are characteristic of that stage.

Professional skills include the techniques, strategies and approaches that would help teachers to grow in the profession and also work towards the growth of the profession. It includes soft skills, counseling skills, interpersonal skills, computer skills, information retrieving and management skills and above all lifelong learning skills.

Therefore, professional development of teacher can help teachers construct these understandings. Owing to the lack of knowledge, skills and efficiency required in the profession many teachers fail to shoulder their responsibilities. This is more the case of novice teachers but even the experienced teachers need training and professional revitalization. According to Ingersoll (2003) even experienced teachers confront great challenges each year, including changes in subject content, new instructional methods, advances in technology, changed laws and procedures, and student learning needs. However even after being trained many of the teachers have not been found to be able to bring about a desired change in the learning outcomes of the students.

Pre-service teacher education in Nepal

Nepal has a history of seven decades of teacher education. Basic teacher education started as early as 1948. Formally the initiation of pre-service teacher education started in Nepal after the

establishment of College of Education in 1956, five years before the establishment of Tribhuvan University (TU). This indicates that the then government was anxious about quality education of children in schools. In the beginning the program concentrated on primary teacher training (called normal teacher training). Secondary teacher training (B.Ed) started a little later. Teacher educator's program (M.Ed) started in the 60's. The purpose of teacher education was to make teachers competent both in content and pedagogy to help students learn better.

At that time the minimum qualification to become primary school teacher was under SLC. The duration of primary teacher training was 10 months. Later when the National Education System Plan (2071) implemented then gradually the minimum qualification for the primary teachers upgraded to SLC pass (1987). Until 1986 the preservice teacher education for the primary teachers was 10 months provided by the College of Education. After 1971 the school structure was changed to 3+4+3 (3 years primary, 4 years lower secondary and 3 years of secondary education). The preservice teacher training was made mandatory by the plan. The duration for each kind of teacher education was 10 months, 2 years and 2 years respectively. To become lower secondary teacher one has to pass then Intermediate (now 12 years of schooling) and for secondary teachers it was Bachelor's degree. (NESP, 1971).

After the successful democratic movement in 1991 a National Education Commission was formed to recommend measures for educational management in the country. The Commission recommended 5+3+2+2 (5 years of primary, 3 years of lower secondary and 2 years of secondary and 2 years of higher secondary level) education for the country (NEC, 1992). However, 2 years of higher secondary was initiated in 1988 but the formal classes were operated only in 1992. The requirement for the teacher education were similar as before 10 months for primary, 2 years for lower secondary and 2 years for secondary. Until today there has been no mandatory provision of training to teach grade 11 and grade 12. The recent Education Act Eighth Amendment (2016) indicated to take measures in this regard too.

The problem of pre-service teacher education is that the teachers entered the teaching profession before they were trained. As said before it was a necessity to hire teachers immediately in schools after 1951, the starting of real public education era in Nepal. So many teachers, between 1951 and 1971, without any training or teacher education, entered the profession. Later when training was made mandatory these teachers were asked to join the training program organized

by the government. This first kind of supply based training was also named as pre-service teacher education.

Preservice teacher education for non-trained working teachers started massively after 1971. In 1980 primary teachers were trained through Radio. Later in 1993 National Center for Educational Development (NCED) was established under the Ministry of education as an apex body for teacher training. The NCED started to train the teachers already in job. On the other hand Universities of Nepal continued their programs for teacher education as pre-service teacher training/education. When the job of training all the backlog of the “to be trained teachers” was finished NCED involved basically for in-service teacher education. Now there are four universities running pre-service teacher education for the secondary teachers. The Education wing of the higher secondary level (now grade 11 and 12 of the school) prepares pre-service teachers for the primary level. The government also made it mandatory that a primary teacher must have a minimum qualification of 12 years of schooling. Those who get grade 11 and 12 with teacher education contents do not have to go for further training but those without teacher education must go through 10 months of teacher education before they join teaching profession. Yet another milestone was created for teachers to be able to teach in school, i.e. Teaching License. Teaching License was made mandatory after the Seventh amendment of Education Act in 2001. It was based on the recommendation of the High Level Task Force Recommendation the same year. (HLTF, 2001).

Rationale of this study

Teacher Professional Development has been more focused for in-service teachers. But, it is equally relevant and necessary for the pre-service teacher how their professionalism has been grown up. Hence, the most of the studies have been done in the areas of in service teachers, however, no studies have been carried out for indentifying the status of pre-service teacher; how many have been produced for basic and secondary level and out of them how many are in the teacher service. Have they professionally been nurtured in pre-service phase. It need to be taken that the lack of expertise and professionalism on the part of the teachers jeopardizes the educational future of the entire nation because it is teachers who have a pivotal role in educating the new generation and in enabling them to keep pace with the developments taking place in the modern competitive world.

The academic and professional standards of teachers constitute a critical component of the essential learning conditions for achieving the educational goals of a nation. The focus of teacher preparation had to shift from training to education if it had to make a positive influence on the quality of curriculum transaction in classrooms and thereby pupil learning and the larger social transformation

Research Questions

1. How has the present day PST curriculum addressed the need of 21st century pedagogical skills?
2. What is the employment opportunities for the PST graduates as teachers in schools?
3. How can the PST education institutes improve their programs to meet the policy gap in curriculum and its practices?

Delimitations

This report discusses secondary level pre-service teacher education i.e. B.Ed programs. After the establishment of TU all the programs of College of Education were brought under the University. Later Kathmandu University started teacher education programs for Primary teachers (2002) and Early Childhood teachers (2009). Purwanchal University started its preservice secondary teacher education through distance mode in 2005. However, the massive teacher education program still is run by TU.

Methods of the study

Design

The research design for this study is qualitative case study. A case study is a detailed description of a particular case or event or a problem that deals mostly with why such situation occurred and how they can be resolved. It demonstrates the real life problem related with the case. In qualitative case study the researcher collects information from various sources to justify the case being studied. The case analysis, however, differs from the field of study and depends if it is a psychological, clinical or social. In social science research qualitative case study demands more detailed feelings, attitudes, and perceptions of people involved in it in a broad manner whereas psychological and/or clinical case studies look for more quantitative information related with a particular case under study. Yin (2014) describes a case study as an empirical inquiry of a contemporary situation of a particular case. He also argues that it is more important to think of the design, data collection and analysis stage to make a good case study research. In a case study research the researcher analyses the data, applies the emerging knowledge with reasoning and draws conclusions. Stake (1995) talks about the intrinsic, the instrumental and the collective case studies. He says that the intrinsic case study aims to analyze critical situation of an individual case whereas instrumental and collective case studies focus more for the generalization of findings.

Paradigm

Interpretive paradigm has been adopted in this research. This paradigm seeks to interpret the subjective ideas of the participants with ‘an inter-subjective epistemology and the ontological belief that reality is socially constructed’. Observation and interpretation are the two key elements of interpretivism. In order to collect information the researcher observes the phenomenon and makes meaning of the observed data while interpreting them (Aikenhead, 1997). Interpretive paradigm focuses more on the social construction of knowledge as full complexity of human sense making (Kaplan and Maxwell, 1994).

Informants

As case study requires multiple source of data/information this study involved many people as informants. They were Dean and Assistant Dean of the Faculty of Education, Department heads of different teacher education contents, the trainer, the trainee, school headteachers, District Education Officers, and policy makers from the MOE. Moreover, the students studying in TEI

and the PST graduates working at schools as teachers were also involved as informants for this study.

Tools for information collection

An interview schedule was prepared for Dean and Assistant Dean of the respective Faculty of Education, Department heads of different teacher education contents, the trainer, the trainee, school headteachers, District Education Officers, and policy makers from the MOE, to elicit information on

- a. the present day concept of pre-service teacher education in Nepal
- b. the perception of the teacher educators and the policy makers on the relevancy of the present day pre-service teacher education
- c. the estimate of the employability of PST graduates
- d. the opinion of employers and/or hiring institutions about the pedagogical skills of PST graduates

An FGD was conducted among teacher trainees to get a sense of

- a. their expectation from the program they are in, their day to day classes and the gap they felt.
- b. Moreover, the estimation of their fore-runners getting employment in the market was also sought.

Another FGD was conducted among the prospective teachers studying at B.Ed level to elicit

- a. their expectation from the program they are in, their day to day classes and the gap they felt.
- b. What was their experiences in the college about teacher preparation

Literature review was done to come up with 21st century skills required for a teacher. Curricula of the pre-service teacher education programs were analyzed as data from the literature. The findings from previous research on pre-service teachers were also used as data in this research.

Government policies on teacher education were analyzed with the policy of universities regarding the production of teachers. Data were collected through other sources also like the output of teacher education institutes, the employment opportunities for teachers from the record

of the DEO and Teacher Service Commission along with the experience of the training providers and the trainees.

Data were also collected from TU Examinations Controller Office to find out the number of examinees and pass rate for 5 years.

Class observation of the training providers were observed to see if the teacher education programs provide ample opportunities to the trainees to be in apposition to transfer their class knowledge to their teaching courses at schools.

Similarly classes were observed in schools where teacher education graduates were teaching in order to analyze the utilization of their knowledge in real classroom practices.

Curriculum analyses of 3 years and 4 years B.Ed curriculum were done and compared with the 21st century skills of a teacher. While doing this lower level cognition and higher order thinking skills were categorically analyzed.

Findings

There are many interesting findings from this study. Before analyzing the data and drawing the findings let us find something based on the literature. There are many literature that suggests the nature of teacher education in the 21st century. Comparing the results of this study with the 21st century skills and coming up with the gaps would be very helpful for the TEI to refine and reform their programs. So the same exercise is carried out as findings from the literature followed by the results of the empirical research

What are 21st century skills for pre-service teacher education?

This part has been investigated through various literature available in the market. Based on the following findings the preservice teacher training curricula of our context has been analyzed later in the findings section. The paragraphs below explain different research on preservice teacher education around the world and their findings.

Cheng (2005) claims that the Asia-Pacific region have transformed their teacher education curricula to face global challenges of economic development and high technology. This has called for new responsibilities in school management, curriculum planning and development, mentoring new teachers, staff development, school-based action learning projects, and working with parents, outside leaders and professionals (Cheng, Chow & Tsui, (2001) as indicated in Cheng, 2009). In facing up to challenges and impacts of globalization, high technology, economic transformation, international competition and local development in the new century, teacher education institutions in the Asia-Pacific region have made numerous educational reforms (Cheng, 2009). He has explained three waves of teacher education namely, internal effectiveness 1980-90, interface effectiveness 1990-2000 and future effectiveness 2000s. The details of his idea is given below in Table 1. In these three waves of teacher education the first wave dealt only with the planned knowledge, skills and cultural values from teachers to students to satisfy the stable society. The second wave was supposed to deal with a kind of teacher education focusing on service to satisfy the need of the stakeholders in a competitive market. In the third wave, it is the facilitation of sustainable multiple developments in the globalization context of change.

Regarding teacher training curricula, contents are drawn from three different sources, they are philosophical, sociological and psychological. Providing understanding of the theoretical and

philosophical underpinning in teaching; the role of social dynamics in teaching; and understanding the inner talent of the students are the core of teaching professions which can be drawn from the three bases in a respective manner. Only with the combination of these a teacher can provide meaningful learning experiences to his/her students in the classroom.

In the 21st century we have to shift the paradigm of teacher education from institution-bound learning to localized and globalized learning. In the same way it is the demand of the society that the teacher education programs should shift its paradigm from reproduced learning to individualized learning. A teacher in the 21st century requires knowledge regarding individualization of student learning moving faster from mass learning as in the past. The teacher must have knowledge and skills of multiple and sustainable development of each child in the class. So that the product of a school can compete with the globalization and change. With this global outlook the teacher will be leading his/her students towards lifelong learning.

Knowledge and skills in the global village is only possible these days through internet. As students may have access to web-based learning, on-line conferencing, inter-cultural sharing, and interacting with multi-modal learning stimuli the use of ICT in teacher training is utmost important (Ryan, Scott, Freeman, & Patel, 2000 and Wagley, 2008).

Training in technology should encompass telecommunications, satellite access, networking, the internet, video-conferencing and digital components as well as optical technology. These technologies will permit the 21st century teacher in the 21st century classroom feel comfortable and teach effectively and efficiently. (Shukla, 2012)

“An important role for preservice teacher education (PTE) is to change (frame of to-be- teachers) initial frames of reference. Preservice teacher education is ideally situated to foster such a shift in thinking. It is located squarely between teachers’ past experiences as students in classrooms and their future experiences as teachers in classrooms. From their experiences, teachers develop the ideas that will guide their future practices. If these ideas are not altered during preservice teacher education, teachers’ own continuing experiences will reinforce them, cementing them even more strongly into their understandings of teaching, and reducing the likelihood that these ideas might ever change.” (Kenneth, M. 1999 p.57). This statement tells us we must transform teacher’s past experiences to the future demand of the changing world.

Another skill a 21st century teacher needs is research. Akyeampong (2003) outlines the importance of action research skills of teachers with an in-depth content and practical knowledge of research in their curricula. He says “Research must be a major priority in teacher education and preparation in the 21st century. Professional teachers naturally seek answers to questions and solutions to problems that enable them to help their students to learn”. This is very important because they are the decision makers in choosing texts, literature, technology-integration, curriculum, pedagogy and student assessment.

In a research of seven exemplary teacher education and training programs, some common themes were found in teacher education development to match with the 21st century. They were (Oberg, 2001; Hébert, 2001; Glickman, 2001, Weiner, 2001; McCall, 2001)

1. A common clear vision of good teaching that permeates all course work and clinical experiences, creating a coherent set of learning experiences.
2. Well-defined standards of professional practice and performance that are used to guide and evaluate course and clinical works.
3. A strong core curriculum taught in the context of practice and grounded in knowledge of the child and adolescent development and learning.
4. Extended clinical experience, at least 24 to 36 weeks of supervised practicum and student teaching opportunities.
5. Extensive use of a variety of case methods, teacher research, performance assessment and portfolio evaluation.
6. Explicit strategies to help students to confront their own deep-seated beliefs and assumptions about learning and students and to learn about the experiences of people different from themselves.
7. Strong relationship, common knowledge and shared belief among school-based and university-based faculty jointly engaged in transforming teaching, schooling and teacher education and training.

Auditing 11 countries of Southeast Asian nations (Brunei, Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste, and Vietnam) the researchers came up with the following common domains or strands of Teaching Competency Standards. (SEAMEO INNOTECH, 2010, p.2).

1. Professional knowledge – refers to the mastery of content and methodology for teaching
2. Professional skills – refers to pedagogies, classroom management, and learner assessment
3. Personal characteristics – refers to personal traits such as being responsible, punctual, etc.
4. Professional/Personal ethical standards and values – refers to sound and ethical standards of ethics and morality resulting in teachers being good role models in the school and the community and
5. Professional development and lifelong learning – refers to the professional development and lifelong learning undertaken by teachers such as participation in professional teacher organizations and activities, and other elements that demonstrate a desire to enhance the teaching profession.

USAID has developed a compendium on the development of preservice teacher education programs. The compendium indicates major elements to be involved in curriculum. See Annex 2.

Nepal Preservice Teacher Education Scenario

The data collected to analyze the current PST based on the three research questions as indicated above helped to see PST from different angles. Class observation, interviews, focused group discussion, curriculum analyses and literature review generated the following major themes as findings from empirical evidence.

How often is curriculum reformed?

The researcher explored the attempts made by the TEI to improve their curricula towards the effectiveness of PST. Dean, assistant dean, campus chiefs, and heads of departments were the informants regarding this issue. Although the dean claims that the curricula is reviewed based on parental and students demands and the market needs no evidence was found on such survey. The authorities accept that the university still has a practice to revise the curriculum based on expert's opinion. Assistant dean and campus chiefs also opined that they consider SAARC level standard and international scenario while revising the curriculum. The respondents, however, have a

common grumbling that the curriculum for different subjects are prepared differently without a kind of uniformity in them. The HOD also told that the curriculum revision is also based on the current school level curriculum of Nepal.

In the past the University was running 3 years B.Ed whereas from 2015-16 academic year 4 years B.Ed has been in practice. Their experience tells us that the curriculum of PST remained for a long time the same without modifications in the past. The Deans and the assistant Deans tell us that the average duration for the revision was around 8 years in the past but now the scenario has been improving with a new initiation of 4 years B.Ed program. However, the HOD says that the revision was hardly made in 10 years in the past.

How relevant is the curriculum?

Relevancy is measured in two ways. One whether the graduates will get an easy access to the job market and whether the graduates will be able to transfer their skills effectively in the real classroom situations. University 1 authorities accepted that the curriculum for teacher education still needs some improvement to make it relevant. The Dean says the curriculum is good for teacher preparation. He further says that hard work is required to make it more practice oriented. However, he accepted that most of the PST curricula are theory-based. Assistant Dean do not differ in ideas what the Dean opined. The Campus chief seems he is satisfied with the present curriculum and its relevancy. However the HOD of Nepali language, Science and Mathematics complained that the curriculum is not relevant at all. Since most of the courses are theory-based the graduates are having problems to transfer their skills in the real classroom at schools. To elaborate much on relevancy the following question was asked to the respondents.

How meaningful has been the instructional activities in schools?

Again the same answer appeared by the University1 dean and assistant dean that their PST curricula are heavily theory based. However, they also claimed that the curricula are revised on the basis of school level curricula. If it is designed on the basis of school level curricula how come is it not relevant? Remained unanswered. The department heads accept that the curricula still needs to be matched with school level curriculum. They did not hesitate to tell that their curriculum is weak simply because the focus is not on the practice much.

Do they use ICT in preparing teachers?

There are two things to be understood here. One whether they use ICT in teaching and the other is whether they have ICT-based pedagogy in preparing teachers. University 1 also has a program of B.Ed with ICT specialization as an option to the students. There are six constituent campuses and 7 affiliated campuses having such options to the students. It should also be understood that there are around 600 TEIs under TU (570 affiliated and 26 constituent campuses) preparing pre-service teachers for the country. Based on their ICT specialized courses in 13 campuses the dean says only some campuses are using ICT in teacher preparation. The assistant dean also has similar opinion. The campus chief has an experience of using ICT in his campus basically in health education, English and science. The use of ICT they mean is the use of LCD projector in the classroom. However the HODs have different opinion. They say that they are not equipped with the facilities to use ICT in classes so there is no provision for ICT-based pedagogy. All classes are chalk and talk based.

Do the prospective teachers have enough practice opportunities?

It has been very difficult for the TEI to manage practice teaching/internship sessions at the end of the program. In an average one lakh prospective teachers have to go through these practical sessions before they graduate. This scenario is true for University1. A six week practice teaching has been ineffective because of the shorter duration. Moreover it has only been a kind of completing formality. The dean accepted that the practicing schools do not have positive response on practice teaching. The schools have complained that the teachers the Faculty of Education sent failed to implement the training skills in their schools. He also accepted the fact that many schools also sent the practicing teachers back without letting them the practice in their schools. The assistant dean tells the problem managing one lakh teachers a year; difficult to find schools for practice; school hesitating to accept practicing teachers etc. He further accepts that the practicing teachers failed to deliver practical knowledge at schools. The campus chief indicates the problem of supervision of the practicing teachers as the main reason of the inefficiency of practice teaching/internship. In-house practice of micro teaching is not that effective as HOD tells because very few student-teachers attend it. The HOD also says that in some cases the 45 days' practice teaching is reduced to 30 days just to complete the formality. So the practice teaching/internship activity has been very poor regarding the transfer of training skills.

How many do get success in completing their B.Ed?

Let us see the scenario what the authorities tell or experience about this in the following table. They were asked about the number of enrolment, number of successful students and the employability as teachers per year after graduation.

Table 1: Number of enrollees, graduates and employed as teachers

	Dean (national)	A.Dean (national)	CC (campus)	HOD Sc (Dept)	HOD Mth (Dept)	HOD Nep (Dept)
Enrol	190,000	200,000	1000	150	450	500
Pass	20%	25%	30%	33%	27%	45%
Employed	5%	10%	10%	40%	50%	20%

The above table explains the poor scenario of PST graduates in Nepal. The dean shows a poor picture where only 5 percent of the graduates get employment and teachers. The views of assistant dean and the campus chief also tells it is not more than 10 percent. These versions clearly explains the unemployment situation of B.Ed graduates in schools. The mathematics and science graduates seem to have better employment opportunity compared to Nepali subject. This analysis tells us that many students fail in teacher education program and very few of those who pass get employment. This means the internal and external efficiency of the TEI has remained very poor in Univ. 1.

The real picture of Enrollment and pass percentage

Actual data were collected from TU Examination controller's office on the pass rate of the B.ED students to compare it with the enrollment data for the past 5 years. The following 3 tables tell us the number of students appearing the examinations, the pass rate, the teacher employee and the

license holder for the secondary education. The employment data was collected from Teacher Service Commission, Sanothimi.

Table 2: Number of B.Ed students appeared and passed in the examination

	2011	2012	2013	2014	2015
Total Appeared in exam	136,900	140,605	128,401	105,916	76247
Total Pass	33690 (25%)	42100 (30%)	29532 (23%)	29656 (28%)	19062 (25%)

(Source: TU Exam Controller's Office, Balkhu 2017)

The above table explains that very few students complete their degree related with PST. Around 70-75 percent could not complete their B.Ed. degree each year. Do they repeat the same or go elsewhere? The answer has not been searched yet. In the past 5 years the number of teachers paasing B.Ed. and looking for the job seems to be around 38,000.

Table 3: Number of license holders in the past 12 years (Region-wise Total)

Region	Eastern	Central	Western	M-Western	F-western	Total
Total	138527	243876	143849	98706	75107	700065
Secondary level license holders	Exact number of secondary level license holders in year-wise disaggregated form not available from TSC. The total however, is 38861 for 5 years from 2011-2015					

While browsing how many of B.Ed. holders get through the licensing examination for teachers conducted by TSC in the past 5 years. Table no. 3 indicates that almost all B.Ed. holders apply for and get teaching license. The total number of secondary level license holders coincidentally reached the same number as the number of B.Ed. graduates for the past 5 years. Now let us see if they get a good opportunity for jobs in the following table.

Table 4: Number of secondary school teachers employed permanently within 5 years

Year	2011-2013	2014-2016	2011-16 Total teacher employed	Total Teacher production in 5 years
Number of teacher position advertised	2286	612	2767	Around 38,000 B.Ed. holders
Number of Applicants	61590	NA		
Recommended for job	2146	611		
Less	140	1		

(Source: TSC data, 2017)

In the past six years there has been only two advertisements for the pre-service education holders. The total number of seats advertised in 2013 was 2286 secondary level positions whereas the same was only 612 in 2016. In total the number of advertised position for secondary level teachers is only 2767 whereas there were 38000 graduates looking for the same. In fact others having the qualifications also applied for the position reaching the applicant more than 60,000. With this analysis it seems that only 7 percent get the opportunity for employment. In a study done by Wagley and Lamsal (2016) Nepal still requires 63400 teachers to meet the STR in its system. Unfortunately, the required positions has not been incorporated in the main system. That is the reason why very few position is advertised. This raises a big question on the relevancy of B.Ed. in future, if the same trend continues.

Do your old graduates have complains about your program?

The respondents also asked if their old graduates, who are employed, are happy. Or do they have complains against the PST programs? In this context the dean of the Univ 1 tells that they have complains like their education is lower grade compared to BSc; they have more theoretical knowledge but not the practical; they got less opportunity to gain the skills in using instructional materials. The version of the assistant dean does not differ much than that of the dean. He adds that the old graduates also complained about outdated curriculum; and their skills and knowledge were not relevant because of the lack of ICT. The campus chief has different opinion from the graduates like the absence of regular classes; and less preparation of the teachers. The HODs heard the complaints like less subject matter compared to other Bachelor programs; less activity based instruction; and only theoretical knowledge. The school administration complains that the

PST graduates cannot teach well; they have less practical knowledge and they are not committed towards profession. This gives us a picture of the poor strength of the PST graduates in Nepal.

Has there been any reform attempts?

The authorities say that they have made attempts to make the situation improving. Curriculum changes from 3 years to 4 years B.Ed is one of the major attempts of reforming PST. In the mean time they are now focusing on the use of ICT in classrooms. The campus has started using multi-media in classrooms. They have also expedited the field visit during practice-teaching and regular interaction has been put in place to know the problem in time. The HODs also tell the same agenda of reform.

All these discussions on the present context of PST in Nepal depicts a gloomy picture. On one hand the PST products have less quality in their knowledge and skills and on the other hand schools are also suffering from poor quality products. Unless PST can be claimed of efficient and high quality programs the school education for the mass will always remain crippled. The scenario at the present context is not satisfactory. The authorities who run the programs are not happy on what they are doing. They have been very critical about their own programs. This further highlights the importance of revamping the age old structure of the PST and come –up with a standard to meet the 21st century skill demands. The internal efficiency of the TEI is very low, unless attempts are made to raise it up the relevancy of the PST in Nepal will always be a big question.

To know further about the PST situation the researcher also interviewed MOE officials concerned with teacher training, headteachers and District Education Officers of the Kathmandu Valley. The following themes were generated to analyze their responses regarding teacher training in Nepal.

Do they have strategic plans to raise teacher education quality?

MOE officials say the responsibility of PST goes to the universities with full autonomy. However the MOE has made several strategies to raise its quality through them. They have suggested the universities to focus more on professional development areas giving priorities to practical activities in training programs. They say they also suggested the universities to adopt

practical based pedagogy and the use of ICT. But they could not tell the MOE strategy to raise PST quality.

The DEOs say that they have made attempts to raise the quality of teacher education through short-term training and RC level activities for teachers as part of their professional development after they are employed as teachers. They also have programs to make quality competition among schools at RC level. They have encouraged teachers to using local resources in teaching. In some cases the DEOs made attempts to involve community in teaching. They have been trying to make RC as effective as possible in supervision and evaluation aspects. However, they also do not have any written documents regarding the raising of quality of teachers in their districts.

In schools there has been no practice of mentoring the new teachers. Nor do they have any particular programs to raise the quality of teachers. They send their teachers in the training program as and when asked by the DEO.

Has your quality demand been fulfilled by the trained teachers?

The respondent whether is the MOE or the DEO or the headteachers, all say the same thing that the PST graduates have only theoretical knowledge. They do not have the practical skills demand of the classroom. They teach the contents, they have ideas of what to teach; but unfortunately they also follow the same suit as the untrained teachers. The headteachers did not find any practical knowledge in the PST graduates who serve in their schools as teachers. They say the newly appointed trained teachers have enough knowledge of what, why and how to teach but they seldom use their knowledge in the classrooms.

This indicates once again the poor quality of PST which has not made a great impact in teaching. There may be several reasons for this. The major reason might be the instructional environment in schools. The other would be the nature of the education they get in the TEI. The third one could be the motivation in using the training skills and the fourth one could be the lack of professional commitment among teachers. Some of these issues have been explored through class observation and focused group discussions and will be discussed later.

What are the strengths and weaknesses of PST graduates?

The MOE officials, DEO and the headteachers were also asked to tell the strengths and weaknesses of the PST graduates. Again the same thing they repeated is that the strength of the

PST graduates is the theoretical knowledge of pedagogy. Regarding their subject knowledge the MOE officials do not have any complain but the kind of practical skills expected by them is not with them. Simply because of the lack of practical skills the teachers are not able to transfer their training to the classrooms. The DEOs however seem a little positive about their strengths. They say that the PST graduates have pedagogical skills and they know the techniques of meaningful learning. They also know the resources and their use in teaching. But, they further say in practice they are not better than other teachers in schools. They know but they follow the traditional technique of teaching. When they enter as permanent teachers, instead of using their training skills they feel relax and do not attempt any innovation in teaching. They have not been able to attract students towards their teaching in a motivating manner. One of the DEOs says that they just go to the classroom as “time-pass teaching”.

The headteachers assess the PST graduates who are appointed as teachers in their schools as the graduates have knowledge of teaching techniques, use of materials, and broad knowledge of the teaching context. But all these are limited in the theory only. They have not been able to demonstrate their skills in the classroom. They teach, they complete the course and that is all.

All the answers tell us that the PST graduates lack technical and professional skills. They know how to teach but never use their knowledge in classrooms because they do not have the skills to teach. They can tell everything when asked but they cannot do what they know. This is the crux of the problem of the PST graduates.

Have you made any initiations to improve PST?

As MOE officials, DEO and headteachers also have their responsibility to attempt from their part to help raise the quality standard of teacher training. In this context they were asked if they have done any remarkable job towards this.

It was found that none of them have initiated anything to this regard. They said they have advised the TEI instructors about the quality raising of the PST. This advice is not a kind of formal one. They say “when we meet them sometimes in workshops and seminars, we advise them”.

What were the expectations of student from PST and what did they get?

A focused group discussion was conducted among B.Ed degree holder teachers to explore their expectations while they were in college. There were 7 teachers from different schools participating in this discussion. The participants told they were equipped with the theory and principles of education while studying foundations of education and psychology. They also learned the principles of curriculum development and various evaluation models for student evaluation. They knew how teachers should motivate students. They were also taught the importance of instructional materials in classroom. However, their expectations were different. They thought they will be given time to practice the theories, the principles and techniques so that they could become good teachers in future. They were expecting school-based or classroom-based training in their colleges. They showed their dissatisfaction that they ended up with theoretical lessons within the four walls of the TEI. Now they are in trouble finding jobs as a teacher. They expected PST education to make them able to earn public trust and recognition but the result has been just opposite. Since B.Ed is equivalent to other Bachelor's degree as well they were expecting educational jobs other than teachers (like RP, Supervisor, curriculum expert, etc). They have experienced that it has been too tough to get such jobs with the kind of capacity they have.

How did the students prepare for the exam and what did they study?

They totally rejected the study of the prescribed and/or reference books for their study. Basically they were given notes dictated in class by their teachers. Or in some lectures they made short notes of the lecture. They studied the notes at times of examinations. Moreover, they bought guide book, supplementary question answer available in the market. Study was a priority only when the exam schedule was published (about a month ago of the exam). So they said they have all those theoretical knowledge in their mind but in practice nothing.

How was the instructional activities in college?

The teachers were also asked to tell about the instructional activities of their college including the theoretical and practical activities carried out in classrooms. They expressed their dissatisfaction about the process of teaching in PST colleges. Memorization of facts was the

main agenda of teachers by providing them written notes or by dictating the major points. Most of the classes followed the same suit. They said they were eager to do something in practice but besides micro teaching (that too was not managed properly) their three years curricula finished with theoretical learning. They were now in trouble when they have to use ICT in their classes because they were never oriented about this in their course. Only students with ICT specialization got this opportunity and for others it was not a chance.

How is the situation of applying PST knowledge and skills in schools?

They said they have been trying to do so. The problem is that they have little or no ideas on making learning meaningful through various activities. They have been trying what they studied in books. In fact, they told they are now in a lab where they are experimenting on their students. This exercise should have been the main agenda of PST colleges. Unfortunately, it did not happen. They learned an ideal situation of applying the training skills but the physical facilities of the schools and lack of resources they have not been able to apply their knowledge in the classrooms. With all frustrations, they said they did not get the knowledge and skills at par with quality teacher training programs of developed nations. The major lacking was the knowledge of ICT without which no one can expect quality in this modern world.

Any particular skills that the students learned in PST colleges?

Some positive thoughts were there among the participants. They said they learned how to teach in class based on student psychology. They have the skill in preparing a lesson plan in a given format. They also know which instructional materials are essential to teach the lessons. They have the knowledge of local resources too. Besides, they have ideas on classroom management. They also know different types of teaching from lecture to demonstration to discussion to other methods as well.

How many passed the exam? How many are teachers? What others are doing?

Only 30 percent passed in the examinations. Among them only 10 percent got opportunity to get through the Teacher Service Examinations. The rest are either underemployed or unemployed. Some of them are trying Public Service Commission and some are under employed in private schools. A very few of them are self-employed in business other than education. To their surprise, some of their B.Ed pass friends have also gone to Gulf countries as laborers.

How did B.Ed. help to become a teacher?

Many B.Ed. holders appeared the teaching license examinations and they got the license. They have license with them but there is no vacancy. B.Ed degree has been helpful to appear teaching license examinations. B.Ed. degree has also helped to become teachers because the kind of examination and interview TSC conducts are no different than what they learned in classrooms. “Classrooms taught us theory, final exam was based on theory, TSC exam was theory-oriented, and interview of course, was based on theoretical knowledge. So B.Ed helped us to become teachers.” The major problem started when they entered in their classes to teach with all these theory, theory and theory. They said their real exam has started now. It has been very difficult to make their teaching meaningful and relevant to students.

Any suggestions to PST colleges by the students?

They asked the PST colleges to start equipping students with practical classroom skills with more practice oriented curriculum. They also suggested to orient students with basic skills of ICT. Moreover, they want each PST College as reflection of real classrooms in the field. At least students should get an opportunity “to simulate as teachers in classroom” in the training session. Similar FGD was also conducted with B.Ed students who aspire of becoming teachers in future. The following section describes their view.

What is the reason behind enrolling in B.Ed. program?

They had several expectations from their degree. The core intent was to become a teacher. They are in a hope that they could become efficient teachers with newer skills that are necessary to make the students competent globally. They are in the opinion that once they become teachers they can educate the nation. The other reason why they enroll in B.Ed. was that B.Ed. holders do not require training to become teachers.

Do students have any other expectations from B.Ed.?

They were very much hopeful that they will have a strong base of education as B.Ed. holders with an in-depth knowledge on philosophy, psychology and research. B.Ed. as they say would be facilitating them to get teaching license. They also expressed their interest in B.Ed. because it will help them to become school supervisor and district education officer.

How do students judge B.Ed. curriculum?

They have already realized that the contents are overloaded with a little or no room for practice skills in the curricula. The curriculum lacks the modern standard of teaching strategies (21st century skills for a teacher). They said there are anomalies between the B.Ed. curricula and secondary school level curricula so that there might be a problem to associate their knowledge to subject teaching in schools.

Do students think this curriculum will help them to become better teachers?

They are positive in this regard that they are learning how of teaching in different subjects. Moreover, they are also hopeful that by the end of the course they will have strong background on “what to teach” in schools. They think they will be equipped with knowledge and skill related with activity-based pedagogy. These will help them to become better teachers in future but they also said that it is possible only through practical activities, experiential activities and school-based training. They said they can only hope and it depends upon the college and its faculty members.

Do teachers in their classes use pedagogical principles?

“Teachers focus more on lectures. They explain much and try hard for us to understand the meaning; but they never let us practice what we have learnt.” This is exactly what they told. They were not satisfied with the kind of instructional activities their teachers are doing. They felt the classes gave them much contents but they lack the way to link those knowledge in school situation tomorrow.

Do they think they can transfer their knowledge and skills to schools?

It depends, they said. “If the schools have enough resources that we learnt in our courses then it is possible to use our knowledge in classrooms”. Although the teachers do not demonstrate them the techniques of using the resources (tell only the importance) they have a kind of spirit that they can do it.

Do they think there should be any change in curriculum?

Teacher training curriculum should be practical and activity-based so that they could gain enough experience before they become teachers. Even contents, they said, should be refined and added new ones to catch up the 21st century world. Immediate action is required to match the

school teaching subject matters with the training curricula of B.Ed. They feel lacking of project work, field activities, experiential practice, report writing and research-based knowledge in B.Ed. curriculum. Moreover, they felt the lacking of ICT use in their classes. Without ICT “how can we become good teachers?” they said. The practice teaching of 45 days is also not enough and it should be given the priority by increasing the time up to 6 months. Getting training and becoming teachers are not enough. They said until and unless they are put through professional development, the knowledge they are getting would be useless.

What message do we get from real classrooms?

Attempts were made to observe classes both in the TEIs and in the schools to see if the training classes at TEI and teaching classes at schools reflect quality. Mathematics teaching, Science teaching, English Language teaching, Nepali Language teaching and Education subject were observed in the TEI. Similarly Mathematics, English and Science teaching were observed in the schools. The schools were selected purposively.

TEI

Looking at the physical infrastructure of the class it was not convincing that the TEIs were running their programs in a genuine environment. The age-old furniture, dirty floors and unclean walls are some of the common impressions of training classes. Moreover, outside sound has disturbed the classroom teaching.

Nepali language trainer was teaching with the textbook. No activities were carried out in class. It was a didactic method where the teacher speaks the whole class. With this kind of training it seemed that the prospective teachers learn nothing but to lecture in class. Although the content was based on school curricula the practical aspect of student activities was nil. Same case was found in English Language teaching.

In Mathematics it was observed that the trainer was busy copying the solution of mathematics problem which he had prepared in a notebook. It was totally a one-way pedagogy from teacher to the students.

In Science teaching the teacher was found to be using some materials to clarify the concept to the students. However, the coming and going of students inside and outside of the class was

disturbing the teaching. However, the science teacher took his class in the science lab which provided opportunity to the students to experience some practical lessons.

In education, the trainer was found to dictate his note to the students. Students were busy writing as the teacher said. No interaction was made with the students.

Schools

The furniture were very old covered with dust. There were dirty chairs and tables in the class. No reference materials were suggested by the trainers. The trainer was translating the English lessons to Nepali while teaching. Some old question collection and reference books were used in class. Formula-based solution was the pedagogy used by mathematics teacher. There was no use of instructional materials but students were remained busy solving math problem on the basis of formula given to them. In science the teacher was explaining what was there in the textbook, but he has used relevant instructional material for the content he was dealing.

Overall, the teaching was one way from the teacher to the students. The textbook based teaching as prevalent in schools observed. There was very few or almost nil use of instructional materials to clarify abstract concepts to the students.

Curriculum Analysis of Preservice Teacher Education

Let us now see the curriculum of Preservice Teacher Education. This analysis has been carried out on the domains of learning as devised by Benjamin S Bloom. Later the taxonomy (especially the cognitive domain) was revised by Lorin Anderson, a former student of Bloom, and David Krathwohl. (See Annex). The following provides a clear picture of the curricular goal of Mathematics, Science and Nepali Education prescribed for B.Ed as evaluated on the basis of revised cognitive domain. The analysis has been divided into two headings: low cognitive domain and higher order skills. In principle teacher preparation courses must follow the higher order skills to make the prospective teacher competent in intellectual abilities. The Low level cognition in this table indicates such levels like Remembering, Understanding and Applying the knowledge. And the higher order thinking indicates the levels like Analyzing, Evaluating and Creating.

Table 5: Curriculum analysis of B.Ed. level in selected specialization subject area (Nepali Education)

Level	Total Specific Objectives		Low level cognition		Higher order skills	
	Paper 1	Paper 2	Paper 1	Paper 2	Paper 1	Paper 2
3 year B.Ed 1 st year	68	38	52	31	16	7
3 year B.Ed 2 nd year ***	44	66	33	53	11	13
3 year B.Ed 3 rd year ****	49	41	38	29	11	9
4 year B.Ed 1 st year	44	36	36	26	8	10
4 year B.Ed 2 nd year	82	61	80	63	2	17

(Note; ***Out of the three courses नेपाली कथा र उपन्यास, र नेपाली भाषा शिक्षण are taken as paper 1 and paper 2

****Out of three courses प्रायोगिक भाषा बिज्ञान र नेपाली भाषा पाठ्यक्रम, पाठ्यपुस्तक तथा शिक्षण पद्धति are taken as paper 1 and paper 2.)

Very few attention has been paid towards higher level cognition while preparing the curriculum. Whether it is 3 years or 4 years the curricula basically aims at lower level cognition. If one sees the curriculum it is easier to see know, define, describe, explain like terms in the specific objectives. The specific objectives refer to the learning outcomes to be achieved by the students at the end of the course.

Table 6: Curriculum analysis of B.Ed. level in selected specialization subject area (Science Education)

Level	Total Objectives		Low level cognition*		Higher order skills**	
	Paper 1	Paper 2	Paper 1	Paper 2	Paper 1	Paper 2
3 year B.Ed 1 st year	21	140	18	127	3	13
3 year B.Ed 2 nd year	103##	73	80	53	23	20
3 year B.Ed 3 rd year	--	--	--	--	--	
4 year B.Ed 1 st year	103##	127	80	119	23	8
4 year B.Ed 2 nd year	179	118	142	108	37	10

Same curriculum (Ditto): Physics

Science Education seems more optimistic having up to 179 objectives for a 100 marks subject. By science one understands the skills to be learned by the prospective teachers so that s/he would be able to teach practically in the schools tomorrow. The science subjects have 20 percent practical and 80 percent theory. Again this subject has done no justice to the students because the theory portion has put the practical in shadow. Similarly, very few learning outcomes are there to enrich the prospective teachers with higher order thinking skills. Around 80 percent and in some cases more learning outcomes are low level cognitive skills.

Table 7: Curriculum analysis of B.Ed. level in selected specialization subject area (Mathematics Education)

Level	Total Objectives		Low level cognition*		Higher order skills**	
	Paper 1	Paper 2	Paper 1	Paper 2	Paper 1	Paper 2
3 year B.Ed 1 st year	32	66#	18	47	14	19
3 year B.Ed 2 nd year***	75	31	54	25	21	6
3 year B.Ed 3 rd year	80	63	55	39	25	24
4 year B.Ed 1 st year	32	66#	19	47	13	19
4 year B.Ed 2 nd year	55	55	39	38	16	17

***out of the three courses 2 courses Geometry and Teaching Mathematics are analyzed as paper 1 and paper 2.

Ditto the same course no change (Paper 2: Calculus)

Comparatively some attempts have been made in Mathematics teaching to provide higher order thinking to the pre-service teachers. In some cases this subject is found to be more optimistic having 80 learning outcomes for a 100 marks subject. However, the curriculum is found to have higher order thinking more than Nepali and Science subjects.

Although attempts were made to revise the 3 years curriculum to 4 years the strength of the curriculum in higher order thinking skills is still poor. Comparing the 3 year's and 4 year's curricula in the three major subject did not indicate any progress regarding the high level cognition of the prospective teachers.

Conclusions

The following table is prepared based on the case study research of 7 exemplary teacher education and training (Oberg, 2001; Hébert, 2001; Glickman, 2001, Weiner, 2001; McCall, 2001), the role of ICT in Teacher Education (Wagley 2008) and an audit of 11 different countries' (SEAMEO INNOTECH, 2010, p.2) common themes of pre-service teacher education. The evaluation of Nepal's PST curricula is based on the findings of this research at hand.

Table 8: 21st century skills and our pre-service teacher education curriculum

	Required Competency as per research	Competency as per our PST curriculum	Strategies to adopt
1	Clinical experiences, creating a coherent set of learning experiences	To some extent yes basically from practical part of the curricula	Start revising curricula with skill-based contents
2	Well-defined standards of professional practice with a guide and evaluate course and clinical works.	Not in our practice	List the competency standards of Nepali pre-service teachers before revising further curricula
3	Strong core curriculum in the context of practice and grounded in knowledge of the child and adolescent development and learning.	Foundations and Psychology courses cover this area beautifully	Link this content with teacher professional development agenda
4	At least 24 to 36 weeks of supervised practicum and student teaching opportunities.	We are poor in this regard. We have only 6 weeks supervised practicum in our system	Increase practice-based activities.
5	Extensive use of a variety of case methods, teacher research, performance assessment and portfolio evaluation	We are focusing more on contents and theory rather these activities. Very few is mentioned in the curricula.	An in-built action research need to be added in each subject area so that “would-be teachers” will be able to conduct research.

6	Strong relationship, common knowledge and shared belief among school-based and university-based faculty jointly engaged in transforming teaching, schooling and teacher education and training	We do not have such practice in designing and/or implementing teacher education curricula.	Teacher education is practiced in schools. So training implementation should be school-based. Even Curriculum preparation should be an agenda of joint activity of TEI and schools. Then it ensures the need of the schools fulfilled.
7	Professional knowledge towards the mastery of content and methodology for teaching	More focus on content than in Methods	Make the contents in higher order thinking skills so that professionalism is demonstrated in teachers.
8	Professional skills referring to pedagogies, classroom management, and learner assessment	Skills in doubt as the data show. Professional knowledge of our product is good in all these aspects	Make our teachers skillful in practicing the content they study. Do not leave them by simply giving the contents.
9	Personal characteristics – referring to personal traits such as being responsible, punctual	These are covered through pedagogy courses	Each subject should deal this in its methods part.
10	Professional/Personal ethical standards and values referring to sound and ethical standards of ethics and morality resulting in teachers being good role	These ethical part has also been covered through pedagogical courses in one or the other way	Each subject should deal this in its methods part

	models in the school and the community		
11	Professional development and lifelong learning undertaken by teachers such as participation in professional teacher organizations and activities, and other elements that demonstrate a desire to enhance the teaching profession	Not in the sense of lifelong learning but our teachers participate in the activities of professional teacher organizations like University Teachers Association	Let the pre-service teacher trainee be united under their own professional organization and focus more on life long learning and relevancy of teacher education in 21 st century.
12	In-depth knowledge of ICT and its use in instructional activities	Only ICT specialization courses offer this opportunity to the student enrolled. In other courses it is non-existent.	It has been too late for us to start ICT knowledge in the teacher education courses. Immediate inclusion of ICT in all courses desired.
13	ICT-based pedagogy with the use of MOODLE and other ICT resources	Not specifically MOODLE but students with B.Ed in ICT only get this	Let the teachers practice ICT-based pedagogy in their practical work in all subjects
14	Skills in using ICT hardware and software	Very less even in B.Ed. in ICT	At least the “would-be teachers” must know the kind of software and hardware related with their subject area. Let this be practiced in TEIs.

Strategies for future

The following table borrowed from NCERT would be pertinent for us to ponder on the strategies to develop teacher education in our context for the future.

Table 9: Strategies for future actions for teacher preparation

From	To
Teacher centric, stable designs	Learner centric, flexible process
Teacher direction and decisions	Learner autonomy
Teacher guidance and monitoring	Facilitates, support and encourages learning
Passive reception in learning	Active participation in learning
Learning within the four walls of the classroom	Learning in the wider social context the class room
Knowledge as "given" and fixed	Knowledge as it evolves and created
Disciplinary focus	Multidisciplinary, educational focus
Linear exposure	Multiple and divergent exposure
Appraisal, short, few	Multifarious, continuous

Besides the above mentioned agenda, our strategy for teacher education for the future must also concern in the following areas.

1. Research and Innovation: Innovation in teacher education based on the growing market knowledge and needs is the demand of time. Research is the key factor to innovate anything. From action research to other academic research a pre-service teacher must

know the methods of carrying out them. They should start researching their own classroom first and then move to the macro-level school based research.

2. Culturally responsive pedagogy: In schools today, students with disabilities are disadvantaged and excluded from the opportunities other students are getting. Plus children from disadvantaged communities are socially excluded. Teacher education curricula must address these aspects so that a teacher will be able to design his lessons in an equity basis.
3. ICT in Schools and e-learning: Unless teachers are equipped with ICT skills our students will not meet the quality of knowledge for tomorrow's world. Each and every subjects taught within TEI must incorporate ICT-based pedagogy.

Campaigning for pre-service teacher education by organizations like NCEN

At local level

Since our constitution has given all responsibility to the local level, it is high time to campaign the quality through teachers in schools. After the election the local leaders need to be advocated towards the importance of teachers and teacher education from pre-primary to secondary level. A list of teacher's competency need to be developed and local leaders should be convinced that their schools require those skills to become a teacher. With this the local government will put pressure on the TEI so that their curriculum will also be enriched.

At provincial level

Let the provincial leaders be convinced that the quality depends upon the capability of teachers. To make each province competitive a common agenda of teacher development need to be developed. The agenda must also include the minimum standards to become a teacher in the province. Through workshops and seminars institutions like NCEN should bring all stakeholders together to design a framework of quality teachers so that each TEI follows the frame.

At federal level

This is policy making body in education. At federal level there should be a campaign to advocate policies in teacher education. The quality of education provided by the local levels depends upon the policies devised by the federal and provincial levels. Thus educational policies at the central level must incorporate teacher education as major agenda for quality education plus a mandatory provision of teacher professional development schemes at local, provincial and federal level.

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ANNEX 1

Table 10: Paradigm shift in Education

	First Wave Paradigm	Second Wave Paradigm	Third Wave Paradigm
Nature of Education	Education is to deliver the planned knowledge, skills and cultural values from teachers and curriculum to students in a relatively stable society	Education is to provide a service to satisfy the needs and expectations of stakeholders in a competitive market	Education is to facilitate multiple and sustainable developments of students and the society in a context of globalization and change
Nature of Learning	To receive a set of knowledge, skills and cultural values for survival in an industrial society	To receive a kind of educational services and become competitive in a job market	To develop contextualized multiple intelligence (CMI) and high-level competence for multiple and sustainable developments in a fast

			changing era
Role of teacher	As knowledge deliverer or instructor	As educational service provider	As facilitator of multiple & sustainable development
Conception of teacher effectiveness	Internal effectiveness: the teacher's achievement of planned knowledge delivery through his/her teaching and other internal activities	Interface effectiveness: satisfaction of stakeholders with the educational services including education process and outcomes by the teacher; and teacher's accountability to the school and the public	Future effectiveness: the teacher's contribution to the multiple and sustainable developments of individuals, the community, and the society for the future
Aims of preservice teacher education	To equip prospective teachers with the necessary subject knowledge, professional skills and attitudes for effective	To equip prospective teachers with the necessary knowledge, skills and attitudes for provision of	To develop prospective teachers as facilitators who have CMI and high-level

	knowledge delivery to students	quality services to satisfy stakeholders' needs	professional competence to create unlimited opportunities for students' learning and multiple and sustainable developments
Models of pre-service teacher education	<p>Internal models:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Goal and specification model <input type="checkbox"/> Work process model <input type="checkbox"/> Absence of problem model 	<p>Interface models:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Resource-input model <input type="checkbox"/> Stakeholder satisfaction model <input type="checkbox"/> Accountability model 	<p>Future model</p> <ul style="list-style-type: none"> <input type="checkbox"/> CMI <input type="checkbox"/> Triplization: globalization, localization and individualization
Aim of innovation in teacher education	Improvement of delivery of planned professional knowledge, skills and attitudes to prospective teachers in the process of	Enhancement of satisfaction of stakeholders such as policy-makers, teacher employers, prospective	Creation of unlimited opportunities for professional learning and CMI development of prospective teachers

	teacher education	teachers and community leaders with both process and outcomes of teacher education	
Implications for innovation and practice in pre-service teacher education	<p>Innovation and use of ICT in teacher education are limited, mainly on improving the efficiency of delivery of planned curriculum and professional competence.</p> <p><input type="checkbox"/> Whether innovation through ICT can facilitate paradigm shift in teacher education is not a concern.</p> <p><input type="checkbox"/> The effectiveness of</p>	<p>Innovation and use of ICT in teacher education are limited, mainly on enhancing stakeholders' satisfaction and delivery of the necessary knowledge and skills for teacher interface effectiveness.</p> <p><input type="checkbox"/> Whether innovation through ICT can facilitate paradigm shift in teacher education is</p>	<p>Innovation and use of ICT are extensive in building up a networked environment for teachers' individualized, localized and globalized professional learning and CMI development.</p> <p><input type="checkbox"/> Innovation through ICT plays a key role to facilitate paradigm shift in education & teacher education.</p>

	<p>innovation depends on:</p> <p>1. How well the innovation in teacher education and professional learning be organized to deliver the necessary professional knowledge and skills to teachers?</p> <p>2. How well the delivery of professional knowledge and skills to teachers can be ensured through the innovative teaching, learning and field experience of teacher</p>	<p>not a concern.</p> <p><input type="checkbox"/> The effectiveness of innovation depends on:</p> <p>1. How well can the innovation ensure the performance of prospective teachers satisfying the key stakeholders' expectations and needs?</p> <p>2. How well can the innovation ensure the accountability of the teacher education services to the public and stakeholders?</p> <p>3. How well can the innovation enhance the image and reputation of</p>	<p><input type="checkbox"/> The effectiveness of innovation depends on:</p> <p>1. How well can the innovation through ICT globalize, localize and individualize teachers' professional learning and development?</p> <p>2. How well can the innovation maximize teachers' professional learning opportunities through establishing the borderless ICT environment, local and international networking, and various types of innovative</p>
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	<p>education programs?</p> <p>3. How well teacher educators' teaching can be improved through the innovation in a given time period?</p> <p>4. How well teacher learners can arrive at given professional standards with the support of innovation in the professional qualification examination or certification?</p>	<p>the teacher education institutions?</p>	<p>learning programmes?</p> <p>3. How well can the innovation facilitate and ensure teachers' professional learning to be sustained as potentially life long?</p> <p>4. How well can the innovation ensure and facilitate the development of teachers' ability to triplize their professional learning and development?</p> <p>5. How well can the innovation facilitate the development of</p>
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			<p>a CMI pedagogical environment,</p> <p>in which teachers are immersed and inspired to be self actualizing and developing CMI themselves</p>
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ANNEX 2

Table 11: Elements of a Successful PSTE Program

Element	Type of skill/understanding
Personal and professional growth as a teacher	<ul style="list-style-type: none"> • Fosters a sense of identity as professional teachers • Facilitates inquiry, reflective practice, and awareness of potential biases based on prior experiences (including perceptions related to teaching and learning as well as to gender, race, ethnicity, socioeconomic status, cultural and linguistic differences, etc.) • Develops a desire for personal and professional growth • Fosters an understanding of the professional ethics of being a teacher

Pedagogical content knowledge	<ul style="list-style-type: none"> • Encourages a balance between child-centered and direct instruction approaches toward teaching and places less emphasis on rote learning and emphasizes higher order thinking skills such as application and problem solving. • Encourages prospective teachers to connect different school subjects and promote holistic learning, through project-based and experiential learning, and where applicable, multi- and interdisciplinary education • Develops prospective teachers' exposure to multiple methods of organizing classroom activities, including a mixture of group, pair, and individual work as well as how to teach learners with different learning styles • Knows how to effectively teach different subjects (this includes pre-service teachers acquiring sufficient content knowledge, especially for core subjects such as language, mathematics, and science). • Knows how to link school subjects with local social issues, such HIV/AIDS and other health issues, gender issues, peace education , in a contextually appropriate and relevant manner
Content knowledge	<ul style="list-style-type: none"> • Emphasizes content knowledge of core school subjects such as language, mathematics, science, and social studies. • Connects learning in school subjects with the social and civic life of the students in a

	contextually appropriate manner, such as addressing peace education, HIV/AIDS, and other health and hygiene issues
Class room management	<ul style="list-style-type: none"> • Provides experience using curricular objectives and teaching and learning resources to develop unit and lesson plans. • Knows how to ask questions and respond to learners appropriately • Knows how to use positive reinforcement and constructive criticism appropriately • Knows how to encourage learners to take ownership of their own learning • Knows how to have learners participate in some classroom management tasks as appropriate. • Knows how to manage time effectively • Knows how to create, use, and manage teaching and learning resources • Knows how to teach multigrade classes, when applicable • Knows how to teach classes with a large number of learners (typical in many developing countries)
Assessment	<p>Knows how to assess learners' achievement and progress through formative (continuous) and summative (final) assessment</p> <ul style="list-style-type: none"> • Knows how to manage student marks and performance records

	<p>Develops a working repertoire of techniques of assessing students' learning, including the formative (continuous) assessment and summative (final) assessment</p> <ul style="list-style-type: none"> • Provides hands-on practice in keeping records of students' performance
Addressing special needs and challenges	<p>Sensitizes prospective teachers to the needs of and teaching methods for students with disabilities</p> <ul style="list-style-type: none"> • Extends the repertoire of classroom management to include management of very large classrooms and multigrade classrooms (typical in most developing countries) • Knows how to teach in special circumstances, such as during conflict or when natural disasters such as when earthquakes or flooding occurs. • Knows how to recognize and address issues related to gender discrimination, children with and/or affected by HIV/AIDS, and orphaned and vulnerable children
Child development and emotional/psychological support	<p>Understands children's cognitive, physical, and emotional development and how to teach accordingly</p> <ul style="list-style-type: none"> • Develops skills to identify and professionally address signs of learners' emotional and/or psychological distress and/or physical abuse

Professional collaboration	<ul style="list-style-type: none"> • Instills the value and importance of forming and participating in professional learning communities enabling teachers to work together to improve their teaching practices, discuss classroom related issues with other teachers, and form professional learning communities • Knows How to work with a mentor as well as become a good mentor themselves
Community engagement	<ul style="list-style-type: none"> • Fosters an awareness of the valuable and important potential role of parents and community members in children's learning • Knows how to work collaboratively with parents and community members to enhance and provide and get feedback from them pertaining to learners' achievement
Action research	<ul style="list-style-type: none"> • Helps prospective teachers reflect on and improve their professional practice • Develops ability to collect data about various aspects of his/her classroom practice, and use the data meaningfully to engage in reflection and make evidence-based changes in professional practice
Working within a system ⁷ of education	<ul style="list-style-type: none"> • Helps prospective teachers understand and manage expectations of immediate supervisors and other individuals within the system

	<ul style="list-style-type: none">• Develops ability to receive and respond to feedback from the supervisors' and others' feedback about their performance• Knows how to self-identify areas of professional practice that need improvement• Knows how to access sources of assistance within the system for improvement
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Annex 3

Table 11: Table of the Revised Cognitive Domain

Category	Examples, key words (verbs), and technologies for learning (activities)
<p>Remembering: Recall or retrieve previous learned information.</p>	<p>Examples: Recite a policy. Quote prices from memory to a customer. Recite the safety rules.</p> <p>Key Words: defines, describes, identifies, knows, labels, lists, matches, names, outlines, recalls, recognizes, reproduces, selects, states</p> <p>Technologies: book marking, flash cards, rote learning based on repetition, reading</p>
<p>Understanding: Comprehending the meaning, translation, interpolation, and interpretation of instructions and problems. State a problem in one's own words.</p>	<p>Examples: Rewrite the principles of test writing. Explain in one's own words the steps for performing a complex task. Translate an equation into a computer spreadsheet.</p> <p>Key Words: comprehends, converts, defends, distinguishes, estimates, explains, extends, generalizes, gives an example, infers, interprets, paraphrases, predicts, rewrites, summarizes, translates</p> <p>Technologies: create an analogy, participating in cooperative learning, taking notes, storytelling, Internet search</p>
<p>Applying: Use a concept in a new situation or unprompted use of an abstraction. Applies what was learned in the classroom into novel situations in the work place.</p>	<p>Examples: Use a manual to calculate an employee's vacation time. Apply laws of statistics to evaluate the reliability of a written test.</p> <p>Key Words: applies, changes, computes, constructs, demonstrates, discovers, manipulates,</p>

	<p>modifies, operates, predicts, prepares, produces, relates, shows, solves, uses</p> <p>Technologies: collaborative learning, create a process, blog, practice</p>
<p>Analyzing: Separates material or concepts into component parts so that its organizational structure may be understood. Distinguishes between facts and inferences.</p>	<p>Examples: Troubleshoot a piece of equipment by using logical deduction. Recognize logical fallacies in reasoning. Gathers information from a department and selects the required tasks for training.</p> <p>Key Words: analyzes, breaks down, compares, contrasts, diagrams, deconstructs, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, relates, selects, separates</p> <p>Technologies: Fishbowls, debating, questioning what happened, run a test</p>
<p>Evaluating: Make judgments about the value of ideas or materials.</p>	<p>Examples: Select the most effective solution. Hire the most qualified candidate. Explain and justify a new budget.</p> <p>Key Words: appraises, compares, concludes, contrasts, criticizes, critiques, defends, describes, discriminates, evaluates, explains, interprets, justifies, relates, summarizes, supports</p> <p>Technologies: survey, blogging</p>
<p>Creating: Builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure.</p>	<p>Examples: Write a company operations or process manual. Design a machine to perform a specific task. Integrates training from several sources to solve a problem. Revises and process to improve the outcome.</p> <p>Key Words: categorizes, combines, compiles, composes, creates, devises, designs, explains,</p>

generates, modifies, organizes, plans, rearranges, reconstructs, relates, reorganizes, revises, rewrites, summarizes, tells, writes

Technologies: Create a new model, write an essay, network with others

Annex 4

Table 13: An example matrix that has been filled in might look something like this:

The Knowledge Dimension	Remember	Under-stand	Apply	Analyze	Evaluate	Create
Facts	list	para-phrase	classify	outline	rank	Categorize
Concepts	recall	explains	show	contrast	criticize	Modify
Processes	outline	estimate	produce	diagram	defend	Design
Procedures	reproduce	give an example	relate	identify	critique	Plan
Principles	state	converts	solve	different-iates	conclude	revise
Meta-cognitive	proper use	interpret	discover	infer	predict	actualize