

त्रिभुवन विश्वविद्यालय ५९औं वार्षिक दिवस
२०७५ साउन ५ गते शनिबार
२१ जुलाई २०१८

त्रि.वि. बुलेटिन विशेषाङ्क - २०७५

विशेषाङ्क समिति

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उपकुलपतिको कार्यालय

साउन ५, २०७५

शुभकामना मन्तव्य

त्रिभुवन विश्वविद्यालयको ५९ औं वार्षिकोत्सवको अवसरमा त्रि.वि. सूचना तथा जनसम्पर्क महाशाखाद्वारा विभिन्न प्राज्ञिक, बौद्धिक तथा पेसागत सामग्री सहितको वार्षिक विशेषाङ्क २०७५ प्रकाशन हुन लागेकोमा अत्यन्तै खुसी लागेको छ।

त्रिभुवन विश्वविद्यालयले राष्ट्रिय आवश्यकता अनुसार उच्च शिक्षाको विकासमा महत्त्वपूर्ण भूमिका निर्वाह गर्दै राष्ट्रको उच्च शिक्षामा ८० प्रतिशतभन्दा बढी जिम्मेवारी बहन गरेको छ। स्थापना कालदेखि यस विश्वविद्यालयले देशको आर्थिक, सामाजिक, प्राविधिक, सांस्कृतिक तथा प्रशासनिक क्षेत्रको समयानुकूल विकासका लागि आवश्यक जनशक्ति उत्पादन गर्दै आइरहेको छ। हाल विश्वविद्यालयले सेमेष्टर प्रणालीलाई व्यवस्थित र विस्तार गर्दै स्नातक तहबाटै लागु गर्ने योजना बनाइ अगाडि बढिहेको छ। प्रविधियुक्त शिक्षाको विस्तारका लागि खुला तथा दूर सिकाइको माध्यमबाट कक्षा सञ्चालन गर्ने कार्यको थालनी गरिएको छ। अनलाइन फारम भर्ने व्यवस्थाको सुरुवात भएको छ। शैक्षिक कार्यतालिका निर्माण गरेर त्रि.वि.ले शिघ्र परीक्षाको नतिजा प्रकाशित गर्नुका साथै क्रेडिट ट्रान्सफरको नीति अवलम्बन गरेको छ। MBA-E, MBA-BF, BMTM जस्ता नयाँ कार्यक्रमहरुको सञ्चालन भएको छ। भापाको गौरादहमा कृषि क्याम्पस खोलिएको छ, भने चितवनको रामपुर कृषि क्याम्पस सञ्चालनमा आएको छ।

बुटवल र बर्दिवासमा मेडिकल कलेज र चितवनमा इन्जिनियरिङ कलेजहरु खोल्ने प्रक्रिया सुरु भएको छ। त्रि.वि.को विश्ववरीयतामा सुधार आएको छ। केन्द्रीय स्तरमा Research Endowment Fund को स्थापना गरिएको छ। अल्मुनाई एसोसिएसन गठन गरिएको छ। त्रिवि गुणस्तर प्रमाणीकरण तथा प्रत्यायन केन्द्रको स्थापना गरिएको छ। शिक्षाशास्त्रमा विषयगत रूपमा पिएच्.डी. गर्न पाउने व्यवस्था गरिएको छ। त्रिविको नियमानुसार ६३ वर्ष पुरा गरेपछि

अवकाशप्राप्त दक्ष तथा अनुभवी प्राध्यापकहरूको ज्ञान र सिपको सम्मान गर्नुका साथै त्रिविका विभिन्न कार्यक्रम तथा अनुसन्धानमूलक कार्यहरूमा सहभागी गराउन प्राध्यापक इमिरेटसको प्रचलन सुरु गरिएको छ। त्रिचालिसौं दीक्षान्तसम्मका भाषणहरू सङ्कलन गरी दीक्षान्त भाषणहरूको सङ्ग्रह प्रकाशन गरिएको छ। यी लगायत त्रि.वि.मा भए गरेका गतिविधिहरू यस वार्षिक विशेषाङ्कद्वारा जानकारी गराउन पाउँदा खुसी लागेको छ।

त्रिभुवन विश्वविद्यालयको ५९ औं वार्षिक दिवसको अवसरमा प्राज्ञिक तथा शैक्षिक र अनुसन्धानमूलक लेख रचना उपलब्ध गराउनुहुने सम्पूर्ण लेखकहरू तथा सम्पादक मण्डलका सदस्यहरू र यस कार्यमा सहयोग पुऱ्याउनुहुने सम्पूर्णलाई धन्यवाद दिन चाहन्छु।

अन्त्यमा ५९ औं वार्षिक दिवसको अवसरमा समस्त त्रि.वि. परिवार र सबै सरोकारवालाहरूमा हार्दिक शुभकामना व्यक्त गर्दछु।



प्रा.डा. तीर्थराज खनिया
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त्रिभुवन विश्वविद्यालय कीर्तिपुर, काठमाडौं, नेपाल

शिक्षाध्यक्षको कार्यालय

साउन ५, २०७५

शुभकामना

त्रिभुवन विश्वविश्वविद्यालयमा सेमेष्टर प्रणाली प्रारम्भक हुँदा म प्राध्यापकका रूपमा नेपाली केन्द्रीय विभागमा कार्यरत थिएँ । अन्धाधुन्धमा सेमेष्टर प्रारम्भ भयो र हामीले पनि अन्धाधुन्धमै पढायौँ । वार्षिक प्रणाली र सेमेष्टर प्रणालीका बिचमा रहेको भिन्नता न त हामीले आफैँ थाहा पायौँ न त अरू कसैले हामीलाई बुझायो । हामीले आफ्नो प्राध्यापन कार्यलाई त्यसरी नै निरन्तरता दियौँ जसरी त्यसअघि दिएका थियौँ । विद्यार्थीहरू त्रिविले पूर्वाधार विना नै सेमेष्टर प्रणाली लागु गर्‍यो भनेर विरोध गर्थे भने प्राध्यापकहरू पनि कोही समर्थन गर्थे त कोही विरोध गर्थे ।

मैले शिक्षाध्यक्षको जिम्मेवारी प्राप्त गरेपछि भने मेरो पहिलो ध्यान नै सेमेष्टर प्रणालीमा गयो । सुरुमा विश्वविद्यालय क्याम्पस कीर्तिपुरमा मात्र सो प्रणाली लागु गरिएको थियो । अब हाम्रो काँधमा यसलाई बिस्तार गर्ने जिम्मेवारी आएको थियो । हामीले दोस्रो चरणमा काठमाडौँ उपत्यकामा र तेस्रो चरणमा उपत्यका बाहिर सेमेष्टर लागु गर्ने योजना बनायौँ तर हामी आफैँ वर्ष शङ्करदेव क्याम्पसमा विद्यार्थीले समस्या खडा गरेका कारण उपत्यकामा सो प्रणाली लागु गर्न सकेनौँ । अर्को वर्ष भने हामीले कुनै पनि हालतमा लागु गरेरै छाड्ने सङ्कल्प गर्‍यौँ र सफल पनि भयौँ । हामीभन्दा अगाडिका पदाधिकारीलाई आफूले थालेको अभियानलाई निरन्तरता दिइने हो कि होइन भन्ने चिन्ता पनि थियो । उहाँहरूको चिन्ताभन्दा पनि समयको आवश्यकता हो सेमेष्टर प्रणाली हो भन्ने कुरा हामीले बुझेका थियौँ । यसवर्ष हामीले सो अभियानलाई उपत्यका बाहिर पनि पुऱ्यायौँ । अब त्रिविमा स्नातकोत्तर तहमा सेमेष्टर प्रणाली पूर्णरूपमा लागु भइसकेको छ । अबको हाम्रो अभियान स्नातक तहतर्फ सेमेष्टर प्रणाली लागु गर्ने रहेको छ । वास्तवमा उपर्युक्त प्रणालीको प्रारम्भ नै स्नातक तहबाट गरिनुपर्थ्यो । त्यसो गर्दा स्नातकोत्तर तहमा लागु गर्न कुनै मेहनत गर्नुपर्ने थिएन । प्रक्रिया उल्टो किसिमले अगाडि बढेकाले दुवै पटक उत्तिकै मेहनत गर्नुपर्ने भएको छ ।

अब रहयो 'पूर्वाधारविना सेमेष्टर लागु गरियो' भन्ने कुरा । पूर्वाधार भनेको के हो त भन्ने कुरामा म सोचमग्न भएँ । कक्षाकोठा त हामीसंग छँदै थिए । तिनलाई सेमेष्टर अनुकूल बनाउनु थियो । त्यसका लागि उच्च शिक्षा सुधार परियोजनाले बजेट दिएकै छ । त्यसपछिको अर्को सर्वाधिक महत्त्वपूर्ण कुरा भनेको पाठ्यक्रम हो । यसैले विषय समितिका अध्यक्ष र विज्ञसमूह सहित भएर अन्तरक्रिया गरी पाठ्यक्रमको एउटा खाका तयार गरी नौवटै दिन कार्यालयलाई २०७३ सालको माघको पहिलो हप्तामा उपलब्ध गराइयो । अहिले पाठ्यक्रम परिमार्जनको काम भइरहेको छ । पाठ्यक्रम त बन्ला तर त्यस पाठ्यक्रमलाई विद्यार्थीसम्म पुऱ्याउने काम त प्राध्यापकको हो ।

प्राध्यापकहरूलाई आजसम्म तालिम दिएको कुरा मेरो तिन दशकभन्दा बढीको प्राध्यापकीय जीवनमा अनुभूत हुन सकेको छैन र यो कुरा मेरो हृदयमा पीडा/कुण्ठाका रूपमा जमेर बसेको छ । यसैले मैले अमेरिकामा रहेर सेमेष्टरका बारेमा अध्ययन/अनुसन्धान गरिरहेका विद्वान् मित्र डा. घनश्याम शर्मासँग सरसल्लाह गरी उहाँकै पूर्ण सहयोगमा उतै बस्नुभएका डा. उत्तम गौली र डा.कृष्ण विष्ट समेतको सहकार्यमा 'बेबिनार सिरिज' सुरू गरें/गराएँ । लगभग डेढ वर्ष यसको निरन्तरता भएपछि दुई महिनाअघि (२०७५ जेठ) पहिलो चरणको समापन गरियो । त्यसबाट १० जना विशेषज्ञ तयार भयौं र सो समापनका क्रममा २ दिने सेमिनार गरी अरू ३४ जना प्राध्यापक साथीहरूलाई विशेषज्ञका रूपमा चयन गरी दोस्रो चरणको 'बेबिनार सिरिज' को प्रारम्भ समेत भैसकेको छ । पहिलो चरणको कार्यक्रम त्रिचन्द्र क्याम्पसका प्राध्यापक मित्र रामेश्वर अर्यालको आर्थिक/नैतिक सहयोगमा सम्पन्न भएको थियो र त्यो मेरो व्यक्तिगत प्रयास थियो । दोस्रो चरणको अभियानलाई भने मैले त्रिविमा भित्र्याएकी छु । यस क्रममा काठमाडौं मोडल कलेजका प्राचार्य सुरेन्द्र सुवेदीको प्राविधिक सहयोगको भूमिका अत्यन्तै महत्त्वपूर्ण रह्यो र उहाँको सो सहयोग दोस्रो 'बेबिनार सिरिज' का लागि पनि निरन्तर छ ।

पहिलो चरणमा सेमेष्टर लागु हुँदा जसरी हामी विश्वविद्यालय क्याम्पसका प्राध्यापक रनभुल्लमा थियौं ठिक त्यसैगरी अहिले काठमाडौं उपत्यका र बाहिरका प्राध्यापकहरू पनि रनभुल्लमा हुनुहुन्छ । यही समस्या समाधान गर्नका लागि हामीले विशेषज्ञको टोली निर्माण गर्न लागेका हौं । अबका तालिम त्रिविका छुट्टाछुट्टै क्याम्पसहरूमा हुनेछन् । त्यसका लागि तत् तत् क्याम्पसहरूले आ-आफ्ना क्याम्पसमा कक्षा तालिका प्रभावित नहुने गरी तालिमको आयोजना गरी विशेषज्ञ मगाउनु पर्नेछ ।

त्रिविमा सेमेष्टर प्रणालीमा देखापरेका मूल समस्या भनेको कक्षा कोठाभित्रको हो । वार्षिक र सेमेष्टर प्रणालीमा ज्ञान हस्तान्तरणको शैली फरक हुनुपर्छ । वार्षिक प्रणालीमा पढाइन्थ्यो भने सेमेष्टरमा पढ्न सिकाइन्छ । वार्षिक र सेमेष्टर प्रणालीको बिचको मूलअन्तर पनि यही हो । अब कक्षा कोठामा विद्यार्थीलाई सक्रिय बनाई उसले हासिल गरेको ज्ञानलाई जीवनोपयोगी र अविस्मरणीय बनाइन्छ । हामीले प्राध्यापकहरूलाई यसैका लागि तयार पार्ने हो । यसका लागि इ-लाइब्रेरीको अति नै आवश्यक पर्ने हुनाले त्रिवि त्यसको व्यवस्थापनका लागि पनि अघि बढिसकेको छ । फि वाइफाइको सुविधा कीर्तिपुर क्याम्पसमा अबका केही महिनाभित्र उपलब्ध भइसकेछ भने त्यसपछि उपत्यका भित्रका अन्य क्याम्पसमा र मोफसलका क्याम्पसमा क्रमशः उपलब्ध गराइने छ ।

सेमेष्टरका बारेमा यही अन्योल कायम रहेकै बेलामा त्रिविले आफ्नो वार्षिक दिवसका अवसरमा प्रकाशन गर्न लागेको विशेषाङ्कलाई सेमेष्टर विशेषाङ्कका रूपमा प्रकाशन गर्नु उचित लागेकाले मैले सोही अनुरूप यसलाई अगाडि बढाउन लगाएकी हुँ । यसमा राम्रा सामग्रीहरू जम्मा भएका छन् । देशदेखि विदेशसम्मका विद्वान्हरूको सहयोग उपलब्ध भएको छ । यस अङ्कलाई हामीले बढीभन्दा बढी क्याम्पस/कलेजहरूमा पुर्याउने लक्ष्य राखेका छौं । यस विशेषाङ्कका लागि उपलब्ध भएका सहयोगी हातहरूका कारणले आगामी दिनहरूका प्रकाशनका लागि पनि अत्यन्तै उत्साहित भएकी छु । प्राध्यापक एवं कर्मचारी मित्रहरूले जुन लगनशिलताका साथ यसको प्रकाशनलाई सम्भव तुल्याउनु भएको छ त्यसको लागि म आभारी छु ।



प्रा.डा.सुधा त्रिपाठी
शिक्षाध्यक्ष



त्रिभुवन विश्वविद्यालय कीर्तिपुर, काठमाडौं, नेपाल

रजिष्ट्रारको कार्यालय
साउन ५, २०७५

शुभकामना मन्तव्य

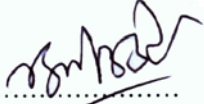
त्रिभुवन विश्वविद्यालयको ५९ औं वार्षिक दिवसको सन्दर्भमा त्रि.वि. सूचना तथा जनसम्पर्क महाशाखाले त्रिभुवन विश्वविद्यालयले लागु गरेको सेमेस्टर प्रणाली सम्बन्धी सामग्री समेटेर त्रि.वि. बुलेटिन वार्षिक दिवस विशेषाङ्क २०७५ प्रकाशनगर्न लागेकोमा खुसी लागेको छ।

स्थापना कालदेखि नै आफ्नो उद्देश्य अनुसार शैक्षिक गतिविधिमा निरन्तर क्रियाशिल रही आएको त्रिभुवन विश्वविद्यालयले हालको आवस्थामा पनि मुलुकको उच्च शिक्षामा ८० प्रतिशत योगदान पुर्याउँदै आएको छ। विश्वविद्यालयबाट उत्पादित जनशक्तिले राष्ट्रिय तथा अन्तर्राष्ट्रिय क्षेत्रमा नेतृत्वदायी भूमिका निर्वाह गरिरहेका छन्। समग्र राष्ट्रको शैक्षिक उन्नयनमा समर्पित त्रिभुवन विश्वविद्यालयले भाषा, इतिहास, संस्कृति जस्ता राष्ट्रिय आवश्यकताका विषयहरूको सम्बर्द्धन गर्नुका साथै विश्वमा भएको विकासलाई आत्मसात् गर्दै समयानुकूल नयाँ नयाँ विषय विस्तारका कार्यहरू एवं तिनीहरूको उचित पठनपाठन एवं गुणस्तरीयता कायम गर्न समेत क्रियाशिल रहिआएको छ। शिक्षण सिकाईमा प्रविधिको पहुँच, विस्तारका साथै मूल्याङ्कन प्रणालीमा सुधार जस्ता कार्यहरू सँगसँगै हुने गरेका छन्।

त्रिभुवन विश्वविद्यालयले विगतका वर्षहरूदेखिनै सेमेस्टर प्रणालीमा अध्ययन अध्यापन सुरु गरेको छ। यस प्रणालीको सुरुआतसँगै कक्षामा विद्यार्थीको उपस्थिति, नियमित मूल्याङ्कन, शिक्षक, विद्यार्थी बिच अन्तर्सम्बन्ध वृद्धि हुनाले शैक्षिक गुणस्तरमा अभिवृद्धि हुँदै गएको महसुस गरिएको छ। भर्खरै सुरु भएको सेमेस्टर प्रणालीको सेरोफेरोलाई उजागर गर्दै प्रकाशन हुन लागेको प्रस्तुत विशेषाङ्कले यस प्रणाली सम्बन्धी जिज्ञासा पुरा गर्न सहयोगी हुनेछ भन्ने मैले विश्वास लिएको छु।

यस विशेषाङ्कमा लेख रचना उपलब्ध गराउनुहुने सम्पूर्ण विद्वान् लेखकहरू र यसलाई सम्पादन गर्न सहयोग गर्नुहुने समितिका सदस्यहरू एवं यस कार्यमा सहयोग पुऱ्याउनुहुने सम्पूर्णमा हार्दिक धन्यवाद दिन चाहन्छु ।

त्रिभुवन विश्वविद्यालयको ५९ औं वार्षिक दिवसको उपलक्ष्यमा सम्पूर्ण महानुभावहरूमा हार्दिक बधाई र शुभकामना व्यक्त गर्दछु ।



डिल्लीराम उप्रेती
रजिष्ट्रार

विषय-सूची

<u>विषय</u>	<u>लेखकको नाम</u>	<u>पेज नं.</u>
❖ त्रिभुवन विश्वविद्यालयका चुनौती र समाधानका उपायहरू	प्रा.डा. ऋदिशकुमार पोखरेल	१
❖ नेपालको इन्जिनियरिङ् शिक्षा प्रणाली र अध्ययन संस्थानको भूमिका	त्रिरत्न बज्राचार्य बाबुराम दवाडी रामचन्द्र सापकोटा	६
❖ सेमेस्टर प्रणालीमा शोध-निर्देशन प्रक्रिया	प्रा.डा. दानराज रेग्मी	१३
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❖ Geopolitical Situation of Nepal: Role of BRI in her Prosperity & Development	<i>Dr. Khadga K.C Gaurav Bhattarai</i>	७१
❖ Semester System in Nepal: Talking a Collaborative, Constructivist Approach to Teacher Training	<i>Shyam Sharma Surendra Subedi</i>	८५
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त्रिभुवन विश्वविद्यालयका चुनौती र समाधानका उपायहरू

प्रा.डा. ऋदिशकुमार पोखरेल*

परिचय

विश्वविद्यालयलाई विश्वबजारमा देखिएका प्रतिस्पर्धामा जान आजको आवश्यकता भएको छ । त्यसको लागि गुणस्तरीय शिक्षाको विकल्प छैन । विश्वमा भइरहेको भूमण्डलीकरणले गर्दा आज जो कोही दक्ष र सीपमूलक व्यक्तिलाई जहाँ कही पनि काम गर्ने अवसरको सिर्जना भएको छ । एकातिर विश्वविद्यालयको लागि अवसरहरू देखिएका छन् भने अर्कोतर्फ विश्वविद्यालय विश्वबजारमा देखिएको प्रतिस्पर्धामा जान नसक्ने हो भने आफ्नो अस्तित्व नै सडकटमा पर्ने सम्भावना उत्तिकै बढेको देखिन्छ । नेपालको त्रिभुवन विश्वविद्यालय पनि विश्वबजारमा देखिएको प्रतिस्पर्धामा नजाने हो भनेत्यस्तै अवस्थामा पुग्न सक्ने स्थिति देखिन्छ । उदाहरणको लागि विश्वविद्यालयमा पढ्ने विद्यार्थी संख्यामा कमि हुँदै जानु र विदेशमा उच्चशिक्षा लिन जाने संख्यामा वृद्धि हुँदै जानुलाई लिन सकिन्छ । त्यसैगरी केही विधामा विद्यार्थीको संख्याज्यादै न्यून हुँदै जानु पनि एक उदाहरण हो । त्यसैले त्रिभुवन विश्वविद्यालयमा देखिएका चुनौतीहरूको समाधान गर्दैअगाडि बढ्नु आजको आवश्यकता हो ।

त्रिभुवन विश्वविद्यालय विश्वकै ठूलो विश्वविद्यालयमध्ये एक हो, जसको सञ्जाल देशभरि फैलिएको छ । यस अर्न्तगत पाँच वटा अध्ययन संस्थान र चार वटा सङ्काय रहेका छन् । ती अध्ययन संस्थान र सङ्काय अर्न्तगत ६१ वटा आंगिक क्याम्पस ३९ वटा केन्द्रीय विभाग र १०८५ वटा सम्बन्धन प्राप्त कलेजहरू रहेका छन् । हाल आंगिक र सम्बन्धन प्राप्त गरी ११४६ कलेजले देशको ७६ जिल्लामा विभिन्न विधाहरूका विषयहरू सञ्चालन गर्दै आएका छन् । त्यसैगरी यस विश्वविद्यालय अर्न्तगत चार वटा अनुसन्धान केन्द्रहरू पनि रहेका छन् । जसले विभिन्न क्षेत्रमा अनुसन्धान गर्नुका साथै अनुसन्धानमूलक लेखहरू प्रकाशित गर्दै आएका छन् । वि.सं.२०४० सालको दशकबाट प्रारम्भ भएको बहु विश्वविद्यालयको अवधारणासँगै हाल देशमा ११ वटा विश्वविद्यालय स्थापना भैसकेका छन् तापनि वर्तमान अवस्थामा समेत त्रि.वि.ले मुलुकको उच्च शिक्षामा ८० प्रतिशत योगदान पुऱ्याउँदै आएको छ । हाल त्रि.वि.मा जम्मा १६०१४ दरबन्दी रहेको छ जसमध्ये ७९२० शिक्षक र बाँकी ८०९४ प्रशासनिक एवं प्राविधिक जनशक्ति रहेका छन् ।

शैक्षिक कार्यक्रम, विद्यार्थी सङ्ख्या र उत्पादन

प्रारम्भमा त्रि.वि.का मुख्य कार्यक्रम, प्रमाणपत्र, स्नातक र स्नाकोत्तर तहमा केन्द्रित थिए भने हाल आएर स्नातक, स्नाकोत्तर, एम.फिल र विद्यावारिधि समेत रहेका छन् । सुरुमा वनविज्ञान, कृषि

* प्रा.डा. पोखरेल, त्रि.वि. योजना निर्देशनालयका कार्यकारी निर्देशक हुनुहुन्छ ।

र पशुविज्ञान, इन्जिनियरिङ्ग र चिकित्साशास्त्र बाहेक स्नातकको सबै कार्यक्रम दुई वर्षे रहेकोमा हाल सबै कार्यक्रमलाई क्रमशः चार वर्षमा रूपान्तरण गरिएको छ । २०६० को दशकमा सबै सडकाय र अध्ययनसंस्थानहरूमा नयाँ विधा थपिनुका साथै विद्यावारिधिसम्म कार्यक्रम सञ्चालन भई रहेको छ । सुरुमा एउटा मात्रै विश्वविद्यालय हुँदा उच्च शिक्षाको सबै भार त्रि.वि.ले मात्र बहन गर्नु पर्ने स्थिति रहेकोमा नयाँ विश्वविद्यालयको स्थापनासँगै नयाँ विषय र क्षेत्रगत रूपमा उच्च शिक्षामा जनताको पहुँच विस्तार भएको छ । तर अन्य विश्वविद्यालयको तुलनामा अधिकांश विषयमा शिक्षण शुल्क सस्तो भएको र दक्ष जनशक्तिको बाहुल्य हुनुका साथै राष्ट्रिय र अन्तर्राष्ट्रियस्तरमा त्रि.वि.को साख उच्च रहेकोले अहिलेपनि त्रि.वि.नै विद्यार्थीहरूको आकर्षणको केन्द्र रहेको छ । त्रि.वि.मा विगत केही वर्षदेखि श्रम बजारमा आएको परिवर्तनले गर्दा सडकायगत रूपमा अध्ययन गर्न चाहने विद्यार्थी संख्यामा परिवर्तन देखिएको छ । विगत पाँच वर्षको विद्यार्थी संख्या हेर्दा शैक्षिक वर्ष २०६९/०७० देखि २०७१/०७२ सम्म कम विद्यार्थी रहेको देखिन्छ भने शैक्षिक वर्ष २०७२/०७३ र २०७३/०७४ मा केही बढेको देखिन्छ ।

(तालिका १)

विद्यार्थी संख्या र उत्पादनको स्थिति

शै.व	विद्यार्थी संख्या	विद्यार्थी उत्तीर्ण संख्या	उपलब्धि प्रतिशत
२०६९/०७०	६०४४३७	७८२६७	१२.९%
२०७०/०७१	४०५३४१	५४१६२	१३.४ %
२०७१/०७२	२९८९९०	६१६७७	२०.६ %
२०७२/०७३	३६०२५४	८३४२८	२३.२ %
२०७३/०७४	३६७४२७	६८५७५	१८.७ %

विद्यार्थी भर्नाको तुलनामा उत्तीर्ण प्रतिशतलाई विश्लेषण गर्दा २०६९/०७० को तुलनामा केही सुधार भई १२.९% बाट बढेर २०७३/०७४ मा १८.७% पुगेको देखिन्छ । उच्च शिक्षामा हुने गरेको विचैमा पढाई छाड्ने विद्यार्थी संख्यालाई घटाएर परीक्षामा सम्मिलित विद्यार्थी संख्यालाई आधार मान्दा उपलब्धिको प्रतिशत करिब ४० रहेको छ । यदि सेमेष्टर प्रणाली अर्न्तगत सञ्चालित स्नाकोत्तर तहको हालको उपलब्धिको अवस्था मात्र हेर्दा ६०% भन्दा बढी रहेको छ ।

त्रिभुवन विश्वविद्यालयले क्रमिक रूपमा वार्षिक प्रणालीलाई विस्थापित गरि सेमेस्टर प्रणालीमा जाने निर्णय गरिसकेको छ र यसको कार्यान्वयन स्नातकोत्तर तहबाट सुरु भएको छ हाल देशभरि नै स्नातकोत्तर तहमा सेमेस्टर प्रणाली लागु गरिएको छ । सेमेस्टर प्रणालीमा निश्चित विद्यार्थी संख्या रहने गरेको छ । जसले गर्दा विद्यार्थी संख्या पहिलेको जस्तो हुल हुनेछैन । त्रिभुवन विश्वविद्यालयको आम्दानीको मुख्य श्रोत भनेको सरकारी अनुदान र शिक्षण शुल्क नै हो । त्रिभुवन विश्वविद्यालय सरकारी विश्वविद्यालय भएका कारण शुल्क वृद्धि सहज छैन । सरकारबाट सञ्चालनका लागि प्राप्तहुने एकमुष्ट अनुदान रकम शिक्षक/कर्मचारी तलबभत्ता र दैनिक प्रशासन सञ्चालन गर्न अपुग रहेको छ । यस्तो आर्थिक अवस्थाका कारण विश्वविद्यालयले शैक्षिक पूर्वाधार विकास र अनुसन्धान कार्यमा खासै लगानी गर्न सकिराखेको छैन ।

देखिएका चुनौती र समाधानका उपायहरू

- उच्चशिक्षामा नेपाल सरकारको नीतिगत अस्पष्टताका कारण पनि त्रि.वि.मा चुनौतीहरू देखिएका छन् । २०४६ सालको राजनीतिक परिवर्तन पछि उच्चशिक्षामा समसमायिक परिवर्तन ल्याउनका निमित्त उच्चशिक्षा आयोग गठन भई प्रतिवेदन २०४९ र २०५६ मा पेस भएको थियो । त्यसैगरी २०६२/०६३ को जनआन्दोलनबाट प्राप्त लोकतान्त्रिक गणतन्त्र राजनीतिक परिवर्तन पछि अब उच्चशिक्षामा हुनुपर्ने परिवर्तनको खाका तयार भएको छैन । त्यसैले नेपालको उच्चशिक्षामा हुने सुधारमा उच्चशिक्षा नीतिको अभाव सबैभन्दा ठूलो चुनौती रहेको छ । जसले गर्दा उच्चशिक्षामा के लाई कहत्तव दिने, लागत कसले व्यहोने र सरकारले कुन प्राथमिकतातर्फ लाने भन्ने बारे स्पष्ट हुन सकेको छैन । त्यसैगरी देशमा सङ्घीयता कार्यान्वयन भएपनि विश्वविद्यालयहरूलाई कसरी व्यवस्थापन गर्ने भन्ने प्रष्ट नीति नभएकाले सङ्घीयता लागु भैसकेको अवस्थामा त्रि.वि.को भूमिका के हुने भन्नेमा अस्पष्टता छ । नयाँ विश्वविद्यालयहरू खुल्दै गएको र त्रि.वि.का आगिक क्याम्पसहरूलाई नयाँ विश्वविद्यालयमा गाँभिएको हुँदा त्रि.वि.को भौतिक सम्पत्ति, शिक्षक कर्मचारीको दरबन्दी आदिमा विवाद सिर्जना भएको छ । तसर्थ सरकारले उच्चशिक्षा नीति ल्याउन र नयाँ विश्वविद्यालय खोल्नका लागि आवश्यक आधारहरू तोक्न अपरिहार्य भएको छ ।
- शिक्षा समयको माग अनुसार परिवर्तनशील छ । त्यसैले बजारमा विभिन्न नयाँ विधाहरूमा पाठ्यक्रम विकास गरी विद्यार्थीहरू अध्यापन गराई राखिएको अनुभव गरिरहेका छौं । नेपालमा पनि एक देखि बाह्र सम्मको शिक्षामा पाठ्यक्रम, पाठ्यपुस्तक र परीक्षा प्रणालीमा परिवर्तन भएको सङ्केत पाइन्छ । विश्वविद्यालयहरूसँग संयोजन नगरी विद्यालय शिक्षामा परिवर्तन गर्दा पठनपाठनको तरिका, परीक्षा प्रणाली र पाठ्यक्रममा असान्दर्भिक हुन सक्ने सम्भावना बढी भइ विवाद हुने परिस्थिति सृजना हुन सक्छ । त्यसैले विद्यालय शिक्षामा परिवर्तन गर्दा विश्वविद्यालयसँग सहकार्य गर्न आवश्यक देखिन्छ ।
- नेपाल सरकारको वर्तमान नीति कार्यक्रम (२०७५/०७६) ले विश्वविद्यालयलाई उत्कृष्ट प्राज्ञिक थलोको रूपमा विकास गर्ने र प्राविधिक तथा रोजगारमूलक शिक्षालाई प्राथमिकता साथ अगाडि बढाउने भनिएको छ । तर त्रि.वि. अर्न्तगत प्राविधिक जनशक्ति उत्पादन गर्ने संस्थाहरूलाई छुट्याइएको रकम अपर्याप्त भई शीपलाई चाहिने आवश्यक प्रयोगशाला समेत पर्याप्त नभएको अवस्था छ । जसले गर्दा त्रिभुवन विश्वविद्यालयले चाहेर पनि विद्यार्थीको संख्या बढाउन सकेको छैन । हाल त्रि.वि.मा प्राविधिक विषय पढ्ने विद्यार्थीहरूको संख्या १५% भन्दा पनि कम रहेको छ । विकसित मुलुकको तुलनामा यो ज्यादै कम हो । विकसित मुलुकमा प्राविधिक विषय पढ्ने र अप्राविधिक विषय पढ्ने विद्यार्थीहरूको संख्या झण्डै बराबरी रहेको पाइन्छ । त्यसैले सरकारले भौतिक पूर्वाधार जस्तै आवश्यक कक्षा कोठाहरू, प्रयोगशाला र दक्ष जनशक्ति पूर्ति नगरि प्राविधिक तथा रोजगारमूलक शिक्षा अगाडि बढाउने नीति कार्यान्वयन गर्दा गुणस्तरमा प्रश्न उठन सक्ने सम्भावना देखिन्छ ।
- अन्तर्राष्ट्रिय प्रचलित र गुणस्तरीय शिक्षाको लागि आवश्यक सेमेस्टर प्रणालीलाई त्रि.वि.ले अवलम्बन गरि स्नातकोत्तर तहमा लागु गरेको छ । जसको फलस्वरूप कक्षामा सुधार भई त्यसको प्रतिफल सकारात्मक देखिएको छ । सेमेस्टर प्रणालीको प्रतिफल सकारात्मक देखिए पनि केही चुनौती अझै देखिएका छन् । उदाहरणको लागि शैक्षिक पात्रो अनुसार कक्षा,

परीक्षा र परीक्षाको नतिजा प्रकाशित नहुनाले यसको प्रभावकारिता माथि प्रश्न उठन सक्ने सम्भावनादेखिएको छ । सेमेस्टर प्रणालीले शिक्षकहरूको कार्यभार पनि बढाएको छ । उदाहरणको लागि सेमेस्टर प्रणालीमा विद्यार्थीहरूले प्रोजेक्ट कार्य, आन्तरिक गृहकार्य, सामुहिक कार्य र कक्षामा प्रस्तुति गर्नुपर्ने हुन्छ, र शिक्षकले यी सबै कार्यको मुल्याङ्कन गर्नुपर्ने हुन्छ । जसले गर्दा शिक्षकहरू दिनभरि नै व्यस्त हुन्छन् । एकातिर केही शिक्षकले कक्षा नलिई सेवा सुविधा लिने र अर्कोतर्फ दिनभरि शैक्षिक कार्यक्रममा व्यस्तरहने शिक्षकले पनि उही सेवा सुविधा पाउने हुँदा काम गर्ने शिक्षकको काम गर्ने शैलीमा शिथिलता आई शैक्षिक कार्यक्रमको प्रभावकारिता असर परेको छ, तसर्थ त्यसरी व्यस्त रहने शिक्षकहरूलाई अतिरिक्त सुविधा दिई उनीहरूको मनोबल बढाए मात्र सेमेस्टर अर्न्तगत शैक्षिक कार्यक्रमलाई प्रभावकारी रूपमा अगाडि बढाउन सकिने हुँदा यसतर्फ पहलगर्न आवश्यक देखिन्छ । त्रि.वि.मा स्थायी भएपछि कक्षा नलिए पनि पदोनतिमा अनुभवको अङ्क दिइन्छ । यसरी पढाउने र नपढाउने दुवै खालका शिक्षकहरूलाई अनुभवको अङ्क दिँदा पढाउने शिक्षकको सही मूल्याङ्कन भएको देखिँदैन, तसर्थ कम्तिमा हप्ताको तिन पिरियत कक्षामा अध्यापन गर्ने शिक्षकलाई मात्र पदोनतिमा अनुभवको अंक दिने व्यवस्था भएमा कक्षा नलिई हिड्ने शिक्षकहरू निरूत्साहित भई कक्षा लिने तर्फ आकर्षित हुने छन् । त्यसैगरी ठूलो संख्याको विद्यार्थीलाई समाल्ने विभिन्न प्रकारका सेवा दिनुका साथै संस्थागत रूपमा अधि बढाउन कर्मचारीको ठूलो भूमिका हुन्छ, तसर्थ कुशल तथा सक्षम कर्मचारीलाई प्रोत्साहित नगरी प्रभावकारी रूपमा सेमेस्टर प्रणाली संचालन गर्न सहज हुँदैन ।

- त्रिभुवन विश्वविद्यालय सरकारी विश्वविद्यालय भए पनि एकमुष्ट अनुदान रकम प्राप्त गर्ने गरेको छ, प्राप्त एकमुष्ट अनुदानबाट त्रिभुवन विश्वविद्यालयमा सञ्चालित शैक्षिक कार्यक्रम सञ्चालन गर्न समेत पनि अपर्याप्त रहेको छ । त्यसै गरि त्रि.वि.ले सेमेस्टर प्रणाली लागु गरेका कारण विद्यार्थी संख्या कमीभै विश्वविद्यालयको मुख्य श्रोत शिक्षण शुल्कमा समेत कमी आएको छ । त्रि.वि.ले नेपालको उच्च शिक्षामा जनशक्ति उत्पादन गर्नका लागि ८०% योगदान गरे पनि राज्यबाट प्राप्त हुने रकमको ९८% रकम प्रशासनिक व्यवस्थापनका लागि खर्च हुने बाध्यता रहेको छ, जसले गर्दा त्रि.वि.ले अनुसन्धान तथा शैक्षिक गुणस्तरमा रकम विनियोजन गर्न सकेको छैन । त्यसै गरी त्रि.वि.ले २०६६ सालदेखि योगदानमा आधारित उपदानको व्यवस्था कार्यान्वयनमा ल्याएको भए पनि त्यसभन्दा अगाडि नियुक्ति भएका शिक्षक/कर्मचारीको पेन्सन, औषधी उपचार र सञ्चित विदाको रकम हालसम्म नेपाल सरकारबाट प्राप्त भएको छैन । त्यसैले त्रि.वि.को आफ्नो आम्दानीलाई शैक्षिक क्रियाकलापमा लगाउनुको सट्टा पेन्सन लगायतका क्षेत्रमा लगानी गर्नुपर्ने बाध्यता रहेको छ । नेपाल सरकारले पेन्सनका लागि अन्य निकायमा जस्तै व्यवस्थापन गरिदिएमा वा करिब १५ वर्षका लागि Endowment fund को व्यवस्था गरी त्यसको व्याजबाट पेन्सनको व्यवस्था गर्ने व्यवस्था गरिदिएमा त्रि.वि.ले आफ्नो आम्दानीबाट शैक्षिक कार्यक्रममा लगानी गरि प्रभावकारी रूपमा अगाडि बढाउने सक्ने सम्भावना देखिन्छ ।
- विकसित मुलकमा विश्वविद्यालयहरू अनुसन्धानमुखी हुन्छन् र अनुसन्धानमुखी लेख प्रकाशित गरि देशको नीति निर्माणमा सहयोग पुऱ्याउनुका साथै गुणस्तरीय शिक्षामा योगदान गरिरहेका हुन्छन् तर रकमका अभावले त्रिभुवन विश्वविद्यालयमा उल्लेखनीय खालका अनुसन्धान हुन सकेका छैनन् जसले गर्दा त्रि.वि. ले अर्न्तराष्ट्रियस्तरमा आफ्नो छवि बढाउन सकेको छैन । त्रिभुवन विश्वविद्यालय सरकारी विश्वविद्यालय भएका कारणदेशभरि

सेवा पुऱ्याउने विश्वविद्यालय तथा संसार कै एक ठूलो विश्वविद्यालय भनि चिनिएको अवस्थामा नेपाल सरकारबाट हुने सबै प्रकारका अनुसन्धान कार्यहरू विश्वविद्यालयबाट गराउने भनि नीतिगत पमै व्यवस्था हुन जरूरी देखिन्छ । जसले गर्दा अनुसन्धानका लागि आवश्यक रकम उपलब्ध हुने अवस्था हुनुका साथै शिक्षकहरूलाई अनुसन्धानमुखी बनाई गुणस्तरीय शिक्षा प्रदान गर्न सकिने सम्भावना देखिन्छ । प्राज्ञिक पदमा नियुक्ति र पदोन्नति गर्दा अनुसन्धानमुखी लेखहरूका आधारमा मात्र गरिने हो भने पनि शिक्षकहरूलाई अनुसन्धानमुखी बनाउन सकिने सम्भावना देखिन्छ ।

- त्रि.वि. मा रहेका केही पुराना स्थायी शिक्षकहरू अहिलेको बजारमुखी कार्यक्रममा योगदान दिन नसक्ने अवस्था रहेको देखिन्छ । एकातिर प्रतिस्पर्धामा जान विश्वविद्यालयले बजारमुखी कार्यक्रम सञ्चालन गर्नुपर्ने बाध्यता छ भने अर्कोतर्फ नयाँ कार्यक्रम सञ्चालन गर्न आवश्यक पर्ने मानव संसाधनलाई व्यवस्थापन गर्न ठूलो चुनौती रहेको छ । पुराना स्थायी शिक्षकहरूको बजारमुखी कार्यक्रममा योगदान दिनसक्ने अवस्थामा वृत्ति विकासको लागि अवसर दिने र वृत्तिविकासमा नजाने अवस्थाका शिक्षकहरूको हकमा एकमुष्ट रकम दिई विदाई गर्नेतर्फ अगाडि बढ्न आवश्यक देखिन्छ । यसको लागि त्रि.वि.ले नेपाल सरकारसँग सहकार्य गर्नु आवश्यक छ । यदि त्यस्तो गर्न सकेमाविदाई दिई खाली भएका शिक्षकको दरबन्दीबाट नयाँ कार्यक्रमलाई आवश्यक शिक्षकको व्यवस्थापन गर्न सहज हुनेछ ।
- हाल त्रि.वि.मा रहेको शिक्षक र कर्मचारीको दरबन्दीको आंकडाबाट शिक्षक भन्दा कर्मचारीबढी देखिन्छ । साधरणतया शैक्षिक संस्थामा शिक्षक संख्या नै बढी हुन्छ र हुनु पर्दछ । जसले गर्दा शैक्षिक कार्यक्रम सञ्चालन गर्न सहज हुन्छ । विषय शिक्षक अभावका कारण त्रि.वि.लाई बजारमुखी कार्यक्रम सञ्चालन गर्न असहज भएको छ । त्यसैगरी हाल त्रि.वि.मा सञ्चालित केही नयाँ कार्यक्रममा शिक्षक दरबन्दी नभएका कारण निरन्तरता दिन नसकिने अवस्था देखिएको छ । तसर्थ त्रि.वि.मा कर्मचारीको निवृत्ति पछि निवृत्त भएका केही दरबन्दीलाई क्रमशः २:३ को अनुपातमा शिक्षकतर्फ परिवर्तन गरेमा बजारमुखी कार्यक्रम सञ्चालन गर्न र सञ्चालित कार्यक्रमलाई प्रभावकारी बनाउनुका साथै निरन्तरता दिन सहज हुनेछ ।

निष्कर्ष

त्रिभुवन विश्वविद्यालय संसारकै ठूला विश्वविद्यालय मध्ये एकभएका कारण व्यवस्थापनमा चुनौती देखिए पनिउत्तिकै मात्रामा अवसरहरू पनि देखिएका छन् । त्रि.वि.को ठूलो संख्यामा रहेको जनशक्ति, देशभरिको सञ्जाल र अन्तर्राष्ट्रिय पहिचानले गर्दा विभिन्न देशका विश्वविद्यालयहरू त्रि.वि.लाई प्राथमिकतामा राखी सहकार्य गर्न उत्सुक देखिन्छन् । त्यसैगरी उच्चशिक्षा पढ्नको लागि अभै पनि त्रि.वि. आकर्षणको केन्द्र भएको देखिन्छ । यस परिप्रेक्ष्यमा त्रि.वि.ले देखिएका चुनौतीको व्यवस्थापन गर्न आवश्यक छ । खासगरि शैक्षिक कार्यक्रमलाई जनउपयोगी, बजारमुखी र सीपमूलक बनाई अगाडि बढनुका साथै आर्थिक र जनशक्तिको उचित व्यवस्थापन गर्न जरूरी देखिन्छ । यदि त्रि.वि.ले बजारमुखी र अनुसन्धानमुखी शैक्षिक कार्यक्रम, आर्थिक र जनशक्ति व्यवस्थापन र सेमेस्टर प्रणालीलाई प्रभावकारी रूपमा अगाडि बढाउन सके त्रि.वि. को अन्तर्राष्ट्रियस्तरमा अगाडि बढ्न सक्ने बलियो सम्भावना देखिन्छ ।

नेपालको इन्जिनियरिङ्ग शिक्षा प्रणाली र अध्ययन संस्थानको भूमिका

त्रिरत्न बज्राचार्य*

बाबुराम दवाडी**

रामचन्द्र सापकोटा***

विज्ञान तथा प्रविधि अन्तर्गतको इन्जिनियरिङ्ग शिक्षाको महत्त्व हाम्रो देशमा मात्र नभई विश्वमा नै उच्च छ र क्षमतावान प्राविधिकहरूको माग संसार भरि नै बढेको तथ्याङ्कहरूबाट देख्न सकिन्छ । यसै सन्दर्भमा हाम्रो जस्तो विकास-उन्मुख देशको लागि त गुणस्तरीय प्राविधिकहरूको निकै नै खाँचो देखिन्छ । भूकम्पले ध्वस्त भएका पुराना संरचनाको पुनर्निर्माण र नयाँ संरचनाको विकास, जलस्रोतको धनी साथै सूचना तथा प्रविधिमा खासै फड्को मार्न नसकेको अवस्थामा र नयाँ संविधान मार्फत देशको राजनीतिक तथा भौगोलिक परिवर्तन संगै देशमा प्राविधिक दक्ष जनशक्तिको आवश्यकता बढ्दै गएको पाइन्छ । इ.स. १९७२ देखि प्राविधिक शिक्षा सुरुभई प्रथम स्थापित इन्जिनियरिङ्ग अध्ययन संस्थान लगायत हाल देशमा इन्जिनियरिङ्ग शिक्षा प्रदान गर्ने थुप्रै विश्वविद्यालयहरूको स्थापना भैसकेको भए तापनि अपेक्षाकृत रूपमा शिक्षा प्रणालीमा सुधारका साथै गुणस्तरीय जनशक्ति उत्पादनमा सरकार तथा सम्बन्धित निकाएको ध्यानाकर्षण हुनु पर्ने देखिन्छ । माथिल्लो निकायको उचित भूमिका, शिक्षा नीतिमा ल्याउनु पर्ने सुधार र एकरूपता अनि शैक्षिक गतिविधिमा आधुनिकता अहिलेको माग हो । यस लेख मार्फत देशलाई आवश्यक पर्ने प्राविधिक जनशक्ति निर्माणमा स्थापनकालदेखि त्रिभुवन विश्वविद्यालय इन्जिनियरिङ्ग अध्ययन संस्थान (इ.अ.स.)ले खेल्दै आएको भूमिका, सेमेस्टर कक्षा प्रणाली, परीक्षा प्रणाली लगायत आदि विषयमा प्रस्तुत गर्नुको साथै गुणस्तरीय शिक्षा प्रदान गर्न देशको पुरानो र विश्वमान चित्रमा स्थापित इ.अ.स.को थप भूमिका र यसको चुनौतीका बारेमा समेत यहाँ प्रस्तुत गरिएको छ ।

१. सन्दर्भ

विकासोन्मुख देश नेपालको लागि विश्वस्तरका प्राविधिज्ञहरूको माग बढिरहेकै अवस्था हो । समाज निर्माणको आधारशिला भनेकै देशभित्रै उच्च स्तरीय प्राविधिक जनशक्ति निर्माण गर्नु हो र सो का लागि उच्च स्तरीय शिक्षालय हुनु जरूरी छ । गुणस्तरीय शिक्षा ग्रहण गर्न पाउनु भनेकै कुनै देशको नागरिकका लागि आधारभूत मागको रूपमा रहेको छ ।

* प्रा.डा. बज्राचार्य इन्जिनियरिङ्ग अध्ययन संस्थानका डीन हुनुहुन्छ ।

** प्रा. सापकोटा, इन्जिनियरिङ्ग अध्ययन संस्थान परीक्षा नियन्त्रण कार्यालयका सहायक डीन हुनुहुन्छ ।

*** श्री दवाडी इन्जिनियरिङ्ग अध्ययन संस्थान, पुल्चोक क्याम्पस, कम्प्युटर इन्जिनियरिङ्ग विभागका उप-प्राध्यापक हुनुहुन्छ ।

नेपालमा इन्जिनियरिङ्गको प्राविधिक जनशक्ति उत्पादनमा छ वटा विश्वविद्यालय सञ्चालनमा छन् । नेपालको सबैभन्दा ठूलो र पुरानो विश्वविद्यालयको रूपमा चिनिदै आएको त्रिभुवन विश्वविद्यालयको इन्जिनियरिङ्ग अद्यान संस्थानका आफ्ना आङ्गिक क्याम्पस र सम्बन्धन प्राप्त कलेजहरूमा गरि हाल जम्मा ३८४० जना विद्यार्थी भर्ना गर्न सक्ने क्षमता छ । त्यसै गरि काठमाडौं विश्वविद्यालय, पोखारा विश्वविद्यालय, पुर्वान्चल विश्वविद्यालय, मध्यमान्चल विश्वविद्यालय र लुम्बिनी बौद्ध विश्वविद्यालयहरूमा गरि प्रतिवर्ष थुप्रै विद्यार्थीहरू (लगभग १० हजारभन्दा माथि) ले इन्जिनियरिङ्ग शिक्षा अध्ययन गर्न सक्ने देखिन्छ । सरदरमा ४०% उत्तीर्ण अनुपात राख्ने हो भने पनि वर्षेनी चारहजार भन्दा बढी इन्जिनियरहरू उत्पादन हुन्छन् । यहाँ प्रश्न के हो भने: के यी उत्पादित प्राविधिकहरू अपेक्षाकृत रूपमा काम गर्न सक्ने क्षमता भएका छन् त? विश्वविद्यालयहरूले गुणस्तरीय शिक्षा प्रदानका लागि के कस्तो व्यवस्थापन र योजनाहरू बनाएका छन्? इन्जिनियरिङ्ग शिक्षामा विद्यार्थीहरूको बढ्दो आकर्षण संगै अपेक्षाकृत जनशक्ति उत्पादन भैरहेका छन् वा छैनन्? उत्तीर्ण हुन नसकेर वर्षौं पुनःपरीक्षा दिनुपर्ने अवस्था किन सृजना भैराखेको छ? गुणस्तरीय शिक्षामा संलग्न हुने शिक्षकहरूको अवस्था के छ? नेपाल सरकारको इन्जिनियरिङ्ग शिक्षा नीति के हो? आदि सवालकाबारेमा स्पष्ट हुन जरूरी देखिएको छ ।

२. नेपालमा इन्जिनियरिङ्ग शिक्षाको अवसर र चुनौती

इन्जिनियर वा डाक्टर जस्ता प्राविधिकहरू भनेका देश भरिबाट स्कुल शिक्षादेखि छानिदै आएका उच्चकोटीका क्षमतावान व्यक्तित्व मानिन्छन् । प्रत्येक वर्ष +२ विज्ञान (जीवविज्ञान र भौतिक विज्ञान)मा पासहुने लगभग ३३ हजार विद्यार्थीहरू इन्जिनियरिङ्ग पढ्न योग्य हुन्छन्, ती मध्यबाट विश्वविद्यालयले प्रवेश परीक्षामार्फत छानेर विद्यार्थी भर्ना गर्दछन् । वि.सं.२०५० को समय भन्दा अगाडि त्रिभुवन विश्वविद्यालय इन्जिनियरिङ्ग अध्ययन संस्थानमा मात्र केही थोरै कार्यक्रमहरू जस्तै सिभिल, इलेक्ट्रोनिक, मेकानिकल र इलेक्ट्रिकल इन्जिनियरिङ्गमा प्रति कार्यक्रम २४ जनालाई मात्र पढाइ हुने गर्थ्यो । प्रवेश परीक्षा मार्फत +२ तथा ओभरसियर पास गरेकाहरू मध्यबाट विद्यार्थीहरू छानिने हुनाले उच्च अंक प्राप्त गुणस्तरीय विद्यार्थीहरूले मात्र इन्जिनियरिङ्ग पढ्न सक्ने अवस्था थियो । तर नेपालमा २०४७ सालमा प्रजातन्त्र आए पश्चात् इन्जिनियरिङ्ग शिक्षा नीतिमा देखिएको उदारता संगै देशमा थुप्रै विश्वविद्यालयहरूको स्थापना भइ इन्जिनियरिङ्गका अन्य विधाहरूमा जस्तै कम्प्युटर, अटोमोबाइल, इन्डस्ट्रियल, जियोमेट्रिकस, बायोमेडिकल आदि कार्यक्रमहरूमा समेत पढाइ सुरु भयो । जसले गर्दा मध्यम स्तरका विद्यार्थीहरूले समेत इन्जिनियरिङ्ग शिक्षा आर्जन गर्न सक्ने अवस्थाको सृजना भयो । त्रि.वि.इ.अ.स. लगायत सबै विश्वविद्यालयहरूले प्रत्येक वर्ष प्रवेश परीक्षा लिई इन्जिनियरिङ्गमा भर्ना लिई अध्यापन गराउँदै आएका छन् । थुप्रै विद्यार्थीहरूले इन्जिनियरिङ्ग पढ्ने मौका पाए तर शैक्षिक संस्थाहरूको व्यापारिक गतिविधि बढ्दै गएको र इन्जिनियरिङ्ग शिक्षाको गुणस्तरमा खलल पुगेको पष्ट देख्न सकिन्छ । प्रत्येक वर्ष उत्पादित जनशक्ति बजारमा खपत हुन नसक्नु, न्युनरूपमा उत्पादित उच्चकोटीका जनशक्ति विदेश पलायन हुनु, कतिपय उत्पादित जनशक्तिहरू देशकै औद्योगिक आवश्यकतानुसार स्तरीय नहुनु, अध्यापन विधिलाई आधुनिकीकरण गर्न नसक्नु, प्रशासनिक ढिला-सुस्ती संगै सूचना-प्रविधिको अधिकतम प्रयोग गर्न नसक्नु, विश्वविद्यालयमा अनुत्तीर्ण विद्यार्थीको संख्या बढ्दै जानु, शैक्षिक संस्थाहरूमा गुणस्तरीय जनशक्ति उत्पादनका लागि आवश्यक न्यूनतम भौतिक पूर्वाधार साथै मानव स्रोतसाधनको अभाव हुनु, धेरैवर्ष प्राध्यापन गरि अनुभव प्राप्त गर्ने विज्ञहरू समेत विदेश

पलायन भैरहनु, पुरानै शिक्षण पद्धति कायम रहनु, समयको माग संगै पाठ्यक्रम परिमार्जन हुन नसक्नु, शिक्षक तथा विद्यार्थीहरूको साङ्गठनिक र राजनीतिक गतिविधिमा बढी संलग्नता हुनु, अन्तराष्ट्रिय मान्यता विपरीत प्राध्यापकहरू माथि निजामती कर्मचारीको जस्तो दृष्टिकोण राखि प्राज्ञिक स्वतन्त्रतालाई सङ्कुचित गर्नु, सरकारको इन्जिनियरिङ् शिक्षा नीति नहुनु साथै गुणस्तर मापदण्डमा एकरूपता नहुनु आदि विषयहरू प्राविधिक जनशक्ति उत्पादन र परिचालनमा चुनौतीको रूपमा रहेको देखिन्छ । यो अवस्था विश्वविद्यालयका अन्य विधाहरूमा भन्ने समस्याको रूपमा देखिन्छ ।

३. इन्जिनियरिङ् शिक्षा गतिविधिमा इ.अ.स. को इतिहास

नेपालको इन्जिनियरिङ् शिक्षाको सुरुवात इ.सं. १९४२ मा प्राविधिक तालिम केन्द्र (Technical Training School) थापाथलीको स्थापना संगै भएको देखिन्छ । तत्कालीन समयमा स्कूलको इन्जिनियरिङ् शाखामा टूड विषय र सिभिल सब-ओवरसियर कार्यक्रममा कक्षाहरू सञ्चालन हुन्थे । इ.सं.१९५९ मा भारत सरकारको सहयोगमा सिभिल ओभरसियरका कोर्सहरू (Diploma in Civil Engineering)कार्यक्रम अन्तर्गत सञ्चालन गरियो । इ.सं.१९६५ मा गणतान्त्रिक राज्य जर्मनीको सहयोगमा प्राविधिक विषयहरू Auto Mechanics, Electrical Engineering and Mechanical Drafting सञ्चालन गरियो । इ.सं.१९७२ मा नेपाल अध्ययन संस्थान (Nepal Engineering Institute) पुल्चोक र प्राविधिक तालिम केन्द्रलाई समायोजन गरि त्रि.वि.अन्तर्गत इन्जिनियरिङ् अध्ययन संस्थान (Institute of Engineering) को स्थापन भयो । साथै नेपाल अध्ययन संस्थानलाई पुल्चोक क्याम्पस र प्राविधिक तालिम केन्द्रलाई थापाथली क्याम्पस भनि नामकरण भयो । तत्पश्चात् इ.अ.स. दुरूस्त गतिमा बढ्दै गयो र हालको अवस्थामा आइपुगेको छ । इ.अ. स.को स्थापना संगै पुल्चोक क्याम्पसमा UNDP/ILO को सहयोगमा प्राविधिक कार्यक्रमहरू इलेक्ट्रिकल, लेक्ट्रोनिक्स, रेफ्रिजेरेसन/यअर-कन्डिसनिङ् को सुरुवात भयो । इ.अ.स. आफैले आर्किटेक्टर कार्यक्रमको पनि सुरुवात गर्यो । इ.सं. १९८४ मा विश्वब्याङ्क, स्विस सरकार र क्यानडा सरकारको संयुक्त सहयोगमा इन्जिनियरिङ् शिक्षा परियोजना सञ्चालन गरि त्यसै अन्तर्गत पुल्चोक क्याम्पसमा स्नातक तहमा प्रथम इन्जिनियरिङ् कार्यक्रमको रूपमा सिभिल इन्जिनियरिङ् विषयको सुरुवात भयो । स्नातकका अन्य कार्यक्रमहरू जस्तै इलेक्ट्रोनिक्स तथा कम्युनिकेसन, इलेक्ट्रिकल इन्जिनियरिङ् कार्यक्रमहरू खुल्दै गयो । साथै इ.सं.१९९५ मा थप कार्यक्रमहरू जस्तै मेकानिकल इन्जिनियरिङ् र आर्किटेक्चर विषयको पनि सुरुवात भयो । परियोजना सकिए लगत्तै पनि इ.अ.स.ले आफ्नै पहलमा २००१ मा कम्युटर इन्जिनियरिङ् र कृषि इन्जिनियरिङ् विषयको सुरुवात गर्यो । हाल अटोमोबाइल र जियोमेट्रिकस इन्जिनियरिङ् समेत गरि इ.अ.स. मा १० भन्दा बढी कार्यक्रमहरू स्नातक र २७ भन्दा बढी कार्यक्रमहरू स्नातकोत्तर तहमा साथै विद्यावारिधिका कार्यक्रमहरू सञ्चालन हुँदै आएका छन् । इ.अ. स. का पुल्चोक, थापाथली, पश्चिमाञ्चल र पूर्वाञ्चल गरि ४ वटा आङ्गिक क्याम्पस र १० वटा सम्बन्धन प्राप्त कलेजहरू छन् । स्नातक तहमा सञ्चालित कार्यक्रमहरू मध्य आङ्गिक क्याम्पसहरूमा १५३६ सिटमा र सम्बन्धन प्राप्त कलेजहरूमा २३०४ गरी प्रतिवर्ष जम्मा ३८४० विद्यार्थी संख्या इ.अ.स. मा इन्जिनियरिङ् पढ्न भर्ना हुने गर्दछन् ।

इ.स.१९९६ मा नर्वे सरकारको सहयोगमा पुल्चोक क्याम्पसमा Urban Planning, Structural Engineering / Water Resources Engineering विषयहरूमा स्नातकोत्तर कार्यक्रम सुरु

भय संगै पछिल्ला विभिन्न मितिमा नयाँ कार्यक्रमहरू थपिँदै हाल पुल्चोक क्याम्पसमा एकाइस, थापथली क्याम्पसमा दुई पश्चिमाञ्चल क्याम्पसमा तीन र पूर्वाञ्चल क्याम्पसमा एक गरि २७ स्नातकोत्तर कार्यक्रमहरू सञ्चालनमा छन् । साथै प्रतिवर्ष ५४० विद्यार्थीहरू स्नातकोत्तरका विभिन्न कार्यक्रमहरूमा भर्ना हुन्छन् ।

४. BE/BArch र M.Sc. को प्रवेश परीक्षा तथा विद्यार्थी भर्ना

कुनै पनि विषयको इन्जिनियर बन्नका लागि गणितको पृष्ठभूमि उच्च हुन जरूरी देखिन्छ । इ.अ.स.ले +२ मा कम्तीमा २०० पूर्णाङ्कको गणित विषय पास गरेकाले मात्र प्रवेश परीक्षामा सामेल हुने व्यवस्था अबै कयम राखेको छ । नेपालको +२ मा जीवविज्ञान समूहका विद्यार्थीले १०० पूर्णाङ्कको मात्र गणित पढ्ने हुनाले यदि ती विद्यार्थीले इ.अ.स. को प्रवेश परीक्षामा सामेल हुने हो भने १०० पूर्णाङ्कको थप गणित विषय पास गरेको हुनु पर्दछ । तथापि यो व्यवस्था नेपालका अन्य धेरै विश्वविद्यालयहरूमा भने छैन । तद अनुरूप १०० पूर्णाङ्कको मात्रगणित लिने बायो ग्रुपकाले थप १०० पूर्णाङ्कको गणित पास नगरीकनै अध्ययन गर्नपाउने अवस्थाले त्रि.वि. र अन्य विश्वविद्यालयमा विद्यार्थी भर्ना भई एकरूपता देखिँदैन । यो अवस्थालाई मध्यनजर गरी इ.अ.स. ले हालै समकक्षताको नयाँ नीति अवलम्बन गरेको छ । जस अनुसार +२ मा १०० पूर्णाङ्कको गणित पढि इन्जिनियरिड पास गर्नेहरूले त्रि.वि. समक्षता नपाउने निश्चितप्राय भएको छ ।

इ.अ.स. को BE/BArch प्रवेश परीक्षामा वर्षेनी बाह्र हजारभन्दा बढी आवेदक हुन्छन् । प्रत्येक विद्यार्थीको प्रथम रोजाइ इ.अ.स. पुल्चोक क्याम्पस रहने र अन्य आङ्गिक क्याम्पसहरू हुने गरेका छन् । आफ्नो रोजाइको क्याम्पस र कार्यक्रममा भर्ना हुन नसक्ने स्थिति भएपछि मात्र सम्बन्धन प्राप्त कलेज र अन्य विश्वविद्यालयहरू रोजाइमा पर्ने हालसम्मको अध्ययनले देखाएको छ । नेपालका अन्य विश्वविद्यालयहरूले आवश्यक सिट संख्या पूरा गर्नका लागि पनि विभिन्न चरणमा एकभन्दा बढी पटक प्रवेश परीक्षा लिने गरेको देखिन्छ । अति सुरक्षित, कडा र पूर्णतया कम्प्युटर प्रविधिमा लिने परीक्षाको उच्च विश्वसनीयता हुने भएकोले २०७३ सालदेखि नेपाल सरकार शिक्षा मन्त्रालयले इन्जिनियरिड शिक्षामा विदेश पठाउने छात्रवृद्धि कोटाहरूमा इ.अ.स. को यही प्रवेश परीक्षालाई मान्यता दिनु सहानीय छ जसले इ.अ.स. को प्रवेश परीक्षालाई थप गरिमायम बनाएको देखिन्छ । प्रत्येक विश्वविद्यालयको आ-आफ्नै प्रवेश परीक्षा लिने र त्यो पनि एकभन्दा बढी परीक्षा लिने पद्धतिले विद्यार्थीहरूलाई भने सास्ती हुने गरेको देखिन्छ । शिक्षा मन्त्रालयको यस कदमले भविष्यमा नेपालको कुनै पनि विश्वविद्यालयका क्याम्पस/ कलेजहरूमा अध्ययन गर्नका लागि इ.अ.स. को प्रवेश परीक्षालाई मान्यता दिन सकिने आधार तयार भएको छ । जसले गर्दा नेपाल भित्र इन्जिनियरिड पढ्नका लागि विद्यार्थीले एउटै मात्र प्रवेश परीक्षा दिए पुग्ने र गुणस्तरीय विद्यार्थी छनौटमा एकरूपता आउने देखिन्छ ।

विद्यार्थी भर्ना समेतलाई मर्यादित र एकरूपता कायम गर्न वि.स. २०७३ सालदेखि इ.अ.स.ले केन्द्रिकृत भर्ना प्रणालीको सरूवात गरेको छ ।

५. इ. अ. स. को सेमेस्टर परीक्षा प्रणाली

प्राविधिक शिक्षा सञ्चालन गर्ने अन्तर्राष्ट्रिय मान्यता अनुरूपनै चार वर्षको स्नातक कार्यक्रमहरूमा जम्मा ८ सेमेस्टर हुन्छन् भने आर्किटेक्चर विषयमा ५ वर्ष र १० सेमेस्टर हुन्छन् । त्यस्तै २ वर्षको स्नातकोत्तरमा ४ वटा सेमेस्टर हुन्छ । सोही अनुरूप इ.अ.स. परीक्षा

नियन्त्रण महाशाखाले नियमित र पुनःपरीक्षा गरी प्रतिवर्ष स्नातकमा पाँचवटा र स्नातकोत्तरमा दुईवटा परीक्षाहरू सञ्चालन गर्दै आएको छ । इ.अ.स. ले गुणस्तर अवस्थालाई ध्यानमा राख्दै २०७४ सालदेखि सेमेस्टर परीक्षा प्रणालीमा परिमार्जन गरेको छ । जसअनुसार प्रत्येक सेमेस्टरको बीचमा हुने पुनः परीक्षालाई सेमेस्टरको अन्तिममा हुने नियमित परीक्षा सकिएपछि सञ्चालन गर्ने निर्णय सँगै कक्षाहरू सहज रूपमा विना अवरोध नियमित कक्षा सञ्चालन हुने र विद्यार्थी-शिक्षक Contact Hour पनि बढ्ने हुनाले शैक्षिक गुणस्तरमा सुधार आउने अपेक्षा गरिएको छ । तद अनुरूप प्रत्येक वर्ष Odd Semester को कक्षाहरू मंसिर १ गते देखि फाल्गुण अन्तिमसम्म सञ्चालन हुने र उक्त सेमेस्टरको परीक्षा चैत्र महिनामा लिने साथै Even Semester को पुनःपरीक्षा वैशाख १५ गते भित्र लिइसक्ने व्यवस्था छ भने, Even Semester को कक्षाहरू प्रत्येक वर्ष वैशाख १६ देखि श्रावण अन्तिमसम्म सञ्चालन गर्ने र उक्त सेमेस्टरको परीक्षा भाद्र महिनामा सञ्चालन गर्ने साथै Odd Semester को पुनःपरीक्षा आश्विन महिनामा सञ्चालन गर्ने व्यवस्था गरिएको छ । यो व्यवस्थाले प्रत्येक वर्ष चैत्र १ देखि वैशाख १५ सम्म र भाद्र १ देखि आश्विन १५ सम्म क्यालेण्डरमा भएको व्यवस्था अनुरूपनै परीक्षा सञ्चालन हुने भएकाले इ.अ.स. को सेमेस्टर परीक्षा मर्यादित र व्यवस्थित छ । क्यालेण्डर अनुसार नियमित कक्षाहरूका सञ्चालन, परीक्षा सञ्चालन र समयमै नतिजा प्रकाशन गर्ने कार्यले इ.अ.स. को परीक्षा प्रणाली देशका अन्य संस्थाको भन्दा बढी व्यवस्थित र मर्यादित बनेको छ ।

५.१ सेमेस्टर परीक्षा प्रणालीको अटोमेसन

सूचना-प्रविधि विना एउटा परीक्षाको लागि १९,००० भन्दा बढी आवेदकको फारम प्रशोधन गर्ने, परीक्षा केन्द्र/केन्द्राध्यक्ष/निरीक्षक/सुपरीवेक्षक कायम गर्ने, ६०० भन्दा बढी प्रश्न-पत्र निर्माण तथा प्रशोधन, १९०० भन्दा बढी उत्तर प्याकेट प्रशोधन गर्ने कार्यहरू अत्यन्तै कठिन र त्रुटि समेत हुन सक्ने हुनाले सूचना प्रविधिको प्रयोगबाट परीक्षा व्यवस्थापन गर्न इ.अ.स.प.नि.म.शाखालाई चरणबद्ध रूपमा स्वचालित (Automate) गर्ने प्रतिबद्धता सँगै हालसम्म निम्न कार्यहरू पूर्ण रूपमा सफ्टवेयरबाट सञ्चालित भएको छ ।

शिक्षक/विज्ञ व्यवस्थापन प्रणाली : यस प्रणालीले इ.अ.स.मा कक्षा लिने सबै शिक्षक तथा विज्ञहरूको विस्तृत विवरण व्यवस्थापन गर्ने गर्छ । यस प्रणालीले गर्दा परीक्षालाई समयमै गोप्य कार्यहरू गर्न जस्तै Question Setting, Answer Paper Checking, Moderation, Sampling आदि आवश्यक पर्ने विज्ञहरूको सहज पहुँच भएको छ ।

विषय र पाठ्यक्रम व्यवस्थापन प्रणाली : सबै सेमेस्टरमा पढाइहुने विषयहरू कोड सहित र यसका सिलेवस व्यवस्थापन गर्ने कार्य यस प्रणालीबाट हुने गर्दछ ।

स्वचालित प्राश्निक नियुक्ति प्रणाली : नियमित अपडेट रहेको शिक्षक व्यवस्थापन प्रणालीबाट शिक्षकहरूको रोस्टर तयार हुने र सम्बन्धित विषयको विज्ञलाई प्राश्निक नियुक्ति गर्ने साथै नियुक्त विज्ञले समयमै कार्य गरे-नगरेको Tracking गर्ने जस्ता कार्यहरू यस प्रणालीबाट हुने गर्दछ ।

उत्तर पुस्तिका व्यवस्थापन प्रणाली : सम्बन्धित विषयका विज्ञहरूलाई उत्तर प्याकेट जिम्मा लगाउने र त्यसको Tracking/Follow-up गर्ने सम्पूर्ण कार्यहरू यस प्रणालीबाट व्यवस्थापन हुने गर्दछ ।

स्नातक तहको सेमेस्टर परीक्षाको स्वचालित नतिजा प्रशोधन तथा प्रकाशन प्रणाली : स्नातक तहका सबै परीक्षाको नतिजा प्रशोधन तथा प्रकाशन गर्ने, मार्कसिट तथा ट्रास्क्रिप निकाल्ने जस्ता सबै कार्यहरू यस प्रणालीबाट हुने गर्दछ ।

अनलाइन आवेदन फारम भर्ने र प्रवेश पत्र वितरण प्रणाली : २०७४ सालको माघदेखि इ.अ.स. ले सेमेस्टर परीक्षाको लागि आवेदन लिने कार्यलाई पूर्णतया अनलाइनबाट फारम भराउने व्यवस्था गरेको छ । यस प्रणालीबाट परीक्षार्थीलाई परीक्षा शुल्क तिर्न, फारम भर्ने र प्रवेश पत्र लिन अत्यन्तै सहज भएको देखिन्छ । सम्बन्धित क्याम्पस/कलेजहरूले आफ्नै लगिन पोर्टल मार्फत आफ्ना विद्यार्थीहरूको परीक्षा फारम रूजु गर्ने साथै उक्त पोर्टलबाट प्रवेश पत्र समेत उत्पादन गरि विद्यार्थीलाई उपलब्ध गराउने व्यवस्था मिलाइएको हुनाले सम्बन्धित क्याम्पस/कलेजहरूलाई पनि यस व्यवस्थापनले परीक्षा प्रणालीलाई थप चुस्त-दुरुस्त बनाएको पाइन्छ । साथै परीक्षा समयतालिका व्यवस्थापन, विद्यार्थीको विस्तृत विवरण व्यवस्थापन, परीक्षा केन्द्र निर्धारण, स्वचालित रूपबाट परीक्षा रोल नम्बर निर्धारण जस्ता कार्यहरू यस व्यवस्थापन प्रणालीका मुख्य विशेषताहरू हुन् ।

स्नातकोत्तर तहको सेमेस्टर परीक्षाको स्वचालित नतिजा प्रकाशन प्रणाली : स्नातकोत्तर तहका सबै परीक्षाको नतिजा प्रशोधन तथा प्रकाशन गर्ने, मार्कसिट तथा ट्रास्क्रिप निकाल्ने जस्ता सबै कार्यहरू यस प्रणालीबाट हुने गर्दछ ।

उल्लेखित प्रणालीहरू सँगै भविष्यमा अनलाइनबाट Assessment Marks बुझाउने तथा प्रशोधन गर्ने प्रणाली, प्रश्नपत्र ब्याङ्क व्यवस्थापन प्रणाली, प्रोजेक्ट तथा थिसिसहरू व्यवस्थापन तथा मूल्याङ्कन आदि प्रणालीहरू चरणबद्ध रूपमा तयार गर्दै परीक्षा प्रणालीलाई पूर्णतया स्वचालित बनाउने लक्ष्य रहेको छ ।

६. शैक्षिक गुणस्तर अवस्था र इ.अ.स.को भूमिका

त्रि.वि. इ.अ.स. नेपालको मात्र नभई संसारकै एक उत्कृष्ट संस्थानको रूपमा स्थापित भैसकेको संस्था मानिन्छ । इ.अ.स.बाट उत्पादित जनशक्ति उच्च गुणस्तरको हुने प्रमुख कारण नै यसको पूर्णतया कम्प्युटर प्रविधिबाट लिइने र उच्च पारदर्शिता कायम रहँदै आएको प्रवेश परीक्षालाई मान्न सकिन्छ । यसबाट उत्पादित जनशक्ति संसारको सबै कुनामा पुग्नु र आफ्नो पेशामा हुनुले नै संस्थाको पहिचान बढेको देखिन्छ । यद्यपि इ.अ.स.ले गुणस्तर नियन्त्रणमा थप भूमिका खेल्नुपर्ने देखिन्छ । तदनुरूप आधुनिक अध्ययन-अध्यापन प्रणाली, सम-सामयिक पाठ्यक्रमको विकास, विश्वविद्यालय र उद्योगसंगको सम्बन्ध आदिमा थप सुधारत्मक भूमिका खेल्नुपर्ने देखिन्छ । राम्रो गुणस्तरको विद्यार्थी संगै प्रशस्त भौतिक स्रोत साधन तथा प्रयोगशालाको व्यवस्था भएकाले गर्दा आङ्गिक क्याम्पसहरूको औसत विद्यार्थी उत्तीर्ण दर ८०% भन्दा माथिनै देखिन्छ तथापि सम्बन्धन प्राप्त कलेजहरूको विद्यार्थी उत्तीर्ण प्रतिशत भने कम रहेकोले औसतमा इ.अ.स.को उत्तीर्ण दर न्यून नै देखिन्छ ।

७. निष्कर्ष

देशको लागि मुख्य प्राविधिक जनशक्ति उत्पादन गर्ने उद्देश्यका साथ स्थापित इ.अ.स.को अबको बाटो अनुसन्धानमूलक शिक्षामा ध्यान दिनु पर्ने देखिन्छ। जस अनुसार स्नातकोत्तर र विद्यावारिधि विषयहरूको अध्ययन अध्यापनलाई प्राथमिकतामा राख्दै अनुसन्धानात्मक गतिविधिमा स्रोत-साधनको सही प्रयोग गर्नेतर्फ इ.अ.स.अधि बढेमा देशका लागि चाहिने अनुसन्धान तथा विकासमा ठूलो टेवा पुग्नेछ। सुरु देखिनै इ.अ.स.ले गुणस्तरीय शिक्षामा विशेष ध्यानराख्दै आएको छ। प्रवेश परीक्षालाई पूर्णतया कम्प्युटर प्रविधि मार्फत सञ्चालन गर्नुसाथै हाल आएर आफ्ना आङ्गिक क्याम्पसमा मात्रै नभएर सबै सम्बन्धनप्राप्त कलेजहरूमा समेत पूर्णतया मेरिटका आधारमा अनलाइन मार्फत केन्द्रकृत विद्यार्थी भर्ना प्रणाली लागु गर्नु, सेमेस्टर परीक्षा प्रणालीलाई सुधार गर्दै परीक्षाको गतिविधिहरूमा सूचना-प्रविधिको प्रयोग बढाइ स्वचालित बनाउँदै जानु, स्नातकोत्तर तहमा नयाँ-नयाँ कार्यक्रम थपगर्दै जानु लगायतका सद्धानीय कार्यहरूले इ.अ.स.को गुणस्तर सुधार तथा स्तरीयतामा थप टेवाभने पक्कै पुग्ने देखिन्छ। शैक्षिक गतिविधिलाई थप आधुनिकीकरण गर्ने र दुरुस्त गतिमा पाठ्यक्रम परिवर्तन गरि समसामयिक बनाउँदै जाने तथा मानवस्रोत साधनलाई चुस्त बनाई शिक्षकहरूलाई अनुसन्धानमुखी बनाउन र संस्थाको गरिमालाई विश्वस्तरमा थप उचाइमा पुऱ्याउन इ.अ.स.ले थप रणनीतिक भूमिकाहरू खेल्दै जानुपर्ने हुन्छ।

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सेमेस्टर प्रणालीमा शोध-निर्देशन प्रक्रिया

प्रा.डा. दानराज रेग्मी*

१. भूमिका

त्रिभुवन विश्वविद्यालयले मानविकी तथा सामाजिकशास्त्र सङ्घाय अन्तर्गत स्नातकोत्तर तहका सबै विषयहरूमा सेमेस्टर प्रणाली लागु गरेको छ । वार्षिक प्रणालीमा उपाधि प्राप्त गर्नका लागि केही विषयहरूमा मात्र अनिवार्य रूपमा विद्यार्थीहरूले शोधप्रबन्ध तयार गर्नु पर्ने व्यवस्था थियो । सेमेस्टर प्रणाली लागु भइसके पछि सबै विषयहरूमा शोधप्रबन्धलाई अनिवार्य गरिएको छ । सेमेस्टर प्रणालीको मूल: विशेषता भनेको नै विद्यार्थीहरूलाई नवीन विषयमा अनुसन्धान गर्नका लागि आवश्यक सैद्धान्तिक र व्यावहारिक दुवै पक्षमा सबल बनाउनु हो । मानविकी तथा सामाजिक शास्त्रका विषयहरूमा प्राविधिक विषयहरूमा जस्तै नवीन अनुसन्धान गर्नु भने सजिलो छैन । त्यसैले वार्षिक प्रणाली अन्तर्गत तयार गरिएका शोधप्रबन्धहरूमा नवीनताको कमी भएका टीका-टिप्पणीहरू समय समयमा बाहिर आउने गरेका छन् । सेमेस्टर प्रणालीलाई प्रभावकारी बनाउनका लागि अनुसन्धानमा गुणस्तरीयता कायम गर्नु र गराउनु नितान्त आवश्यक छ । यसका लागि सम्बन्धित निकाय (क्याम्पस र केन्द्रीय विभाग), शोध-निर्देशक तथा शोधार्थीले जिम्मेवारीपूर्वक उत्तरदायित्व वहन गर्नु पर्दछ । नेपालको परिप्रेक्ष्यमा स्नातकोत्तर तहमा गरिने अनुसन्धानमा गुणस्तरीयता कायम गर्नका लागि शोध-निर्देशकको नै प्रमुख भूमिका रहन्छ । शोध-निर्देशन तथा शोधकार्य आफैमा जटिल प्रक्रिया हुन् । शोधार्थीले एउटा निश्चित समयावधिमा शोध-निर्देशकको निरन्तर निर्देशन, सिर्जनात्मक सुझाव र पृष्ठपोषणलाई सम्बोधन गर्दै शोध-प्रबन्धलाई परिमार्जन गर्दै लानु पर्ने हुन्छ । यसले नै शोधप्रबन्धको स्तर र गुणलाई निर्धारण गर्दछ । शोध शीर्षक, समस्या पहिचान, निर्यात गर्ने विधि तथा शोधको औचित्यताका बारेमा शोधार्थी तथा शोध-निर्देशकका आ-आफ्नै तरिकाहरू रहेका हुन्छन् । यसले गर्दा कहिलेकाहीं शोध-निर्देशन प्रक्रियामा शोधार्थी र शोध-निर्देशक तथा सम्बन्धित निकाय सबैले समस्याहरू भोग्नु पर्ने अवस्था आउन सक्दछ । त्यसैले सबै पक्षले शोध-निर्देशन प्रक्रियाका बारेमा जानकारी राख्नु आवश्यक छ । त्यसै अनुसार जिम्मेवारी बोध गरी सेमेस्टर प्रणालीलाई सफल बनाउनु सबैको कर्तव्य पनि हो ।

यस लेखमा सेमेस्टर प्रणालीमा शोध-निर्देशन प्रक्रियालाई चुस्त बनाउनका लागि सम्बन्धित पक्षले खेल्नु पर्ने भूमिका र जिम्मेवारी, असल निर्देशकमा हुनु पर्ने गुणहरू र शोध-निर्देशन पद्धतिका बारेमा समालोचनात्मक रूपमा चर्चा गर्ने प्रयास गरिएको छ । यसका साथै अबका दिनमा शोध-निर्देशन प्रक्रियालाई चुस्त र प्रभावकारी बनाउनका लागि सम्बन्धित निकायले अवलम्बन गर्नु पर्ने केही रणनीतिहरूका बारेमा पनि चर्चा गरिएको छ ।

* प्रा.डा. रेग्मी भाषाविज्ञान केन्द्रीय विभागमा कार्यरत हुनुहुन्छ ।

यो लेख मानविकी तथा सामाजिकशास्त्र सङ्कायका सन्दर्भमा मात्र लेखिएको हो ।

२. सम्बन्धित पक्षको जिम्मेवारी

विश्वविद्यालयमा सेमेस्टर प्रणालीका थुप्रै चुनौतीका साथसाथै र अवसरहरू पनि रहेका छन् (अधिकारी, २०७१:२०७२) । मानविकी तथा सामाजिक शास्त्र सङ्घायमा भने सेमेस्टर प्रणालीका आफ्नै खाले चुनौतीहरू देखिएका छन् (रेग्मी, २०७४) । सबैभन्दा ठूलो चुनौती भनेको शोध-निर्देशन प्रक्रियालाई चुस्त बनाउनु हो । यस प्रक्रियाका प्रमुख पक्षका रूपमा रहेका सम्बन्धित निकाय (क्याम्पस र केन्द्रीय विभाग), शोध-निर्देशक तथा शोधार्थीका आ-आफ्नै जिम्मेवारी रहेका हुन्छन् । तिनीहरूको बारेमा संक्षिप्त चर्चा निम्न उप-खण्डहरूमा गरिन्छ ।

(क) शोध-निर्देशकको जिम्मेवारी

शोध निर्देशनलाई सम्मानजनक जिम्मेवारीको रूपमा लिने चलन सबै देशमा पाइन्छ । शोध-निर्देशन नितान्त प्राविधिक कुरा हो । शोधार्थीलाई सफलतापूर्वक शोधप्रबन्ध पुरा गर्नका लागि शोधनिर्देशकको भूमिका प्रमुख रहेको हुन्छ । शोध परियोजनाको निर्माण, शोध-विधिको चयन, तथ्याङ्क सङ्कलन र विश्लेषण, प्रस्तुतीकरण र प्रकाशनसम्मका कुराहरूमा शोध-निर्देशकले पथप्रदर्शकको भूमिका निर्वाह गर्न सक्नुपर्ने हुन्छ । शोध-निर्देशकको प्रमुख भूमिका भनेको शोधार्थीलाई उच्चस्तरको शोध र सिकाइको वातावरण तयार पारिदिनु हो । यसका लागि शोधनिर्देशकले निरन्तर निरीक्षण (monitor) र सुझाव दिँदै शोधार्थीसँग व्यावसायिक अन्तर्वैयक्तिक (Professional inter-personal) सम्बन्ध कायम गर्न सक्नुपर्दछ । शोध-निर्देशकले अनुसन्धानका हरेक प्रक्रियामा प्राज्ञिक सल्लाह र सुझाव दिनसक्नु पर्दछ । विश्वविद्यालय क्याम्पस, कीर्तिपुरका मानविकी तथा सामाजिक शास्त्र सङ्घाय अन्तर्गतका केन्द्रीय विभागहरूमा वार्षिक प्रणालीका मात्र नभई सेमेस्टर प्रणाली अन्तर्गत अध्ययन गरेका विद्यार्थीहरूले पनि तोकिएको समयावधिमा गुणस्तरीय शोधप्रबन्ध तयार गर्न नसकेका गुनासा सर्वविदित नै छन् । प्राविधिक तथा विषयगत पक्षमा समयमा नै स्पष्ट तथा प्राज्ञिक निर्देशन हुन नसकेको र शोध-निर्देशन गर्न शोध-निर्देशक अभिप्रेरित हुन नसकेको र शोधार्थी र शोध-निर्देशकका बीच आवश्यक सौहार्दपूर्ण सम्बन्ध कायम हुन नसकेका जस्ता गुनासाहरू पनि यदाकदा सुनिने गरेका छन् । उपयुक्त र व्यवस्थापन गर्न सकिने शोध-शीर्षकको चयन र शोध-योजनाको निर्माणमा शोधार्थीलाई सहयोग गर्नु, शोध-शीर्षकका बारेमा राम्रोसँग परिचित हुनु वा हुने तत्परता देखाउनु, शोधार्थीले शोध-शीर्षकसँग सम्बन्धित क्षेत्रमा गरेको प्राज्ञिक प्रगति र शोधका बारेमा छलफल र सुझावका लागि शोधार्थीलाई आवश्यक समय उपलब्ध गराउनु, शोधार्थीले पेस गरेको लिखित प्रतिवेदनमा समयमा नै सिर्जनात्मक सुझाव दिनु, राम्रो कामको प्रशंसा गर्नु शोध-निर्देशकका प्रमुख जिम्मेवारी हुन् । यी बाहेक लामो समयसम्म अनुपस्थित हुने अवस्थामा आएमा निर्देशनको निरन्तरताको सुनिश्चितताको लागि व्यवस्था गर्नु, शोधार्थीलाई अनुसन्धानसँग सम्बन्धित सामग्रीहरू प्रयोग गर्न सहयोग गर्नु, अनुसन्धान समितिका सदस्यहरूको अनुसन्धानप्रति फरक विचार आएमा एकमत कायम गराउनु, सम्बन्धित निकायले मार्ग-निर्देशन गरेका अनुसन्धानका सर्तहरू पालना गराउनु, अनुसन्धान सामग्रीको प्रयोग र अनुसन्धानका अन्य आवश्यक सर्तहरूका बारेमा शोधार्थीलाई सावधान राख्नु, शोधार्थीलाई अनुसन्धानलाई समयमा नै सकाउन प्रोत्साहन गर्नु, शोधार्थीको योगदान र लेखाइको सफलताको प्रशंसा गर्दै कृतिलाई प्रकाशन गर्न

शोधार्थीलाई सहयोग गर्नु र शोधको प्रस्तुति पछि आएमा सुभाव अनुसार परिमार्जन गर्न शोधार्थीलाई सहयोग गर्नुपनि शोध निर्देशकका जिम्मेवारीहरू नै हुन् (छियाप्पेट्टा-स्वानसन र वाट, २०११) । औपचारिक रूपमा शोध-निर्देशनको जिम्मेवारी लिइसके पछि शोध-निर्देशकले कुनै पनि बहानामा जिम्मेवारी वहन गर्नबाट पछि हट्न मिल्दैन । यी सबै प्रक्रियामा शोधार्थीलाई सहयोग गरी सम्बन्धित विषय र निकायको स्तर कायम गराउनु र नियम पालना गराउनु शोध-निर्देशकको जिम्मेवारी हो । यस्ता जिम्मेवारीहरूका बारेमा नियमित कार्यशाला गोष्ठीको आयोजना गरी शोध-निर्देशकलाई गम्भीर रूपमा अवगत गराइएको अवस्था मानविकी तथा सामाजिक शास्त्र सङ्कायमा भने देखिदैन ।

(ख) शोधार्थीको जिम्मेवारी

शोध-निर्देशन प्रक्रियामा दोस्रो प्रमुख भूमिका खेल्ने पक्ष भनेको शोधार्थी हो । यस प्रक्रिया अन्तर्गत रही गुणस्तरीय शोध प्रतिवेदन तयार गर्नका लागि आवश्यक पर्ने समय र शक्ति लगाउन प्रतिबद्ध हुनु शोधार्थीको प्रमुख कर्तव्य मानिन्छ । शोधार्थीले शोध-निर्देशकले अपेक्षा गरे अनुसारको ठोस प्रयास गर्नु, गर्ने प्रयासको थालनी गर्नु र टीका-टिप्पणी र सुभावलाई स-सम्मान ग्रहण गर्नु र सो बमोजिम शोध-प्रबन्धलाई परिमार्जन गर्दै जानु पनि शोधार्थीका कर्तव्यहरूमा नै पर्दछन् । यी कुराहरूका बारेमा प्रश्न राख्ने अधिकार शोध-निर्देशकलाई रहन्छ र रहनु पनि पर्दछ । प्रतिबद्धता अनुसार प्रयास नगर्ने, शोध-निर्देशकसँग प्रत्यक्ष सम्बन्धमा नरहने, टीका-टिप्पणी र सुभावलाई ग्रहणनगर्ने र समयमा शोधप्रबन्ध तयार नगर्ने वा शोध नै पुरा नगर्ने प्रवृत्ति शोधार्थीहरूमा हावी भइरहेका गुणासाहरू अनौपचारिक रूपमा सुन्तमा आएका छन् । लामो समयसम्म शोध पुरा नगर्दा उही शीर्षक र उही विधिको प्रयोग गरेर अरूले नै शोधप्रबन्ध बुझाएको अवस्थामा अरू थप समस्याहरू आएका घटनाहरू पनि छन् । शोध-निर्देशकका जस्तै शोधार्थीका पनि केही जिम्मेवारीहरू छन् । व्यवस्थापन गर्न सकिने र उपयुक्त शीर्षक चयन र योजना गर्ने, अनुसन्धानलाई सफलतापूर्वक अगाडि बढाउनका लागि आवश्यक पर्ने सीप र आधारभूत ज्ञान प्राप्त गर्नका लागि प्रतिबद्धताका साथै लगाव देखाउनु, शोध पुरा गर्नु पर्ने समय अवधिलाई ध्यान दिएर त्यसै अनुरूप कार्ययोजना र समयतालिकाको निर्माण र अनुशरण गर्नु, शोध-निर्देशकसँग छलफल गरी निर्धारण गरिएको समयमा शोध-निर्देशकलाई भेट्नु, नियमित रूपमा प्रगति विवरण र उपलब्धिका बारेमा जानकारी गराउनु, शोध-निर्देशकले दिएका सुभाव र टीका-टिप्पणीलाई ग्रहण गरी सम्बोधन गर्नु, सम्बन्धित निकाय र शोध-निर्देशकले सुझाएका सामग्रीहरूलाई विचारपूर्वक प्रयोग गर्नु, थप सामग्रीहरूको खोजी गरी प्रयोग गर्नु, सम्बन्धित निकायले बनाएका शोध सम्बन्धित नियमहरू, समयवधि तथा शोध-शैली बारेमा सचेत रहनु, नियमित रूपमा पूर्वकार्यको समीक्षा गरी सो समीक्षालाई अध्यावधिक बनाउनु र नियमित रूपमा शोध-निर्देशकसँग सम्पर्कमा रहनु पनि शोधार्थीका जिम्मेवारीका कुरा हुन् । शोध-निर्देशक माफत यी जिम्मेवारी पुरा गराउनुमा सम्बन्धित निकाय पनि चनाखो रहनु पर्दछ । तर यस्ता जिम्मेवारीहरूका बारेमा नियमित कार्यशाला गोष्ठीको आयोजना गरी शोधार्थीहरूलाई गम्भीररूपमा अवगत गराइएको र अनुगमन (follow up) गरिएको अवस्था मानविकी तथा सामाजिक शास्त्र सङ्कायमा समान्य रूपमा देखिएको छैन ।

(ग) सम्बन्धित निकायको जिम्मेवारी

क्याम्पस प्रमुख र केन्द्रीय विभागहरूका विभागीय प्रमुख र क्याम्पस र केन्द्रीय विभागहरूमा गठन गरिएका अनुसन्धान समितिहरू पनि शोध-निर्देशन प्रक्रियाका अभिन्न अङ्गका साथै जिम्मेवारपूर्ण निकाय हुन् । शोध-कार्यशाला गोष्ठीको आयोजना गर्नु, शोधार्थीले प्रस्तुत गरेका शोध-प्रस्तावमाथि छलफल गराई अनुसन्धानका लागि अनुमति दिनु र सो कार्य गर्नका लागि मार्ग निर्देशन गर्नका लागि शोध-निर्देशक तोकनु यस्ता निकायका प्रमुख काम हुन् । मानविकी तथा सामाजिक शास्त्र सङ्कायमा यस्ता निकायले यसभन्दा बढी काम गरेको देखिदैन । शोधार्थीको अभिलेख राखी शोधकार्य अगाडि बढे नबढेको बारेमा जानकारी लिनु र नबढेको भएमा के कारणले गर्दा अगाडि बढ्न नसकेको हो यस बारेमा शोधार्थी र शोध-निर्देशकसँग छलफल गरी आवश्यक निर्देशन दिनु सम्बन्धित निकायको प्रमुख जिम्मेवारी हो । यी बाहेक शोधार्थीलाई अनिवार्यरूपमा अनुसन्धान कार्यशाला गोष्ठीमा सहभागी गराउने, प्रतिबद्धता पत्रमा हस्ताक्षर गराउने, सम्बन्धित विषयमा विज्ञताहासिल गरेका शिक्षकलाई शोध-निर्देशकको जिम्मा दिने, सम्बन्धित निकाय र विषयको गाम्भीरता अनुसार गुणस्तर कायम भए नभएको, शोधमा नवीनता र मौलिकताको निर्क्योल गरी आन्तरिक मूल्याङ्कन कर्तालाई मूल्याङ्कनका लागि शोधप्रबन्ध पठाउने, प्रिसिडिन्सन्स मौखिक परीक्षा लिने र सो परीक्षामा आएका सुझावलाई समावेश गरी परिमार्जन गरिएको शोधलाई बाह्य मूल्याङ्कन कर्तालाई पठाइ अन्तिम मौखिक परीक्षाको आयोजना गर्ने र सो परीक्षामा आएका सुझावहरूलाई सम्बोधन गरी परिमार्जन गरेको शोधलाई प्राप्तोङ्क सहित प्रमाणित गरी सम्बन्धित निकायमा पठाउने जिम्मेवारी पनि सम्बन्धित निकायको हो । सम्बन्धित विषयविज्ञको अभाव, कार्यबोभ (workload) मा शोध-निर्देशनलाई गणना नहुनु, ज्यादै न्यून पारिश्रमिक तथा विज्ञको अनुपातमा शोधार्थीको अनुपात बढी जस्ता कारणले गर्दा स्तर कायम गर्न गाह्रो भएको गुनासा पनि सम्बन्धित निकायले दिने गरेका छन् । मानविकी तथा सामाजिक शास्त्र सङ्कायका भूगोल, मनोविज्ञान जस्ता व्यावहारिक परीक्षा हुने विषयमा बाहेक अरूमा औपचारिक कक्षाहरू सकिए पछि शोधार्थी शोध-निर्देशकको प्रत्यक्ष सम्पर्कमा नरहुनु र मार्ग-निर्देशन अनुसार शोधलाई परिमार्जन नगर्नु प्रमुख समस्याका रूपमा रहेका छन् । उपयुक्त रणनीतिका साथ यस कुराको समाधान नभएसम्म गुणस्तरीय अनुसन्धान हुन सक्दैन । गुणस्तरीय अनुसन्धानप्रक्रियालाई स्थापित गर्न नसकिएमा सेमेस्टर प्रणाली वर्षको एक पटक अन्तिम परीक्षा हुने प्रणालीलाई छ-छमहिनामा अन्तिम परीक्षा लिने प्रणालीमा रूपान्तरण गरिएको मात्र हुने छ ।

३. असल शोध-निर्देशकमा हुनु पर्ने गुणहरू

एउटा असल शोध-निर्देशकमा साधु-सन्तको जस्तो संयम, बाइबलमा वर्ण गरिएका राजा सोलोमनको जस्तो ज्ञान, मार्टिन लुथर किङको जस्तो सञ्चार-दक्षता, अङ्ग्रेज गणितज्ञ आदा लोभालेसको जस्तो सरल विश्लेषण र महात्मा गान्धीको जस्तो सद्भाव र माया जस्ता गुणहरू हुनु पर्ने कुराको चर्चा गरेको पाइन्छ (डीनको कार्यालय, २००६) । तर यस्ता सर्वगुण सम्पन्न शोध-निर्देशक पाउन भने त्यति सजिलो छैन । असल शोध-निर्देशकलाई फ्लोरेन्स नाटिङ्गेल, लियोनार्दो दा भिन्ची, आइज्याक न्युटन, माइकेलान्जेलो, मोजार्ट, पाब्लो पिकासो र

आइन्स्टाइनसँग पनि तुलना गरेको पाइन्छ। असल शोध-निर्देशकले जहिले पनि शोधार्थीलाई समस्याको समाधान गर्नका लागि नवीन सिद्धान्तको प्रयोग गर्नका लागि प्रोत्साहन गर्दछ। शोधार्थीलाई आफ्ना समस्याहरू स्पष्ट रूपमा राख्नउत्प्रेरित गर्दछ। यसका साथै समस्या समाधान गर्नका लागि प्रभावकारी निर्देशन दिन्छ। यति मात्र नभएर शोध-निर्देशकले सहयोग र पक्षपातविहीन वातावरणको निर्माणमा प्रमुख भूमिका खेल्दछ। यति मात्र होइन, एउटा असल शोध-निर्देशक जहिले पनि शोधार्थीलाई कसरी सहयोग गर्न सक्छु भन्ने चिन्तामा रहन्छ। एउटा असल शोध-निर्देशकले जहिले पनि शोधार्थीको स्वतन्त्रता र स्वाधीनतालाई सम्मान गर्दछ। यस्ता गुणहरू भएका शोध-निर्देशकले मात्र गुणस्तरीय शोधप्रबन्ध तयार गर्नमा शोधार्थीलाई उचित निर्देशन दिन सक्छ। नेपाल जस्तो बहुभाषिक, बहु-जाति र बहु-धार्मिक देशमा विशेषतः सामाजिक शास्त्रसँग सम्बन्धित विषयमा शोध-निर्देशन गर्दा शोधार्थीको सांस्कृतिक पृष्ठभूमिलाई पनि विशेष रूपले ख्याल गर्नुपर्ने हुन्छ। शोध-निर्देशन प्राविधिक कुरा भए पनि यो मूलतः कला नै हो। सम्बन्धित निकायबाट पुरस्कार र सजायको व्यवस्थाको थालनी गरेको खण्डमा शोध-निर्देशकले आफै यस्ता गुणहरूको विकास गर्न सक्दछ।

४. शोधनिर्देशनका सामान्य पद्धतिहरू

शोध-प्रबन्धलाई सफलतापूर्वक पूरा गर्नका लागि, आवश्यक वातावरण सिर्जना गर्नका लागि शोध-निर्देशक तथा शोधार्थी दुवैले शोध-निर्देशनका सामान्य पद्धतिहरूका बारेमा जानकारी लिनु आवश्यक मानिन्छ। गाटफिल्ड(२००५इ.)ले शोध-निर्देशनका चारओटा पद्धतिहरूको उल्लेख गरेका छन्। पहिलो पद्धतिलाई स्वतन्त्रताको पद्धति (Laissez-faire approach) भनिन्छ। शोधार्थीले शोध शीर्षकको चयन गर्दा सबभन्दा पहिले पूर्वकार्यको समीक्षाबाट सुरु गर्दछ। यस्तो अवस्थामा शोधार्थीलाई कुनै निर्देशनको जरूरत पर्दैन। यस्तो अवस्थामा शोधार्थीलाई आफ्नो समस्याको समाधान गर्नका लागि स्वतन्त्र राखिन्छ र आवश्यक परेमा अति नै थोरै मात्र निर्देशन दिइन्छ। शोधको सुरुको अवस्थामा चाहिनेभन्दा बढी निर्देशन हुन गएमा शोधमा मौलिकता हराउने डर हुन्छ। शोध-निर्देशनको दोस्रो पद्धतिलाई निर्देशकीय पद्धति (directorial approach) भनिन्छ। शोधार्थीले शोध शीर्षकको चयन गरे पछि शोध प्रश्नको निर्माणमा लाग्नुपर्ने हुन्छ। यस अवस्थामा शोधार्थीलाई शोध निर्देशकसँग नियमित र पारस्परिक छलफलका साथै सुझावको आवश्यकता पर्दछ। यस अवस्थामा शोधार्थीलाई निश्चित समयवधिमा अनिवार्यरूपमा पूरा गर्नुपर्ने केही गृहकार्य वा काम दिनुपर्ने हुन्छ। यस अवस्थामा शोधार्थीले शोध-निर्देशकले भनेका कुराहरू ध्यान दिएर सुन्ने, बुझ्ने र प्रभावकारी रूपमा अनुसरण गर्नु पर्ने हुन्छ। जसरी चलचित्र निर्माणमा जस्तै निर्देशकले भने बमोजिम कलाकारले अभिनय गर्छ त्यसरी नै शोध-निर्देशकले भने अनुसार शोधार्थीले गर्नु पर्दछ। शोध-निर्देशनको तेस्रो पद्धतिलाई परामर्शीय पद्धति (Consultant approach) भनिन्छ। शोधार्थीले शोध प्रश्नहरूको निर्माण गरी अगाडि बढे पछि तथ्याङ्क सङ्कलनमा लाग्दछ। तथ्याङ्क सङ्कलन भए पछि विश्लेषण गरी परिणामको प्रस्तुतीकरण गर्नका लागि, आवश्यक लेखनशैलीको विकास गर्नका लागि शोध-निर्देशकको परामर्शको जरूरी पर्दछ। यस्तो अवस्थामा शोध-निर्देशकले शोधार्थीलाई आफ्नो काममा बढी जिम्मेवारीका साथ अगाडि बढ्न र जटिल चुनौतीहरूलाई सामना गर्न प्रोत्साहन गर्नु पर्दछ। यस्तो अवस्थामा कहिलेकाहीं भने निर्देशनको आवश्यकता पर्दछ। शोध-निर्देशनको चौथो पद्धतिलाई प्रशिक्षणीय पद्धति

(Pastoral approach) भनिन्छ । अनुसन्धान सीप र ज्ञानको विकास गरी शोधलाई सकेसम्म राम्रो बनाउनका लागि शोधलेखनको अन्त्यतिर शोधार्थीलाई विशेष प्रशिक्षणको आवश्यकता पर्दछ । शोध-निर्देशकले शोधार्थीलाई एउटा मित्रको रूपमा लिई नियमित रूपमा शोधकार्यको निरीक्षण र समालोचना गर्दै अगाडि बढाउनु पर्दछ । यस अवस्थामा निर्देशकले मनग्य समय दिनु पर्दछ । ढाडस दिदै शोधार्थीमा आत्मविश्वासको विकास गराउँदै जानु पर्दछ । यसले गर्दा शोधार्थी सिकारूबाट क्रमशः व्यावसायिक अनुसन्धाता बन्नमा मद्दत मिल्दछ । शोध-निर्देशकले समयानुकूल र शोधको प्रगतिको तह अनुसार कहिले निर्देशक, कहिले परामर्शदाता कहिले प्रशिक्षकको भूमिका निभाएर शोधार्थीलाई गुणस्तरीय शोधप्रबन्ध तयार गर्न मद्दत गर्नु पर्दछ । अनुसन्धान प्रक्रियामा मूलतः अनुसन्धाता र शोध-निर्देशक नै प्रमुख रूपमा जिम्मेवार हुने चलन छ । शोध-निर्देशकका यी सामान्य पद्धतिका बारेमा जानकारी नहुँदा कहिले अत्यधिक निर्देशन (over-supervision) त कहिले न्यून निर्देशन (under-supervision) हुन गएर शोधार्थीले शोध-कार्यमा जुन नवीन अनुभव र आनन्द लिनुपर्ने हो त्यो लिन सक्दैन र नवीन र मौलिक अनुसन्धान हुन सक्दैन ।

५. शोध-निर्देशनका प्रभावकारी हुन नसक्नाका कारणहरू

मानविकी तथा सामाजिकशास्त्र सञ्जायका स्तकोत्तर तहमा प्रभावकारी रूपमा शोध-निर्देशन हुन सकेको छैन । न त सम्बन्धित निकाय नै पूरा जिम्मेवारी लिन तयार छन्, न त शोधार्थी, न त शोध-निर्देशक नै शोध-निर्देशन प्रभावकारी हुन नसक्नाका कारण मध्ये शोध-निर्देशन प्रक्रियाका बारेमा शोध-निर्देशकमा रहेको अनभिज्ञता पनि हो । शोधको प्रगतिस्तर हेरी आवश्यक निर्देशन दिन नसक्दा शोधार्थी र शोध-निर्देशकका बीचमा सौहार्दपूर्ण संबन्ध कायम हुन नसकेका धेरै उदाहरणहरू हाम्रासामु छन् । शोध-विधिलाई पाठ्यक्रममा राखिएको छ । तर शोध-निर्देशन प्रक्रियाका बारेमा भने खासै चासो राखेको पाइँदैन । शोध-निर्देशन धेरै समय खाने र भ्रन्कटिलो प्रक्रिया हो । शोध-निर्देशकलाई न त समयानुकूलको पारिश्रमिकको व्यवस्था नै छ, न त कार्यबोझमा नै गणना गर्ने नियम छ । न त शोधार्थीले नै शोध-निर्देशकलाई सम्मानको दृष्टिले हेरेको पाइन्छ । अर्को कुरा शोध-निर्देशक हुनका लागि न्यूनतम शिक्षण अनुभव चाहिने नियम पनि छैन । अनुभवी र विद्यावारिधि गरेका शिक्षकहरूलाई पनि शोध-निर्देशन गर्नु पर्ने कुनै अनिवार्यता छैन । शोध-निर्देशनको गुणस्तरीयतालाई आधार मानेर पदोन्नतिको व्यवस्था आजसम्म भएको छैन । अर्को प्रमुख कुरा केन्द्रीय विभागहरूमा पनि शोधार्थीहरूलाई निर्देशन दिन, छलफल गर्न र गराउनका लागि पूर्वाधारको कमी प्राध्यापकलाई व्यक्तिगत कुर्सीको व्यवस्था पनि गर्न सकिएको छैन । घरमा बोलाएर निर्देशन गर्नुपर्ने अवस्था छ । सेमेस्टर प्रणालीमा चेलाचेलीको लागि गुरु वा गुरुआमा एउटा निश्चित समयवधिमा नियमितरूपमा उपलब्ध हुन सक्नु पर्दछ । यसका लागि प्राध्यापक आवास गृह र विद्यार्थी आवासको उचित व्यवस्था हुनु पर्दछ । यो कुरा दिवा-सपना मात्र हुन गएको छ । सेमेस्टर प्रणाली लागु भएपछि पनि भौतिक अवस्थामा कुनै सुधार हुन सकेको छैन । यस्तो अवस्थामा निर्देशन प्रभावकारी हुन सक्दैन । समयमा काम सम्पन्न नगर्ने, निर्देशनलाई उपेक्षा गर्ने र गुणस्तरहीन शोध प्रबन्ध शोध अवधिको अन्तिम घडीमा जबरजस्ती नै पेश गर्ने पुराना रोगहरूले प्रश्रय पाइरहेमा सेमेस्टरको मुटुको रूपमा रहेको अनुसन्धानमा गुणस्तर कायम गर्न सकिने छैन ।

६. शोध-निर्देशनलाई प्रभावकारी बनाउने केही रणनीतिहरू

मानविकी तथा सामाजिकशास्त्र सङ्घायका स्नातकोत्तर तहमा शोध-निर्देशनलाई प्रभावकारी बनाउनका लागि केही रणनीतिहरू सम्बन्धित निकायले तत्कालै लागु गर्न आवश्यक छ । सर्वप्रथम मानविकी तथा सामाजिकशास्त्र सङ्घायको डीन कार्यालयको तर्फबाट सकेसम्म विषयगत रूपमा सेमेस्टर प्रणालीको सन्दर्भमा शोध-निर्देशन प्रणालीका बारेमा कार्यशाला गोष्ठीको आयोजना तत्कालै गराउनु पर्दछ । सो कार्यशाला गोष्ठीमा सहभागी नभएका शिक्षकहरूलाई सकेसम्म शोध-निर्देशनको जिम्मेवारी दिनु हुँदैन । क्याम्पस र केन्द्रीय विभागमा गठन गरिएका अनुसन्धान समितिलाई नीतिगत रूपमै बढी जिम्मेवार र प्रभावकारी बनाउनु पर्दछ । गुणस्तरको अन्तिम उत्तरदायित्व यही अनुसन्धान समितिले लिनु पर्दछ । शोध-निर्देशकलाई समयानुकूलको पारिश्रमिकको व्यवस्था हुनु पर्दछ । शोध-निर्देशनलाई पनि कक्षा-भारको रूपमा गणना गर्नु पर्छ । एक वर्षमा कुनै पनि शोध-निर्देशकलाई ५ ओटाभन्दा बढी शोधप्रबन्धको निर्देशन गर्ने जिम्मेवारी दिनु हुँदैन । सकेसम्म प्राध्यापक र सह-प्राध्यापकलाई मात्र शोधप्रबन्धको निर्देशन गर्ने जिम्मेवारी दिनु पर्दछ । स्नातकोत्तरको शोध-प्रबन्धको निर्देशन गर्नका लागि उपप्राध्यापकको हकमा कम्तिमा पनि विद्यावारिधि गरेको हुनु पर्ने व्यवस्था हुनु पर्दछ । कुनै पनि हालतमा आंशिक शिक्षकलाई शोधप्रबन्धको निर्देशन गर्ने जिम्मेवारी दिनु हुँदैन । अनुभवी र विद्यावारिधि गरेका शिक्षकहरूलाई शोध-निर्देशन गर्ने कार्यलाई अनिवार्य बनाउनु पर्दछ । शोध-निर्देशन गुणस्तरीयतालाई आधार मानेर पदोन्नतिको व्यवस्था गर्नु पर्दछ । शोध-निर्देशन प्रक्रियालाई पनि शोधविधि सम्बन्धी पाठ्यक्रममा राख्नु पर्दछ । शोधार्थीहरूलाई निर्देशन दिन, छलफल गर्न र गराउनका लागि छुट्टै कोठा र फर्निचरको व्यवस्था हुनु पर्दछ । हरेक क्याम्पस र केन्द्रीय विभागमा इ-पुस्तकालयको व्यवस्था हुनु पर्दछ । हेलचक्राँयी गर्ने शोध-निर्देशक र शोधार्थी दुबैलाई सजाय हुन सक्ने व्यवस्था हुनु पर्छ । हरेक विभाग र क्याम्पसमा शोधप्रबन्धको फर्म्याट र भाषा सम्पादन गर्ने छुट्टै व्यक्तिको व्यवस्था हुनुपर्दछ । हरेक क्याम्पस र केन्द्रीय विभागले शोधविधि कार्यशाला गोष्ठी अनिवार्यरूपमा आयोजना गर्नुपर्ने व्यवस्था गर्नु पर्दछ । विज्ञता हासिल नभएका असम्बन्धित विषयमा कुनै पनि शिक्षकलाई शोध-निर्देशन गर्न दिनु हुँदैन । यसको नियन्त्रण अनुसन्धान समितिको तर्फबाट हुनु पर्दछ जस्ताको त्यस्तै प्रतिलेख गरिएका शोधप्रबन्धलाई मौलिक भनी सिफारिस गर्ने शोध-निर्देशक र प्रक्रियालाई अगाडि बढाउने अनुसन्धान समितिलाई कारवाही हुन सक्ने व्यवस्था हुनुपर्छ । पुरस्कार र सजायको व्यवस्था नभएसम्म शोध-निर्देशनलाई प्रभावकारी बनाउन सकिन्न । यसलाई प्रभावकारी नबनाए सम्म सेमेस्टर प्रणालीलाई प्रभावकारी बनाउन सकिन्न ।

७. निष्कर्ष

मानविकी तथा सामाजिकशास्त्र सङ्घाय अन्तर्गत स्नातकोत्तरमा लागु गरिएको सेमेस्टर प्रणालीलाई सफल बनाउनका लागि नियमित रूपमा अन्तर्क्रियात्मक अध्यापन, नियमित आन्तरिक मूल्याङ्कन, सत्रान्त परीक्षाका साथसाथै प्रभावकारी शोध-निर्देशन हुनु जरूरी छ । गुणस्तरीय शोधले नै विश्वविद्यालयको गुणस्तर मापनमा प्रमुख भूमिका खेल्दछ । शोध-निर्देशन एउटा जटिल र प्राविधिक कुरा हो । शोध-निर्देशकले शोधार्थीलाई उच्चस्तरको अनुसन्धान र सिकाई वातावरण तयार पारिदिन सक्नु पर्दछ । गुणस्तरीय शोधका लागि प्रायः

शोधार्थी, शोध-निर्देशक र सम्बन्धित निकायहरूले आवश्यक जिम्मेवारी वहन गर्न सकेका छैनन् । विभिन्न कारणले गर्दा शोध-निर्देशनलाई प्रभावकारी बनाउन सकिएको छैन । शोधलाई प्राज्ञिक जीवनको अभिन्न अङ्गको रूपमा स्थापित गर्न सकिएको छैन । शोध-निर्देशनलाई व्यक्तिगत रूपमा आत्मा सन्तुष्टि, प्राज्ञिक उन्नति र सम्मानको प्रक्रियाको रूपमा पनि विकास गर्न सकिएको छैन । त्यसकारण अब हिलो नगरी सघन शोध-निर्देशन कार्यशाला गोष्ठीको आयोजना सम्बन्धित निकायबाट गर्न लगाई शोध-निर्देशक हुनका लागि योग्यता पुगेका शिक्षकलाई प्रशिक्षित गर्ने, राम्रोसँग जिम्मेवारी वहन गरेकालाई पुरस्कार र हेलचेक्याँयी गर्नेलाई दण्ड सहितको व्यवस्था नगरेसम्म मानविकी र सामाजिकशास्त्र सङ्कायमा शोध-निर्देशनलाई प्रभावकारी बनाउन सकिन्न । यसलाई प्रभावकारी नबनाएसम्म सेमेस्टर प्रणालीलाई सफल बनाउन सकिन्न । त्यसैले सम्बन्धित पक्षले समयमा नै उचित रणनीति उपनाउनु आवश्यक छ । यसमा सम्बन्धित सबै पक्षका सहयोग हुनु अति आवश्यक छ ।

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सेमेस्टर प्रणालीको कार्यान्वयन र यसका सकारात्मक पक्षहरू

प्रा. डा. लालु पौडेल*

सारांश

त्रिभुवन विश्वविद्यालयमा पहिलो पटक २०३० सालमा सबै सङ्घाय र अध्ययन संस्थानका सबै तहमा सेमेस्टर प्रणाली लागु गरिएको थियो । सेमेस्टर प्रणाली लागु भएको ६ वर्ष पछि विविध कारणले २०३६ सालमा पुनः वार्षिक प्रणालीमा फर्किने निर्णय गरियो । २०३६ सालमा त्रि.वि.का अधिकांश अध्ययन संस्थान र सङ्घाय मा वार्षिक प्रणाली सुरु गरिए पनि चिकित्साशास्त्र, इन्जिनियरिङ, वनविज्ञान र कृषि जस्ता प्राविधिक विषयमा विगत लामो समयदेखि नै सेमेस्टर प्रणालीमा अध्यापन भैरहेको छ । त्रि.वि.मा दोश्रो पटक २०७० सालमा लागु गरिएको सेमेस्टर प्रणाली हाल स्नातकोत्तर तहमा देशैभरि लागु गरिएको छ, र आगामी वर्षहरूमा स्नातक तहमा समेत क्रमशः विस्तार गर्दै जाने योजना रहेको छ । यस लेखमा सेमेस्टर प्रणाली कार्यान्वयन र यसका सकारात्मक प्रभाव वारेमा समीक्षा गरिएको छ ।

सन्दर्भ

त्रिभुवन विश्वविद्यालयले (त्रि.वि.) चारवर्ष अगाडि शैक्षिक गुणस्तरलाई सुधार गर्ने र त्रि.वि. लाई शैक्षिक उत्कृष्टताको केन्द्रका रूपमा विकास गर्ने उद्देश्यका साथ पुनः सेमेस्टर प्रणाली लागु गर्‍यो । हाल उपत्यका भित्र स्नातकोत्तर तहका सबै विषय र उपत्यका बाहिर विज्ञान तथा प्रविधि विषयका स्नातकोत्तर तहमा सेमेस्टर प्रणाली लागु गरिएको छ । आगामी केही वर्षभित्र त्रि. वि. का सम्पूर्ण कार्यक्रम सबै तहमा सेमेस्टर प्रणालीमा लैजाने त्रि. वि. को नीतिबमोजिम यस वर्षदेखि उपत्यका बाहिरका सम्पूर्ण क्याम्पसहरूमा मानविकी, व्यवस्थापन र शिक्षाशास्त्र विषयका स्नातकोत्तर तहमा सेमेस्टर प्रणाली लागु गर्ने निर्णय गरेको छ । यसै सन्दर्भमा सेमेस्टर प्रणाली के हो, यसका आधारभूत मान्यता के हुन्, वार्षिक र सेमेस्टर प्रणाली सञ्चालनमा के भिन्नता छ, सेमेस्टर प्रणालीको कार्यान्वयन कसरी गर्ने र यसका सकारात्मक पक्षहरू के के हुन् भन्ने वारे यस लेखमा चर्चा गरिएको छ ।

सेमेस्टर प्रणालीका विशेषता

विश्वमा हाल क्वाडमेस्टर, ट्राइमेस्टर, सेमेस्टर र वार्षिक गरी चार किसिमका शैक्षिक प्रणालीहरू प्रयोगमा आएका छन् । क्वाडमेस्टर प्रणालीमा एक शैक्षिक वर्षलाई बराबर चार भागमा विभाजन गरिन्छ, ट्राइमेस्टर प्रणालीमा एक शैक्षिक वर्षलाई बराबर तीन भागमा विभाजन गरिन्छ भने सेमेस्टर प्रणालीमा एक शैक्षिक वर्षलाई बराबर दुई भागमा विभाजन गरिन्छ, वार्षिक प्रणालीमा

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बाह्र महिनाको एक शैक्षिक सत्र हुन्छ । सेमेस्टर प्रणालीका केही आधारभूत मान्यताहरू छन् पनि जस्तै:

- (क) ६ महिनाको एक शैक्षिक सत्र-प्रत्येक ६ महिनामा भर्ना, अध्यापन र परीक्षा सकेर सातौँ महिनामा अर्को सेमेस्टर),
- (ख) परीक्षा भएको एक महिनाभित्र परीक्षाफल,
- (ग) निरन्तर तथा विकेन्द्रित मूल्याङ्कन प्रणाली,
- (घ) ग्रेडिङका आधारमा विद्यार्थीको मूल्याङ्कन,
- (ङ) सहभागितामूलक तथा अन्तरक्रियात्मक शिक्षण विधि,
- (च) सिकाइमा आधारित पाठ्यक्रम,
- (छ) विद्यार्थीको नियमित उपस्थिति,
- (ज) कक्षा शिक्षकलाई सम्पूर्ण अधिकार ।

माथिका मूल्यमान्यताहरू अनुसार चल्न सकेमा मात्र सेमेस्टर प्रणाली लागु गर्नुको औचित्य रहन्छ र यस प्रणालीले दिन खोजेको परिणाम प्राप्त गर्न सकिन्छ ।

त्रिविमा सेमेस्टर प्रणालीको अभ्यास

२०२८ सालमा 'नयाँ राष्ट्रिय शिक्षा पद्धतिको योजना' लागु गरिँदा नेपालमा उच्च शिक्षामा गुणात्मक सुधार ल्याउन केही कार्ययोजना अगाडि बढाउन सिफारिस गरिएको थियो । शिक्षालाई अवसरहरूसँग जोड्ने, प्राविधिक तथा व्यावसायिक शिक्षामा जोडदिने, शैक्षिक गुणस्तर वृद्धिगर्ने, शिक्षण पेशालाई आकर्षक बनाउने र विद्यार्थीलाई १० महिना राष्ट्रिय विकास सेवामा लगाउने जस्ता राम्रा उद्देश्य “नयाँ राष्ट्रिय शिक्षा पद्धतिको योजना” ले राखेको थियो । यीनै उद्देश्य प्राप्त गर्न विषयगत शिक्षक शिक्षणमा जोडदिने, शोधकार्य अनिवार्य गर्ने, शिक्षक विद्यार्थी अनुपात सन्तुलित राख्ने, उच्च शिक्षामा तल्लोतहको परीक्षा उत्तीर्ण हुनासाथ माथिल्लो तहमा पढ्न स्वतः पाउने कुरालाई मान्यता नदिई प्रत्येक तहमा प्रवेश परीक्षा लिने, व्यवस्था वार्षिक प्रणालीलाई त्यागी सेमेस्टर प्रणाली लागु गर्ने, आन्तरिक परीक्षालाई सुरुमा २०% राख्ने र क्रमशः ५०% पुऱ्याउने, कुनै क्याम्पसका विद्यार्थीको आन्तरिक र वाह्य परीक्षामा अड्कको धेरै अन्तर भएमा त्यस्ता क्याम्पसकले उचित छानबिन गर्ने जस्ता कार्ययोजना अगाडि सारिएको थियो । यही कार्ययोजना अनुसार त्रि.वि. का सबै सङ्घाय र अध्ययन संस्थानका सबै तहमा २०३० सालमा सेमेस्टर प्रणाली लागु गरियो । सेमेस्टर प्रणाली लागु भएको ६ वर्षपछि विविध कारणले २०३६ सालमा पुनः वार्षिक प्रणालीमा फर्किने निर्णय गरियो । २०३६ सालमा त्रि.वि.का अधिकांश अध्ययन संस्थान र सङ्घाय मा वार्षिक प्रणाली सुरुगरिए पनि चिकित्साशास्त्र, इन्जिनियरिङ, वनविज्ञान र कृषिजस्ता प्राविधिक विषयमा विगत लामो समयदेखि सेमेस्टर प्रणालीमा नै अध्यापन भैरहेको छ । वनविज्ञान अध्ययन संस्थानमा स्नातकोत्तर तह ट्राइमिस्टर प्रणालीमा चलिरहेका छन् । त्यसैगरी पछिल्लो समयमा आन्तरिक श्रोतबाट चलाइएका विज्ञान, व्यवस्थापन, मानविकी तथा शिक्षाशास्त्रविषयका स्नातक, स्नातकोत्तर तथा एम.फिल. कार्यक्रमहरू पनि सेमेस्टर प्रणालीमा अध्यापन भैरहेको छ । विज्ञान विषयको कम्प्युटर विज्ञान तथा सूचना प्रविधि र जैविक प्रविधि विषयमा स्नातकतहमा पनि सेमेस्टरमा अध्यापन भैरहेको छ । यी विषयहरूमा सेमेस्टर प्रणाली राम्रो सँग चलिरहेको छ । यसमा निम्न विषयहरू प्रमुख कारक रहेको मान्न सकिन्छ :

- विश्वसनीय प्रवेश परीक्षा,
- निश्चित भर्ना कोटा,
- शैक्षिक क्यालेन्डरलाई कडाइका साथ नियमित रूपमा लागु,
- यथेष्ट आर्थिक श्रोत,
- शिक्षक/कर्मचारीलाई उच्च पारिश्रमिक ।

माथिका प्रमुख कारणबाहेक पर्याप्त पूर्वाधार र आवासीय सुविधा आदि कारणले यी विषयहरूमा सेमेस्टर प्रणाली लागु गर्न सजिलो भएको छ । अर्कोतर्फ उत्कृष्ट विद्यार्थीहरूले भर्ना पाउने र साँच्चै गुणस्तरीय उच्चशिक्षा हासिल गर्न उत्साहित विद्यार्थीले मात्र भर्ना हुन पाउने भएकाले विद्यार्थी अनुशासित हुने, सिकाइमा दत्तचित्त रहने, गैरशैक्षिक क्रियाकलापमा कमचासो राख्ने हुनाले पनि सेमेस्टर प्रणालीमा अध्यापन गर्न सजिलो भएको छ ।

त्रि.वि. मा शैक्षिक गुणस्तर सुधारको आवश्यकता सबैलाई महसुस हुँदै गैरहेको परिप्रेक्ष्यमा २०७० सालमा त्रि.वि. ले समग्रमा त्रि.वि.को गिर्दो शैक्षिक गुणस्तरलाई सुधार गर्ने र त्रि. वि. लाई शैक्षिक उत्कृष्टताको केन्द्रका रूपमा विकास गर्ने उद्देश्यका साथ आफ्ना सबै शैक्षिक कार्यक्रमहरूमा चरणबद्ध रूपमा सेमेस्टर प्रणाली लागुगर्ने निर्णय लियो र प्रथम वर्षमा केन्द्रीय विभागका स्नातकोत्तर तहमा यसलाई लागु गरियो । हाल उपत्यकाका सबै क्याम्पसमा स्नातकोत्तर तहमा तथा उपत्यका बाहिरका सबै क्याम्पसमा विज्ञान तथा प्रविधि विषयका स्नातकोत्तर तहमा विस्तार गरिएको छ र हाल देशैभरका सम्पूर्ण स्नातकोत्तर तहलाई सेमेस्टर प्रणालीमा ढालिएको छ । आगामी वर्षहरूमा क्रमैसँग स्नातक तहमा पनि सेमेस्टर प्रणाली लागु गर्ने योजना रहेको छ ।

त्रिविमा सेमेस्टर प्रणाली सञ्चालन सम्बन्धी विनियम, २०७४

त्रिवि सेमेस्टर प्रणाली सञ्चालन विनियम, २०७४ ले सेमेस्टरमा भर्ना प्रक्रिया, शिक्षण विधि, मूल्याङ्कन पद्धति, परीक्षा, ग्रेडिङ पद्धति, छात्रवृत्ति, दण्ड सजाय आदिका वारेमा विस्तृत रूपमा चर्चा गरिएको छ । उक्त विनियम त्रिविको वेबसाइटबाट समेत प्राप्त गर्न सकिन्छ । उक्त विनियमका मुख्य प्रावधानहरू निम्नअनुसार छन् :

- भर्ना हुनका लागि प्रवेश परीक्षामा अनिवार्य उत्तीर्ण हुनु पर्दछ,
- ४०% मूल्याङ्कन आन्तरिक परीक्षाका माध्यमबाट हुन्छ,
- विद्यार्थी ८०% कक्षामा हाजिर हुनु पर्दछ, बिरामी भएको प्रमाण पेश गरेमा ७०% सम्मलाई मान्य हुन्छ,
- आन्तरिक परीक्षामा उत्तीर्ण भएका विद्यार्थी मात्र अन्तिम परीक्षामा सामेल हुन पाउँदछन्,
- अन्तिम परीक्षा उत्तीर्ण हुनका लागि विद्यार्थीले प्रत्येक विषयमा कम्तीमा ५०% अङ्क र औसतमा ६०% अङ्क (३.० सिजिपिए) ल्याउनु अनिवार्य हुन्छ,
- मूल्याङ्कन ग्रेडिङ पद्धतिमा हुन्छ,

- कुनै विषयमा आन्तरिक परीक्षाको अंक अन्तिम परीक्षाको अड्क भन्दा २० प्रतिशत भन्दा बढी भएमा आन्तरिक परीक्षाको अड्क अन्तिम परीक्षाको अड्क भन्दा बढीमा २० प्रतिशत मात्र बढी हुनेगरी घटाइन्छ ।

सेमेस्टर प्रणालीको कार्यान्वयन

(क) विद्यार्थी भर्ना कोटा निर्धारण

सेमेस्टर प्रणालीमा अध्यापन गराउँदा नियमित विद्यार्थीको दैनिक हाजिरी राख्नुपर्ने, प्रत्येक विद्यार्थीको निरन्तर मूल्याङ्कन गर्नुपर्ने, गृहकार्य चेक गर्नुपर्ने, मौखिक प्रस्तुति गराउनु पर्ने आदि कारणले उचित शिक्षक विद्यार्थी अनुपात भएमा मात्र सेमेस्टरको मर्मअनुसार पढाउन सकिन्छ । भर्ना कोटा निर्धारण गर्न सकिएन भने विद्यार्थी हाजिरी लिन नै लामो समय लाग्ने, शिक्षकले विद्यार्थी नै नचिन्ने, प्रिजेन्टेसन गराउन नै नसकिने, गृहकार्य तथा लिखित परीक्षाको उत्तरपुस्तिका परीक्षणमा धेरै दिन लाग्ने, एकैजना शिक्षकले धेरैजनालाई शोधकार्य गराउनुपर्ने अवस्था रहेको छ । यसले गर्दा सेमेस्टर प्रणालीले चाहे जस्तो शिक्षण तथा सिकाइ हुन सक्दैन ।

(ख) शिक्षण शुल्क निर्धारण

वार्षिक प्रणाली भन्दा सेमेस्टर प्रणालीमा प्रशासनिक तथा शैक्षिक खर्च वृद्धि हुनेहुँदा, सेमेस्टर प्रणालीमा विद्यार्थीबाट उठाइने न्यूनतम शुल्क पुनरावलोकन गर्नु र खर्च व्यहोर्न सकिने गरी शिक्षण शुल्क पनि वृद्धि गर्न आवश्यक छ ।

(ग) आन्तरिक शैक्षिक क्यालेण्डर निर्माण

त्रिविको शैक्षिक क्यालेण्डर सँग मिल्नेगरी क्याम्पसले छ महिनाभित्र भर्नादेखि परीक्षा सकिने गरी आफ्नो आन्तरिक क्यालेण्डर निर्माण गर्न जरूरी छ ।

(घ) कक्षाकोठामा सुधार

सेमेस्टर प्रणालीमा कक्षा बढी अन्तरक्रियात्मक गराउनु पर्ने, विद्यार्थीलाई प्रिजेन्टेसन गराउनु पर्ने, र धेरै पाठ्यक्रम छोटो समयमा पढाउनु पर्नेहुँदा प्रत्येक कक्षा कोठामा कम्तीमा मल्टिमेडिया प्रोजेक्टर र स्क्रिन, कम्प्युटर, सेतो पाटी, मार्कर, विद्यार्थीलाई यथेष्ट कुर्ची र खालि समयमा बसेर पढ्ने ठाउँको व्यवस्था जरूरी छ ।

(ङ) इन्टरनेटको व्यावस्था

क्याम्पस हाताभित्र प्रत्येक शिक्षक, कर्मचारी तथा विद्यार्थीलाई सजिलै पहुँच हुनेगरी इन्टरनेटको व्यवस्था गरिनु पर्दछ । अहिले धेरैजसो अध्ययन सामग्रीहरू वेवसाइटबाट प्राप्त गर्न सकिन्छ, शिक्षकले अध्ययन सामग्री इमेल तथा फेसबुक मार्फत विद्यार्थीलाई पठाउन सकिन्छ, तथा प्रशासनिक सूचना समेत इमेल तथा फेसबुकबाट दिन सकिन्छ ।

(च) शिक्षण विधिमा परिवर्तन

पारम्परिक चक, डस्टर र नोटका माध्यमबाट गरिने शिक्षण विधिलाई प्रविधि प्रयोगमा ढाल्न सकिएन भने सेमेस्टर प्रणालीले खोजे अनुसार अध्यापन हुन सक्दैन । तसर्थ शिक्षकहरूलाई पारम्परिक विधिबाट आधुनिक प्रविधि प्रयोगमा जान क्याम्पसबाट पहल, आवश्यक अभिमुखीकरण गरी सहज बनाउने ।

(छ) आन्तरिक मूल्याङ्कन विधि तयार गर्ने

अन्तर्राष्ट्रिय प्रचलन अनुसार साधारणतया आन्तरिक परीक्षाको मूल्याङ्कन Quiz, Sitting Test, Open Book Exam, Term Paper, Assignment, Presentation, Class Participation, Attendance आदिका आधारमा गरिन्छ । सम्बन्धित डीन कार्यलयले आफ्नो अध्ययन संस्थान/सङ्घका लागि उपयुक्त आन्तरिक मूल्याङ्कन विधि अङ्क विभाजन सहित तयार गरी कडाइका साथ लागुगर्नु पर्दछ । आन्तरिक मूल्याङ्कनको अङ्क पारदर्शी हुनुका साथै विद्यार्थीले गरेको आन्तरिक मूल्याङ्कनको कपी तथा रिपोर्ट अङ्क सहित विद्यार्थीलाई अनिवार्य फिर्ता दिने व्यवस्था हुनु पर्दछ ।

(ज) विद्यार्थीको अनिवार्य हाजिरी लिने व्यवस्था

सेमेस्टरमा निरन्तर मूल्याङ्कन गरिने हँदा विद्यार्थीको नियमित उपस्थिति अनिवार्य छ । तसर्थ प्रत्येक शिक्षकलाई विद्यार्थीको उपस्थिति रेकर्ड अनिवार्य राख्न लगाउने र त्यसको अनुगमन जरूरी छ । आन्तरिक मूल्याङ्कनको साथमा विद्यार्थी हाजिरी पनि अनिवार्य पेस गर्नुपर्ने व्यवस्था गर्न सकिन्छ ।

(झ) शिक्षकको न्यूनतम शैक्षिक भार परिभाषित गर्ने

एक सेमेस्टर क्रेडिट आवर भनेको सैद्धान्तिक विषयमा १६ घण्टा लेक्चर र ३२ घण्टा गृहकार्य (४८ घण्टा कार्य) र प्रयोगात्मक विषयमा ४८ घण्टा प्रयोगशालामा सुपरीवेक्षण भनेर परिभाषित गरिएको छ । वार्षिक प्रणालीको हप्ताको १२ घण्टा कक्षाभारलाई आधार मान्ने हो भने सेमेस्टर प्रणालीमा एक शिक्षकले दुई सेमेस्टरमा ९ क्रेडिट भार परिभाषित गरिनु पर्दछ । शिक्षकले आवश्यकताअनुसार एक सेमेस्टरमा कतिक्रेडिट पढाउने भन्ने सम्बन्धित विभाग वा क्याम्पसले तय गर्न सक्दछ । वार्षिक र सेमेस्टर दुवै प्रणालीमा एकै पटक पढाउने शिक्षकको कक्षाभार गणना गर्दा सेमेस्टरको १ क्रेडिटको हप्तामा ३ पिरियडका दरले गणना गरी स्नातकको साप्ताहिक १५ पिरियड र स्नातकोत्तर तहको साप्ताहिक १२ पिरियड पुऱ्याउन सकिन्छ ।

(ञ) सेमेस्टर वारे अभिमुखीकरण

हाल अध्यापनरत अधिकांश शिक्षकहरूहरू वार्षिक प्रणालीमा अध्ययन गरेर आएका छन् र विदेशमा गएर पढेका र त्रि. वि. मै सेमेस्टर प्रणालीमा पढेका बाहेक अधिकांशलाई सेमेस्टर प्रणालीबारे ज्ञान नै छैन । तसर्थ शिक्षकहरूलाई अभिमुखीकरणद्वारा तालिम दिनु अहिलेको टड्कारो आवश्यकता हो । यसमा सेमेस्टर के हो, त्रि. वि. मा सेमेस्टर कार्यक्रम किन आवश्यक छ, क्रेडिट के हो, ग्रेडिड प्रणाली के हो, पाठ्यक्रम कस्तो हुनु पर्दछ,

Term paper कसरी लेखाउने, Presentation कसरी गराउने, शोधकार्य कसरी गराउने, Plagiarism के हो र यसलाई कसरी हटाउने, प्रश्नपत्र कस्तो हुनु पर्दछ, प्रश्नपत्र मोडरेसन कसरी गर्ने, सम्परीक्षण कसरी गर्ने आदि विषय समेटेर सेमेस्टरमा पढाउने हरेक शिक्षकलाई अभिमुखीकरण सञ्चालन गर्न जरूरी छ ।

सेमेस्टर प्रणालीका सकारात्मक पक्षहरू

सेमेस्टर प्रणालीका केही सकारात्मक पक्षहरू छन् जुन वार्षिक प्रणालीमा हुँदैनन् ।

(क) विद्यार्थीको नियमिततामा वृद्धि

सेमेस्टर प्रणालीमा विद्यार्थी र शिक्षक बीचका अन्तरक्रिया बढी हुने र विद्यार्थीको लगातार मूल्याङ्कन हुने हुँदा विद्यार्थी कक्षा कोठामा नियमित हुन्छन् । अर्कोतर्फ त्रि. वि. को सेमेस्टर गाइडलाईन २०७० अनुसार ८०% प्रतिशत हाजिरी हुनुपर्ने, एउटा कक्षा छुट्टा पनि त्यसलाई समेट्न समय नपुग्ने कारण सेमेस्टर प्रणालीमा बाध्य भएर विद्यार्थी नियमित हुन्छन् ।

(ख) विद्यार्थीको क्रियाशीलतामा वृद्धि

वार्षिक प्रणालीमा वर्षान्तमा मात्र परीक्षा लिइने हुँदा परीक्षा तालिक प्रकाशन नभएसम्म विद्यार्थीले पढाइतर्फ त्यति चासो दिँदैनन् । सेमेस्टर प्रणालीमा नियमित लिइने आन्तरिक परीक्षा, गृहकार्य, समूह छलफल तथा प्रस्तुतीकरणका कारण वार्षिक प्रणालीभन्दा बढी क्रियाशील हुन्छन् यसले सिक्न खोज्ने प्रवृत्तिको विकास हुन्छ ।

(ग) पढाइ बाहेक अन्य उद्देश्यले भर्ना हुने विद्यार्थीहरू निरूत्साहित

वार्षिक प्रणालीमा कोटा लागु नभएको र भर्नाशुल्क पनि ज्यादै न्यून रहेका कारणले पढ्ने भन्दा गैरशैक्षिक क्रियाकलाप गर्ने उद्देश्य राखेर भर्नाहुने व्यक्तिहरूको सङ्ख्या उल्लेख्य रहन्थ्यो । तर सेमेस्टर प्रणालीमा कोटा प्रणाली र महङ्गो शुल्कका कारण यस्ता व्यक्तिहरूको भर्नामा निकै कमी आएको छ । नियमित हुनुपर्ने तथा लगातार परीक्षाहरू भैरहने हुँदा साँच्चै पढ्न चाहने विद्यार्थीहरूमात्र भर्ना हुन्छन् । यसले गर्दा विद्यार्थीहरूबाट हुने गैरशैक्षिक क्रियाकलापमा कमी आउँदछ ।

(घ) कक्षा कोठामा सुधार

सेमेस्टर प्रणाली सुरु भएपछि छोटो समयमा बढी सामग्री पढाउनु पर्ने, प्रस्तुति गर्न लगाउनु पर्ने कारण धेरैजसो केन्द्रीय विभाग रक्याम्पसका कक्षाकोठामा ल्यापटप तथा मल्टिमिडिया आवश्यक हुन्छ ।

अन्तरक्रियात्मक पढाइ र विद्यार्थीको प्रस्तुतीकरण गर्नुपर्ने हुँदा कक्षा कोठामा कम्तिमा पनि प्रोजेक्टर र कम्प्युटर आवश्यक हुन्छ ।

(ङ) विभाग र क्याम्पसहरूमा चहलपहलमा वृद्धि

वर्ष मा २/३ महिना मात्र पढाइ हुने र अन्य समयमा मसानघाट जस्ता देखिने विभागहरू सेमेस्टर प्रणाली लागु भएपछि बढी नै चलायमान हुन्छन् । विद्यार्थीहरू नियमित हुने, शिक्षकहरू सँग बढी अन्तर्क्रिया गर्न खोज्ने भएका कारण विभागहरूमा विद्यार्थी तथा

शिक्षकको दैनिक चहलपहल बढ्दछ । चहल पहल वृद्धि हुनुका साथै विभाग र क्याम्पसहरू जीवन्त देखिन्छन् ।

(च) परीक्षाफलमा सुधार

वार्षिक प्रणालीमा विद्यार्थी उत्तीर्ण प्रतिशत सरदर ४० देखि ५० थियो । वार्षिक प्रणालीमा विद्यार्थीको सैद्धान्तिक परीक्षा वर्षको अन्त्यमा एकपटक मात्र हुन्थ्यो । वर्षभरि पढेको एकै पटक सम्भेर जाँच दिनु पर्दा कमै विद्यार्थीले मात्र राम्रो अड्क ल्याउन सक्थे । विशिष्ट श्रेणी (७५ प्रतिशत) ल्याउने विद्यार्थी नगन्य हुन्थे भने अनुत्तीर्ण हुने विद्यार्थीको संख्या पनि उल्लेख्य प्रतिशतमा हुने गर्दथ्यो । सेमेस्टर प्रणाली लागु भएपछि विद्यार्थीको नियमित कक्षा, विद्यार्थीको नियमित परीक्षा तयारी तथा ४०% आन्तरिक मूल्याङ्कनका कारण विद्यार्थीको उत्तीर्ण प्रतिशत तथा ग्रेडमा सुधार आउँदछ । हाल सेमेस्टर लागु भएका ठाउँमा उत्तीर्ण संख्या सरदर ७५% भन्दा माथि पुगेको छ ।

(छ) शैक्षिक क्यालेण्डर लागु

शैक्षिक क्यालेण्डर लागु हुन्छ र विद्यार्थी भर्ना, पढाइ, परीक्षा र परीक्षाफल प्रकाशन समयमा हुन्छ ।

(झ) विद्यार्थीको आङ्गिक क्याम्पसप्रति आकर्षण

राम्रा भवन, उत्कृष्ट शिक्षक, सस्तो शुल्क र अन्तर्राष्ट्रिय मान्यता हुँदाहुँदै पनि वार्षिक प्रणालीमा आङ्गिक क्याम्पसहरूप्रति विद्यार्थीहरूको आकर्षण कम थियो । प्रायः विद्यार्थी पाएसम्म सम्बन्धन प्राप्त र निजी क्याम्पसमा भर्ना हुन जान्थे । सेमेस्टर लागु भएपछि विद्यार्थीको आकर्षण आङ्गिक क्याम्पसहरूप्रति बढेको देखिएको छ ।

सन्दर्भ सामाग्रीहरू:

त्रि. वि. मा लागु भएको सेमेस्टर प्रणाली सम्बन्धी अध्ययन तथा सिफारिस समितिको प्रतिवेदन भाद्र, २०७४ ।

त्रि.वि.: सेमेटर सुधारका सत्र उपाय, कान्तिपुर दैनिक, २०७५ भाद्र ११ ।

शाही उच्चशिक्षा आयोगको प्रतिवेदन, २०४० ।

सेमेस्टर प्रणाली: समस्या र सुधारका उपाय, प्रा. डा. लालु पौडेल, २०७४ ।

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Designing a Term Paper: An Architect's Process from Developing a Paragraph to Formulating an Argument

*Dhruba Karki, PhD**

If I went back to college again, I'd concentrate on two areas: learning to write and to speak before an audience. Nothing in life is more important than the ability to communicate effectively.

Gerald R. Ford, 38th President of the United States

Basically, our goal is to organize the world's information and to make it universally accessible and useful.

Larry Page, cofounder and CEO of Google

The rhythms of writing are created by the same pattern-forming process of sharing that creates rhythms of dance, music and speech. Movements shared make dance, patterns shared make writing, and sounds shared make music and speech. It is also through a sharing process that we comprehend numbers. The fact that we all have ten fingers allows us to count the first ten numbers on our two hands. From ten, numbering becomes a rhythmically recurrent process: the tens make hundreds, the hundreds make thousands, and so on.

Gyorgy Doczi's *The Power of Limits: Proportional Harmonies in Nature, Art, and Architecture*

Abstract

Writing in different courses during successive semesters enhances students' potential to think critically on issue and agenda in the academia. It is a process of constructing knowledge and disseminating it to transform the world through a transformation of knowledge. Professors in the university programs, irrespective of their majors, require a term paper for a part of evaluation in the course he or she teaches in respective sessions. While writing term papers for their courses, students critically engage in a knowledge making process in an expectation of sharing it with the world through a medium of writing. When students seriously engage in a writing process of effective term papers with rigor, they would be able to acquire critical thinking skills and broaden their perspectives to explore the world

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form Toulmin calls a *warrant* (W). Warrants, he notes, confer different degrees of force on the conclusions they justify, which may be signaled by qualifying our conclusion with a *qualifier* (Q) such as ‘necessarily’, ‘probably’ or ‘presumably’. In the latter case, we may need to mention conditions of *rebuttal* (R) “indicating circumstances in which the authority of the warrant would have to be set aside” (101). Our task, however, is still not necessarily finished. For our challenger may question the general acceptability of our warrant: “Why do you think that?” Toulmin calls our answer to this question our *backing* (B). He emphasizes the great differences in kind between backings in different fields. Warrants can be defended by appeal to a system of taxonomic classification, to a statute, to statistics from a census, and so forth. It is this difference in backing that constitutes the field-dependence of our standards of argument. Ultimately, a microarguments depend on the combination of data and backing. In rare cases, checking the backing will involve checking the claim; Toulmin calls such arguments ‘analytic arguments.’ (2)

Toulmin’s data, warrant, qualifier, rebuttal and backing jointly form a strong debatable logic in an argument process. Your claim needs supports and evidences followed by qualifier. Reasoning does not only involve support but also response to anticipated counterargument. To respond to an anticipated argument against your point, you should be able to place your rebuttal in an appropriate order. Further, you should forward qualified conclusions to your proposition.

Writing a term paper is necessarily forwarding an agenda you like to explore in your higher studies as well as prospective career. In that sense, your argument in your semester term paper gives directions to your further studies. When you like to argue, you should be respecting other people’s argument even if you pose a different take. Other people’s argument can be as important as yours; however, you are participating in an intellectual debate.

“Writing is thinking.”

Anne Morrow Lindbergh

Several models of argument subsist across courses and disciplines. Proving the major argument in a term paper or research article requires a strong logical mindset. You prove your thesis statement with sub-claims and evidences from the texts, both primary and secondary. At the same time, you can prove your argument with facts and figures with supports from quantitative methods, such as interview with people, collection of public opinion and direct field visit.

Current Scenario: Merits of the Semester System

There is a general consensus among the TU stakeholders that semester-based education is good if it is implemented in its true spirit. Since the semester system has been implemented, there has been a positive change in quality education by making both teachers and students more serious in study. Revision of the curriculum, mandatory attendance in class, continuous assessment, practical experience in learning through class presentations, group projects, individual assignments and mid-term exam to review the learning progress of students are some of the positive aspects of semester-based education. Heads of central departments, faculty members, campus chiefs and students agree that if the program runs in line with the spirit of the semester system, quality of our graduates will certainly improve. End semester results of the last few years have shown more students have passed in all the semesters since the semester system was introduced.

One of the Heads of the Central Departments at the University Campus in Kirtipursaid that semester-based education program has contributed to de-politicize education. “There has been a very minimum undue political pressure from students’ unions since the semester program began three years ago. Students have been busy with their assignments, term papers and study projects. Students hardly get any time to talk about politics and do political activities on campus”. Continuous engagement of students and faculty members in teaching learning process; regular attendance of students and teachers in class throughout semester; periodic assessment of students’ learning followed by feedback from the tutors and high completion rate of the students are some of the key achievements of the semester system. Due to the positive vibe that was observed in the semester based education program, students have been gradually attracted to the TU’s constituent campuses (Poudel, 2017). Students have also felt that semester system has made them more engaging in study and developed in them the habit of continuous learning. “I had never presented in front of people and I was not sure whether I could do public speaking. The presentations that have made in the last three semesters in my classes were instrumental to develop my public speaking skills. I also feel confident to participate in academic discourse and this was possible due to the difference I have noticed in the semester system”, a fourth semester student at the Central Department of Education mentioned.

Key Issues and Strategies

In order to make semester system effective, it is important that we need to build on the strengths, identify the pressing issues and address them

immediately from the respective agencies. In this section, I would like to discuss some of the key issues that have been raised about the existing mode of semester system in TU and suggest some of the strategies to address them.

1) Semester Program Guidelines

Tribhuvan University central office has developed a general guideline to implement semester system in the Central Departments of the university campus at Kirtipur (TU, 2013). The guideline provides a general framework to implement the semester system. However, these guidelines were not adequately disseminated to the campuses while expanding the semester system to the campuses in and outside the Kathmandu valley. Also, the guidelines are not detailed enough to elaborate the various aspects of curriculum, pedagogy, assessment and the roles of different stakeholders.

In order to create ownership of the semester system, it is important that all the stakeholders have common understanding of the key features of the semester system. Based on the broader framework, the Dean's offices should prepare detailed guidelines highlighting what semester system is, how semester system works, how we define credit hour in terms of the time to be spent by students and faculty members, how it contributes to quality and what are the comparative advantages of semester system over to the yearly system. The guidelines should also clarify the roles of the Dean's Office and the campuses in implementing semester system. These guidelines should then be widely disseminated to all the faculty members and students at the beginning of the semester.

2) Curriculum

Dean's Offices requested the subject committees to revise the curriculum while switching from the yearly system to semester system and the courses were 'revised'. However, there are a number of issues associated with the curriculum that need to be addressed urgently. Firstly, some subject committees just divided the yearly curriculum into two equal parts and gave them two different course names while in some subjects the same yearly course was prescribed for the semester in their entirety. Only a very few subject committees added new courses based on the emerging needs of the market and the undercurrents of the disciplines. As the semester system requires the students to be more active and take the charge of their own learning, the existing courses do not provide adequate

space for students' creativity. The courses are still teacher centric and expect more teachers' input as they had been in the past.

In order to make curriculum semester-friendly, the Dean's Offices, in coordination with the subject committees, need to revise all the courses and update them in line with the emerging needs and latest research findings of the respective discipline(s). While revising the curricula, it will be important to have a comprehensive interaction with the faculty members who taught in the semester system in Kirtipur. Faculty members from the campuses in and outside the valley should also be involved in revising and designing the course so that there is ownership of the courses and capacity of the campuses could also be enhanced. Some of the Deans have already started revising the courses and others need to do it at the earliest. Dean's office should also organize course dissemination program before the semester begins and such program should provide faculty members an opportunity to ask questions, raise issues and discuss the potential measures to address the problems which they might face during the implementation of the curriculum.

3) Operation Calendar

Usually a semester means a six months' duration during which the entire activities including teaching, learning and assessment are expected to complete. One of the issues of yearly system was the fact that there was no strict operation calendar and it would take about 3 years to complete the 2 year courses. Similarly, the exam results would also be delayed by months and sometimes years. The expectation was that semester system would fix this issue and teaching learning activities including assessment would complete within the stipulated time. However, the experience has shown that there are still issues with the calendar. Additionally, too many public holidays and three long vacations have also affected the schedule of the semesters. Thus, the semester classes have been severely affected by these holidays and long vacations that often come during the semester.

In order to address the time issue, TU Central Office should have a broader stakeholders meeting to discuss the viable operation calendar for the semester and based on the consensus built in this meeting, the operation calendar should be developed by the TU Central Office and monitor the activities accordingly. The calendar should specify the exact date to begin and end the semesters as it is practiced elsewhere in the world. Similarly, TU authority should make a decision to organize the long vacations and public holidays in such a way that the semester

calendar is not negatively affected. Dean's office should strictly enforce the operation calendar and monitor the activities regularly so that two semesters can be completed in a year as a standard practice.

4) Modes of Instruction and Faculty Members

Faculty members are the key to the teaching system. There is a mixed pedagogy in the existing mode of semester system. Some faculty members have developed a well- designed semester plan and shared it with the students. In those classes students are aware of how the course will be delivered and what they are expected to do. However, many other faculty members are still following their usual practice of delivering lectures in their class. Most of the faculty members teaching in the semester programs neither studied themselves in the semester system nor do they have any previous experience of implementing it in the classroom. Due to the lack of such awareness, they have not been able to deliver curricular services the way they are expected to do it. So, it has been very difficult for them to own the semester system. There was no pedagogical orientation for the teachers while implementing the semester system. The courses were designed by the subject committee members who mostly teach in Kirtipur and the courses are not necessarily taught by the persons who designed the courses. The intended expectations of the courses were not well communicated to the classroom teachers. Current physical arrangement of classrooms still follows the traditional mode lecture theatre. Fixed setting of desks and benches has also created problems in creating students centered environment in classes.

It is, therefore, very necessary to conduct orientation for all the faculty members who are or will be teaching in the semester system. Such orientation should cover the following contents:

- I. Key features of the semester system
- II. Understanding credit hours
- III. Curriculum planning
- IV. Engaging pedagogy
- V. Continuous assessment in the semester system

It is also necessary to equip the classrooms with the required facilities for effective classroom delivery. Flexible seating arrangement, multi-media projector, internet connection in classroom, adequate library and laboratory resources are some of the things that need to be managed.

5) Enrolment and Attendance

There is a provision of entrance exam in the semester system. Some institutes and faculties have strictly enforced the entrance exam and students are enrolled based on their merit. However, the entrance exam in some faculties has just been a ritual practice and there were more than one entrance exams conducted in a year. Since there were not enough students in some subjects, there was a compromise to enroll the students even for those who did not have the competitive scores in the entrance exams. In some subjects there are too many students and teachers have been facing several issues due to the large classes. The attendance situation is complex and interesting. Though teachers and students say that regularity has improved since the semester system was implemented, there are still classes where student's attendance is still an issue.

In this context, admission should be granted based on the strict criteria and the scores obtained in the entrance exams. The heads of the central departments and the campus administration should coordinate with the Dean's Office to make the entrance exam as rigorous as it should be for quality education. The number of students per group should be decided based on the spirit of the semester system and the ideal class would have maximum 30 students in a group. This should be decided by the Dean's office and strictly enforced in the campuses. Similarly, the rule regarding the mandatory attendance of 80% should be strictly enforced by the administration and class teachers. Campus administration should hold discussion with the students' union and bring a consensus in this particular issue.

6) Research – Thesis Writing

Research is one of the key components of the Semester-Based Master's program and this has been widely discussed subject in our university context. There are questions about the quality of research in TU and there are different rumors in the media hue about plagiarism in TU research. Each department has their own ways of engaging students in research and there are several issues associated with it. Thesis supervision is no more counted in the workload of the teachers and they are already overloaded with a lot of work in the semester based education program, supervisors have not been able to give much of their quality time in supervising the students' research. TU does not have its official stand about plagiarism. Students are not aware of the consequences of the plagiarism (TU, 2017,

Paudel, 2017). Traditionally, they have been used to memorizing the facts and reproducing the same in exam, this tendency is seen in their research.

Research should be mandatory and all subjects should have some research components in it. Thesis supervision should be included in the workload and all the teachers should be involved in the research supervision. TU should have its official stand about plagiarism and both teachers and students should be given due orientation about plagiarism and its consequences. All the research work done by students should be digitized and all the research reports including the term papers and theses should be scrutinized by the anti-plagiarism software at the the university.

7) **Assessment**

Semester system follows the combination of in-semester and end-semester assessment. End semester exam is administered by the Dean's office but internal assessment is the sole responsibility of the teachers. There are issues with both these assessment modes and immediate attention need to be given in order to have a fair assessment system.

In the in-semester assessment, there is a great deal of variation among the teachers regarding the internal assessment of the students. Some teachers have included attendance, presentation, class discussion, participation, term papers and assignment in their internal exam but some others have included only a very few of these. Students often complain that some teachers have randomly assigned internal assessment marks without sharing any explicit criteria with the students. There is a lack of coordination among the faculty members in assigning the term papers and internal exams to the students. Sometimes students feel overloaded due to the various works from different teachers and they cannot cope with the load.

In order to make in-semester system more effective, the Dean's Office should develop a detailed guideline on the mode of internal assessment and all the teachers should be trained in implementing it in their classes. Rubrics should be developed for every assignment so that the scores provided by the teachers on the students' performance can be justified. There could be variation in the methods and procedures from department to department and teacher to teacher but there need the explicit criteria base on which the grades could be assigned. Each teacher should provide the detail rubrics for each internal assessment and the

marks/scores/grades given to the students should be explicit so that students can openly discuss their grades with their respective teachers.

There are also issues in the end-semester exam conducted by the Dean's office and it is not much different from the exam that used to be conducted by Balkhu in the past. The questions asked in this exam still focus on lower order thinking skills and based on memorization rather than being creative to focus on the higher order thinking skills. The test items are developed by a small group of people and faculty members who teach the courses across the country are not necessarily aware or not necessarily consulted on the type of test items developed for the end semester exam. The Exam Offices that are established under the Dean's Offices are highly under-resourced. There is lack of both physical and human resources in these offices.

In order to improve the test items of the end semester exam, item writing workshop should be designed for all the teachers and such workshop should focus on making test items more creative and exploratory. All the teachers who teach the course should be involved in designing the test items and the Exam Office of the Dean should create an item bank. Campus administration should strictly administer the end-semester exam and all the teachers should be mandatorily involved in supervising the exam administration to avoid any irregularities. Dean's office should also monitor these exams and any irregularities noticed during the exam should be immediately addressed with prompt action (s).

Conclusion

Tribhuvan University adopted semester-based education program to address the issues of quality education despite the lack of sufficient preparation for its effective implementation. In the last few years, we have demonstrated that semester system works in our context and it could be adopted as a pedagogic choice for quality education. Building on the strengths we have created, we need to overcome the weaknesses. Based on the lessons learnt in the past and the constraints we are facing at present, we need to find ways of improving it gradually. So far, the focus was on its acceptability but now on the concentrations should focus on its quality. As we continue, we might need a series of revisions and improvements at all levels and this will be possible if we fully own it, be accountable to it and contribute to its effective implementation.

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Emerging Conundrums of Research and Supervision in Higher Education in Nepal

*Dr. Govind Subedi**

Higher education or University Education is fundamentally different from the school education. In the latter education level, the main purpose of teaching and learning is to diffuse the existing knowledge among the students while the main purpose of the former level of education is to generate knowledge in a specific discipline and contribute for human's overall development. According to Jawaharlal Nehru – the Ex–Prime Minister of India,

A university stands for humanism, for tolerance, for reason, for the adventure of ideas and for the search of truth. It stands for the onward march of the human race towards ever higher objectives. If the universities discharge their duties adequately, then it is well within the nation and the people.

To be a World Class University, the following four conditions are said to be met: i) getting talented faculties, ii) admission of the talented students, iii) well–established research and iv) good governance in the University. Drawing on the secondary information and some telephone conversation with the experts of research and supervision, this article mainly focuses the third requirement for being as the World Class University. This article is divided into four sections. Section one brings a brief overview of factors affecting research and supervision in higher education in Nepal. Section second critically reviews the research and supervision policies and practices in Tribhuvan University. Section three reviews the University Grant Commission (UGC) guidelines for regulation of research misconduct and awarding MPhil and PhD degree and the final section draws the conclusions.

1) Overview of Factors Affecting Research and Supervision in Higher Education in Nepal

There are several factors affecting on research and supervision in higher education in Nepal including emergence of multiple–universities, shifting in

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research places outside of the university, inadequately trained human resources, meager financing in higher education.

- **Emergence of Multiple–Universities :** Till the early 1990s, there was only Tribhuvan University (TU) as a higher education institution in the country. By the early 2018, 10 full Universities¹ and four are medical academics² have already been established in the country. These universities and medical academics run mainly the Bachelors and Master Programs and also partially MPhil and PhD programs in different disciplines, namely, Social Sciences, Education, Management, Medical Science, Forestry, Science and Technology, Agriculture, Engineering, Law, Sanskrit, Buddhism and other disciplines. These institutions are also expanding their networks within the country and outside of the country through Memorandum of Understanding (MoU) or exchange programs or research work.

Further, establishment of many campuses with the affiliation of foreign university/academic institutions has widely been taken place especially after 2000 when the Government of Nepal liberalize the higher education policy and welcoming the foreign universities /institutions for the growth of academic institutions in Nepal.

- **Shifting Research Places Outside University :** In the past, almost all policy research was conducted in Tribhuvan University especially in its Research Centers³. One of the key examples that can be cited is the eight ethnographic studies about the women's status in Nepal. The studies were commissioned by CEDA in early 1970s and the findings of the studies were largely mainstreamed in development policies in Nepal. After the

¹ These Universities include i) Tribhuvan University (TU), ii) Nepal Sanskrit University (NSU), iii) Kathmandu University (KU), iv) Pokhara University (PokU), v) Purbanchal University (PU), vi) Lumbini Baudha University (LBU), vii) Agriculture and Forestry University (AFU), viii) Mid-Western University (MWU), ix) Far Western University (FWU) and x) Rajashree Janaki University (RJU)

² The Medical academics include: i) National Academy of Medical Sciences (NAMS), ii) Patan Academy of Health Sciences (PAHS), iii) BP Koilarala Institute of Health Sciences (BPKIHS) and iv) Karnali Academy of Health Sciences (KAHS).

³ There are four Research Centers in TU: Centre for Economic Development and Administration (CEDA); Research Centre for Educational Innovation and Development (CERID); Centre for Nepal and Asian Studies (CNAS) and Research Centre for Applied Science and Technology (RECAST).

1990s when Nepal has opened up its economic policy and entered into multiparty system, policy research has been conducted increasingly across the private consultancies, Non-governmental organizations, and United Nations Organizations and Government agencies. This trend has created a tremendous pressure in University Community to be very much competent to contest for research project nationally and internationally.

- **Meager Human Resources in Research and Supervision :** In terms of number, a large number of human resources are currently working in the universities in Nepal. By the end of FY 2015/16, there were altogether 9,142 teaching faculties across the nine Universities⁴ in the country. The distribution of the teachers according to the level of faculties shows an inverse pyramid shape (excluding some temporary posts like Teaching Assistants and Instructors). The proportion of teachers, for example, declines from 37.5 percent for Assistant Professors, to 26 percent for Associate Professors and to 8 percent for Professors. An overwhelmingly majority of the human resources is in Tribhuvan University, that is, 77 percent Professors, 92 percent Associate Professors and 89 percent Assistant Professors are in Tribhuvan University (Table 1).

Table 1 Number of Teaching Faculties in TU and other 8 Universities

Levels of Faculties	TU	Other eight Universities*	Total	% out of total	% Share in TU
Professor	566	166	732	8.0	77.3
Associate Professor	2206	197	2403	26.3	91.8
Assistant Professor	3060	365	3425	37.5	89.3
Lecturer	4	249	253	2.8	1.6
Teaching Assistant	1669	43	1712	18.7	97.5
Instructor	461	NA	461	5.0	100.0
Total	7966	1176	9142	100.0	87.1

Note: *other eight universities include all universities stated in footnote 2 except RJU and TU.
Source: UGC, 2017.

⁴ The teaching faculties of Janaki Rajashri University have not been included as this is newly established University (established in early 2018).

Data is not available about the proportion of PhD holders and non-holders at the national level. A case study of University Campus revealed that there were only 42 percent teachers having PhD degree in University Campus in early 2014 University Campus, TU (2014). Although the University Campus is the central campus of TU where most of the MPhil and PhD programs are held, the share of the senior teaching faculties in University Campus to the total teaching staff appears to be incomparably lower compared to the teaching faculties' distribution of Jawaharlal Nehru University (JNU), New Delhi. For example, the share of Professor and Associate Professors at JNU was 45.5 percent and 29 percent in 2011, respectively. On the other hand, the comparable figures for the University Campus, TU were just 23 percent and 21 percent, respectively. This reflects the fact that even the Central campus lacks senior faculties to lead a good quality research work and supervision as well.

- **Poor Public Financing in Higher Education** : Public financing in higher education is very low in Nepal. This reflects a low priority in higher education. Higher education budget increased merely to Rs. 7.07 in Fiscal Year (FY) 2015/16 from Rs. 2.04 Billion in the FY 2006/07 (Table 2).

Table 2: Allocation of Government Budget in Higher Education, FY 2006/07–2015/16 (Rs. in Billion)

Year	Amount in Billion Rupees				% share of Higher Education Budget in:		
	GDP*	National Budget	Education Budget	Higher Education Budget	GDP	National Budget	Education Budget
2006/07	670.6	143.9	23.0	2.04	0.30	1.42	8.9
2007/08	744.9	169.0	28.4	2.30	0.31	1.36	8.1
2008/09	991.3	236.0	39.1	3.08	0.31	1.30	7.9
2009/10	1171.9	285.9	46.6	3.68	0.31	1.29	7.9
2010/11	1346.8	306.5	57.8	4.66	0.35	1.52	8.1
2011/12	1689.5	384.9	62.0	5.33	0.32	1.38	8.6
2012/13	1900.0	404.8	63.4	5.91	0.31	1.46	9.3
2013/14	NA						
2014/15	2000.0	618.0	86.0	6.41	0.32	1.04	7.5
2015/16	2131.0	819.5	98.6	7.07	0.33	0.86	7.2

Note: GDP refers to Gross Domestic Product.

Source: UGC, 2017.

The amount of higher education budget to the GDP comes out less than or around 0.33 percent in each year over the last decade. Compared to the national

budget, the share of the higher education declined to 1.04% in FY 2014/16 and even to 0.86% in FY 2015/16 from 1.42% in the FY 2006/07. Of the total education budget, the share of higher education budget is as low as 7 percent to around 9 percent and it has declined in recent years (Table 2).

2) Research and Supervision Policies and Practices in Tribhuvan University

- **Policy on Research and Supervision :** TU has still to adopt a unified policy to regularize the research and supervision activities across its different disciplines. The Five-Year Strategic Plan of Tribhuvan University (2014–2019) recommended several actions (TU, 2015) but it has not been implemented well. The Strategy recommended the following actions: i) identification and defining the research priorities and policies at the central level; ii) development of research areas at the execution level based on the broader research priorities identified, iii) allocation of research fund in the priority areas, iv) defining plagiarism policy guidelines and strictly implementing them, and v) adoption of act against plagiarism to maintain academic ethical standards.

Similarly, in mid-2017, TU authority has constituted a three-member committee led by a Geographer – Prof. Dr. Bhim Prasad Subedi to maintain the minimum standards for the Master Level, MPhil and PhD level theses. The report of the committee has yet to be adopted by the TU Executive Council. The committee⁵ recommended the following:

For Master Level:

- a) The concerned Central Department/Campus has to form a Research Committee and all the students are required to present their research proposals to the Committee. The proposal has to be approved by the Research Committee before conduction of further research.
- b) The students require submitting the progress report to the Supervisor in each step of their research process and also produce raw data to the Research Committee/Supervisor.
- c) The University requires developing software for verifying whether or not plagiarism has taken place. The university shall make responsible

⁵ The discussion is based on the Telephone conversation with Prof. Subedi.

to Supervisor, Head and external if any plagiarism is committed by the students as well.

- d) Make provision of digitization of theses across the disciplines and make accessible it to the students and teachers.

For MPhil/PhD:

Following the practices of many of European Universities have such provision, the committee recommends the following measures to increase the validity of the PhD work:

- a) Supervisors are required to visit/conduct the field work with the candidate. The Supervisors should at least have knowledge on when, where, how the information/data have been collected by his/her students.
 - b) While publishing the article from the PhD work, at least one article shall be co-authored by his/her Supervisor.
- **Institutional Mechanism in Research and Supervision** : The key responsible organizations to formulate, implement, monitor the minimum standards for research and supervisions in TU are Dean Offices, Research Centers, Research Division, Central Departments and Campuses/Departments.
 - **Office of the Deans** : In Dean Offices, research committees have been established to monitor, evaluate and examine the research work, especially in MPhil and PhD programs. The committee members are expected to be the high standards senior faculty members in the concerned discipline. It is claimed that many of the Dean Offices are highly influenced by political *bhaga banda* and this polity also holds while selecting the members of the Research Committee. This unfortunate tendency precludes the talented experts from the Committee.
 - **Research Centers** : TU has four research Centers established mainly for carrying out the research in different disciplines. CNAS was established to carry out research on humanities and social sciences issues; CEDA was established to carry out research in Economic Policy and Management sector; the CERID was established to carry out research in Education and RECAST was established to carry out research in science and technology. Looking at the websites of these Research Centers, it appears that there are

a few landmark research carried out by these research centers for the last five years.

- **Center for Research Division, the Rector Office** : This office is supposed to lead the research work in the entire University. The Division carries out some 35 to 40 mini-research annually, publishes an Annual Journal and also provides research methodology training to the faculty members across the country. The mini-research is awarded to junior faculty especially those who are not PhD holders. The amount of research is very low – it is about Rs. 40,000/researcher. According to the former Director of the Division, Prof. Dr. Tara Datta Bhatta, the quality of the mini-research cannot be said to be standards one due to the following reasons: i) lack of good quality human resources in the Division, ii) low budget allocated per research work and iii) favoritism involved in the evaluation of the research work by the experts. He reported that although the research work is evaluated by the experts and viva-voce is also called on, the evaluation process has not yet become academic one. The Research Division publishes Academic Journal annually – but its quality is questionable as it has still go through the peer reviewed or indexed journal standards procedures. The Journal Management committee is always in undue pressure from the 'higher academic echelon' and politically activist faculty members to consider their articles or their *aphno manchhe* (own person) articles to be published. The same things happen when providing the research methodology training to the faculty members.
- **Central Departments** : There are 39 Central Departments in TU from Faculty of Education, Faculty of Humanities and Social Sciences, Faculty of Management and Faculty of Science and Technology. These Departments provide teaching to Master Level students. Some Central Departments also provide MPhil and PhD level education. Faculties are involved in research work through i) supervision of the students' thesis and ii) involvement of research project carried out by the Departments. The standardization of the MA thesis across all disciplines has become challenges especially after the access to digital copy of the thesis in the Central Library or in the Internet In mid-2017, some media also blamed that thesis in some Central Departments were largely copied from other work and severe plagiarism occurred. The media also highlighted the negligence of faculty members as the supervisors. This has led the TU authority to constitute an expert committee to suggest the regulation of the thesis work and maintain the academic integrity .

- **Campuses** : The constituent campus has had their own research Departments and the research opportunity has increased especially in Autonomous Campuses due to the availability of fund from the Higher Education Project funded by World Bank. From the telephone conversation with the faculty members of Mahendra Ratna Campus, Ilam, it was found that many junior faculty members have carried out research work and also got opportunity to publish their work in the Academic Journal published from their own campus. Similarly, it was also known that the PK Campus, Kathmandu has also established the Research Division and its faculty members are increasingly getting opportunity to conduct the research work. On the other hand, it is learnt that due to the high political contestation in some campuses such as Mahendra Ratan Campus, Kathmandu, mobilization of campus research funds has not been effective.

2) UGC Policy on Research and Supervision

University Grants Commission (UGC) of Nepal has issued guidelines to address the research misconduct and also maintain minimum standards for awarding PhD and MPhil degrees. According to the UGC Procedure for Addressing Allegation of Research Misconduct, 2018, the research misconduct refers to the research process involving proposal writing, submission of progress report, and submission of report writing with the intention of committing the falsification, fabrication of the event/action, plagiarism, self-plagiarism and harmful activities towards the individuals, animals, environment, public and private property. The research misconduct is classified into simple, medium and severe one and accordingly the punishment is offered (Box 1).

Box 1 Level of Research Misconduct and Nature of Punishment, UGC, Nepal

Level of Misconduct	Defining the Misconduct	Nature of Punishment
Simple Misconduct	<ul style="list-style-type: none"> • Copying the other's work without reference in section other than the Primary Data Analysis • Minimum harmful to the researched 	All three or any one: <ul style="list-style-type: none"> • Take the statement (<i>spastikarn</i>) • Issue the warning letter • Order for excuse, or revise the work or withdraw the part of the work
Medium Misconduct	<ul style="list-style-type: none"> • Considerable Plagiarism in sections other than in 	Both or any one: <ul style="list-style-type: none"> • Order for excuse, or

	<p>the Primary Data Analysis</p> <ul style="list-style-type: none"> • Considerable harmful to the researched 	<p>revise the work or withdraw the part of the work</p> <ul style="list-style-type: none"> • Special terms and provisions to be added in the implementation of new grants, contracts and agreement
Stringent Misconduct	<ul style="list-style-type: none"> • Massive plagiarism in the all or part of the Section of Primary Data Analysis • Fabrication • Falsification • Severe adverse impact on the researched 	<p>Any one or all:</p> <ul style="list-style-type: none"> • Order for excuse, or revise the work or withdraw the part of the work • Stop or suspend the current grants, contracts or agreements • Prohibit activities or expenditure in any part of the grants, or contract or agreement • Conduct special inquiry • Add the special terms to the implementation of grants, contract and agreement • Make provision for additional certification of the research work • Stop the grants for a period • Stop the grants permanently • Prohibit the Researcher convicted to be the Advisor of the UGC • Add much punishment in case of the Government staff

Source: summarized from UGC, 2018.

The Minimum Standards and Guideline for Awarding PhD, 2073 (2016) and set the provision of an academic institution that can run the PhD program, minimum qualification for PhD candidate for the enrolment, establishes minimum qualification for the main and co-supervisors, and process and terms for receiving the PhD degree. The qualification of the main and co-supervisors

are defined as presented in Box 2. Similarly, the Minimum Standards and Guideline for Awarding MPhil, 2073 (2016) also has the same provisions as in the Guidelines for Awarding PhD except the qualification of Supervisors, and terms for final evaluation of the MPhil thesis.

Box 2 Minimum qualification for the Main, Co-supervisor for PhD thesis and MPhil Supervisors, UGC, Nepal

Parameters	PhD Supervision		MPhil Supervisors
	Main Supervisor	Co-Supervisor	
Education	PhD	PhD	MPhil degree
Position	Professor or Reader	Minimum Lecturer or equivalent	Professor or Reader
Working status in the concerned academic institution	Full time or part-time or affiliated through the University Exchange program	Full time or part-time	Full time or part-time
Article publication in a peer reviewed or indexed journal or journal approved by the UGC	At least 5 articles (<i>if the Professor has already worked for more than 10 years, this term shall not be applicable</i>)	At least 2 articles	At least 2 articles (<i>if the Professor with PhD has already worked for more than 10 years, this term shall not be applicable</i>)
Maximum number of students to be supervised simultaneously	5 students for Professor and 4 students for a Reader	5 Students for the Professor, 4 for the Reader and 3 for the Lecturer	6 students for Professor and 5 students for a Reader and 4 for Lecturer

Source: summarized from UGC, 2016a and UGC, 2016b.

Box 3 summarizes the process and terms for receiving the PhD and MPhil degree.

Box 3 Summary of process and terms of receiving the PhD and MPhil degrees, UGC Nepal

Parameters/requirements	PhD	MPhil
1. Research Committee	Present research proposal	Present research proposal and initiate research work after approval of the proposal
2. Instruction Committee (Three-member)	Guide for research, publication, and revision of thesis Submit annual progress report	
3. Time-frame	Proposal submit within one year	
4. Publication of articles	At least 2 from the research work in a peer reviewed or indexed journal	At least 1 from the research work in a peer reviewed or indexed journal
4. Final Evaluation		
i. Time frame	Given time	Given time
ii. Expert Committee	Three members (at least one foreigner)	Three members (at least one shall be external-foreigner or native)
iii. Viva-voce	Candidate's compulsory attendance	Candidate's compulsory attendance
iv. Plagiarism clearance	Yes (either from UGC or concerned academic institution)	Yes (either from UGC or concerned academic institution)
v. Language	Abstract must be in both English and Nepali language	Abstract must be in both English and Nepali language

Source: summarized from UGC, 2016a and UGC, 2016b.

Conclusions

Reviewing the research and supervision status in higher education, especially focusing on Tribhuvan University, the following conclusions can be drawn. First, higher education in Nepal is provided by not only a single university but also by a range of universities, academic institutions and foreign universities through their affiliated colleges. Thus, higher education has become highly complex phenomenon-different universities, different modalities of operation, research and supervision as well. Second, universities are getting increasingly in pressure to increase their capacity in carrying out world class research. Research today is not sole activity of university but it is also widely conducted

even outside of university. Although there is large number of teaching staff in universities in Nepal, it does not mean that *all* the teachers are equally capable of carrying out a good research and understand the minimum standards for supervision. This is because research has yet to become an integral part of teaching in Nepal's universities.

Third, the low public financing in higher education means that there has been less recognition of the importance of the higher education in general and research in particular to country's development among the political and bureaucratic elites. Huge lobbying for greater allocation of budget to research in higher education is required from the academic community and TU authority as well. Fourth, UGC has recently adopted four landmark guidelines in regulation of misconduct in research and awarding MPhil and PhD degrees. In addition to TU's own study report about thesis's standardization, TU must adhere to UGC's guidelines in its research and degree awarding procedures and must immediately prevent unscrupulous influences. Finally, failure to control plagiarism, research misconduct will have greater adverse implication not only for the students, faculties but also in the entire Tribhuvan University and thus for higher education. Adoption of code of conduct having the features of scrupulousness, reliability, impartiality and independence in research process is the pre-requisite for marching of TU towards achieving the goal of World Class University.

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Geopolitical Situation of Nepal: Role of BRI in her Prosperity and Development

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Abstract:

This article argues that China-led Belt and Road Initiative (BRI) is significantly important for Nepal's infrastructure driven development and growth oriented prosperity. Analyzing policy coordination, connectivity, unimpeded trade, financial integration, and people-to-people bonds as the five pillars of BRI, this article considers BRI as the best opportunity for Nepal not only to diversify her trade but also to get closely connected with the global value chain. Identifying geopolitical vulnerabilities as the major challenges to Nepal's search for infrastructure driven development and growth oriented prosperity through BRI, this article calls for taking India into confidence by convincing the southern neighbor that BRI for Nepal is not a strategic partnership with China against India-- which has reservations against BRI-- but entirely an economic cooperation for Nepal's development and prosperity.

Key Words

BRI, China, Nepal, Prosperity, geopolitics

Background

At the time when China-led Belt and Road Initiative (BRI) has kick started its projects and ventures globally, Nepal's geographical proximity and

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geostrategic location are being prioritized. Claims are laid that Nepal's prosperity is dependent on its geographical proximity with China. As one of the strategically important neighbors to China, Nepal, today, is variously suggested to reap the benefits from the infrastructural projects and connectivity schemes under BRI. While China aspires to be "great modern socialist country that is prosperous, strong, democratic, culturally advanced, harmonious and beautiful"¹ by mid-21st century, the post-conflict Nepal yearns for infrastructural development, unimpeded trade and better connectivity through China-led BRI.

As an attempt to make the world more developed, harmonious, inclusive and peaceful by connecting Asia with Europe and with Africa along the ancient silk routes² BRI has arisen big hopes for the land-locked countries, small states, island countries and peripheral states. Surprisingly, the conventional cliché of "landlocked" is being gradually dismantled through the connectivity projects under BRI. Development economists often consider the landlocked situation of Nepal as a major impediment to her search for infrastructural driven development and growth oriented prosperity. Nepal's lack of access to sea is frequently blamed for her underdevelopment. However, signing of transit and transportation agreement with China in 2016 has, to some extent, altered the conventional identity of Nepal as a landlocked or sometimes as "India-locked" due to Nepal's asymmetric dependence on India. Albeit Nepal joined BRI only in May 2017, Transit and Transportation Agreement of 2016 provided Nepal an opportunity to bridge the second biggest economy in the world with the South Asia because the Chinese borders with Pakistan and Afghanistan are restricted by extreme natural conditions and India has great historical burden with China while Bhutan does not have diplomatic relations with China.³ Now, with the signing of the treaty, Nepal is land-linked both to the Chinese port of Tianjin and the Indian port of Kolkata. Due to this Nepal is expected to reap the benefits of being a bridge between its two giant neighbors⁴. Although India still has reservation against China-Nepal-India corridor under the BRI framework, Nepal hopes to be more prosperous and developed by modernizing its infrastructures, enhancing connectivity, and obviously through investment projects and above all intensifying people-to-people relations under the BRI projects.

The notion that Nepal should move beyond the conventional cliché of landlocked country and try to materialize on its status as a land-linked nation is gaining impetus. The 14th National Periodic Plan also prioritizes projects to convert Nepal into a land-linked state and achieve Sustainable Development Goals by 2030.⁵ Economists, development planners, foreign policy experts, and the business community are often caught accentuating that the country should

draw benefits from the BRI projects. Also, during the election campaigns of 2017, two top leaders of Nepal's major communist parties Pushpa Kamal Dahal and KP Sharma Oli repeatedly promised to link Nepal and China via rail services and make Nepal prosperous. Railway services are a long-awaited yet unfulfilled dream for the Nepalese. If Nepal is all set to use China's existing high-speed train of 300 km per hour, Nepal's east to west could be covered in about three hours while the journey from Kerung to Kathmandu, Kathmandu to Pokhara, and Pokhara to Lumbini could take only half an hour each⁶. Notably, Lhasa of Tibet is emerging as a major transportation hub in western China. China has announced another railway to connect Lhasa with Chengdu of Sichuan. Chinese growth centers and manufacturing hubs are thus moving closer to Nepal. Hence, Lhasa-Shigatse- Kerung railway could prove to be a great asset for Nepal's search for infrastructure driven prosperity and growth oriented development.

Besides the expectations of economists, development planners, foreign policy experts, and the business community from BRI, common Nepali people also have high hopes for Nepal's development from BRI. For instance, general people were not happy when Sher Bahadur Deuba led government scrapped a \$2.5 billion deal with China Gezhouba Group Corporation to build the 1,200 MW Budhi Gandaki Hydroelectric Project, which would be the largest in the country.⁷

Defining Prosperity in Relation to BRI

What makes a country developed, prosperous and wealthy? There are many indicators to apprehend the wealth of a nation: the Gross National Product (GNP), the Gross Domestic Product (GDP), the Balance of Payments, foreign exchange reserves, rate of economic growth, per capita income, among others.⁸ In addition, the volume of trade, the share in the international trade (both imports and exports) and the rate of growth in both of these also provides an idea about the strength of the economy and its ability to sustain the wealth, accelerate development and accommodate prosperity. At the same time, a country's prosperity is also propelled by “rationality, development planning, rise of productivity, rise of levels of living, social and economic equalization, improved institutions and attitudes, national consolidation, national independence, democracy at the grassroots and social discipline”.⁹

Since Nepal's campaign for development has been a halting effort and an unfulfilling experience time and again, a prosperous Nepal is greatly aspired by all Nepalese these days, chiefly owing to the geostrategic location it has between two emerging Asian economies— India to the South and China to the North.

Looking at the catastrophes in the West, exemplified by Brexit and Trump's anti-liberal engagements, it seems, globalization, and liberal world order, is being led more by the East than the West. China-led BRI is an apt example of how east is championing the cause of globalization through enhanced connectivity and infrastructural development. Generally, China-led Belt and Road Initiative (BRI) is understood as an economic road map for gradual integration of global trade and finance. Since BRI project believes in peaceful co-existence, and emphasizes on equality and cooperation for mutual benefits, it is expected to open more ways for Nepal to get connected with global value chain. Economically, OBOR allows Nepal to diversify her trade relations. OBOR project, once Nepal joins it, will help end our over-dependence on India for our trade and economic growth.¹¹

Pillars of BRI and Implementation Challenges

Policy coordination, connectivity, unimpeded trade, financial integration, and people-to-people bonds are identified as the five pillars of BRI. But, political instability in Nepal, its sluggish bureaucracy, different layers of external interventions, politicization of bureaucracy, geopolitical vulnerabilities have generate intricate hindrances to reach into apolicy coordination over unimpeded trade and financial integration to further enhance the people-to-people relations between the member countries of BRI. It is a big challenge for the implementation of BRI projects in Nepal. For instance, five different ministries under the Nepal government have submitted names of 22 projects that could be built under China's BRI, but they have failed to present detailed proposals as directed by the Ministry of Finance (MoF), preventing the country from reaping early benefits from Beijing's ambitious plan to revive the ancient Silk Road to promote trade and support economic integration across Asia, Europe, and Africa.¹² The MoF has so far received names for projects including construction of a rail corridor project, a cross-border transmission line project, two regional airport projects, three irrigation projects, six road projects, two drinking water projects, one disaster management project and six tourism related projects under the BRI. The names of these projects were submitted following the directive issued by Finance Secretary Shankar Prasad Adhikari on November 26 of 2017. But they have not submitted detailed

proposals. Meanwhile, the Chinese government is yet to inform the government about investment it intends to make in Nepal to implement projects under the BRI.¹³ To list out the named projects under BRI, Ministry of Energy has proposed 400KV Rasuwagadi-Kerung cross-border transmission line project, while Ministry of Irrigation has proposed Sunkoshi-Marin diversion multipurpose project, Mid-hill tar lift irrigation project, Paanchkhal Valley lift irrigation project, sediment related disaster prevention project and climate change adaptation in surrounding areas of Arniko Highway. Similarly, Ministry of Water Supply and Sanitation has proposed project on groundwater extraction in Chandragiri Valley and Manadev Khola rainwater harvest project. The list from Ministry of Culture, Tourism and Civil Aviation, and Ministry of Physical Infrastructure and Transportation includes:

Ministry of Culture, Tourism and Civil Aviation

- Regional international airport in Dhangadi
- Regional international airport in Biratnagar
- International conference hall
- Tourist bus terminal and stop over
- World-class amusement park
- Historic/cultural park
- International ski training and rock climbing center
- Integrated tourist destination development in 7 states

Ministry of Physical Infrastructure and Transportation

- Nepal-China rail corridor
- Karnali road corridor (Jamunaha-Hilsa) through proposed Hilsa dry port
- Gandaki road corridor (Belhaiya-Korala) through proposed Korala dry port
- Thori-Kerung road corridor through proposed Kerung dry port
- Kodari-Birgunj road corridor through Kodari dry port
- Koshi road corridor (Rani-Kimathanka)
- Bhitthamod-Lamabagar-Lapcha road corridor¹⁴

Once these projects are finalized, detailed project reports prepared, and feasibility studies done and are finally implemented, it allows Nepal to look beyond asymmetric dependence on India for trade and commerce. Implementation of such projects provide Nepal an opportunity to develop requisite infrastructure to attract more tourists. It gives Nepal a chance to learn from construction experience of China, and to improve the capabilities of its

human resources. Rails, roads and communication, as the connectivity schemes under BRI, will definitely materialize the dream of a prosperous Nepal. But if geopolitical threats are not concurrently minimized, there is also a danger of Nepal being caught in a geopolitical game between India and China. This is evident from Nepal taking its time to sign the BRI MoU and sending a deputy prime minister, and not a prime minister, to the BRI summit.¹⁵

As the part of precaution, the models of financial integration under BRI project also need to be thoroughly studied to get rid of probable debt trap. A recent World Bank report clearly mentions that Nepal needs to invest around 2.5-3.5 percent of its GDP on infrastructure if it is to become a proper developing country by 2030. Financing is tough, which may nonetheless be managed, but other soft things like construction experience, technology and human resource are also missing.¹⁶ Essentially, BRI fulfills that gap for Nepal. Learning from Chinese construction experiences, devising required infrastructure and technology and modernizing human resources are the trails where Nepal shall tread for her anticipated prosperity and development.

At the People-to-People level, however, BRI is expected to uplift peasants, marginalized, proletarians, rural and vulnerable communities residing in border areas of Nepal and China through better connectivity and by adhering to the belief of the Community of Common Destiny, which is the core principle of BRI. The BRI projects are also anticipated to intensify interactions among people of different origins, different countries and different continents and strengthen people-to-people relations through the infrastructural projects and connectivity programs. BRI also helps to promote different types of arts and architectures, literature and religion through connectivity and cross cultural networks, and make remote places easily accessible through advanced modes of transportation networks and technological development.

BRI and Geopolitics in South Asian Region

In 2017 the South Asian region was repeatedly covered by global media networks, firstly, following the Doklam stand off between China and India; secondly, when US President Donald Trump advocated of the concept of "Indo-Pacific"; thirdly, during the time of Nepal's elections; and fourthly, with Sri Lanka's handing over the Hambantota port to China.¹⁷ The Doklam dilemma brought to light the competition and cooperation between the rising powers that lie next to Nepal. While China is amassing much geopolitical influence, her BRI project has boosted its international influence and stature. Meanwhile, India that has a strategic partnership with and support of the only global power, the US, may be losing its time-honored sphere of influence.¹⁸ Because the influence and clout of BRI is so immense which accommodates Asian

Infrastructure Investment Bank (AIIB), China Pakistan Economic Corridor (CPEC) and Bangladesh-China-India-Myanmar Forum for Regional Cooperation (BCIM). Although India is still reluctant to join BRI, China has an opportunity to cooperate with India through BCIM forum. But, to get connected to South Asia through railways and infrastructures, BCIM is not a way out. For that purpose, Nepal is the only way out for China, particularly, to get access to the immense market and demography of UP and Bihar since India will not let her economic nationalism eroded through BCIM forum. As China does not have diplomatic ties with Bhutan, Nepal's strategic location is ageographical advantage for the country".¹⁹ Most importantly, the Qinghai-Tibet Railway connecting to Kerung, Kathmandu and Lumbini is one of the vital BRI projects aimed at integrating economies between South Asia and China.

Professor Hu Shisheng, Director of the Institute of South and Southeast Asian and Oceania Studies at China Institutes of Contemporary International Relations, believes that China is anxious to see a stable neighborhood. China wants to share its new prosperity to its immediate neighbors, which in turn will make its 'periphery' stable and prosperous. China sees Nepal as the most viable bridge between China and South Asia as the two countries share a stable border.²⁰ China wants the whole world to understand BRI as an endeavor to make the world more developed, harmonious, inclusive, and peaceful by connecting Asia with Europe and Africa along the ancient silk routes.²¹ BRI demonstrates reverence to the territorial integrity and sovereignty of the partner countries. BRI project clearly reject saggression and interference in internal affairs of partner countries but emphasizes on equality and cooperation for mutual benefits. The BRI platform is definitely advantageous for Nepal's prosperity that beings by not only putting an end to the asymmetric dependence on India for trade and economy and also by diversifying her trade relations.

BRI and Connectivity Opportunities for Nepal

Landlocked Nepal has been facing high trading costs. With the improved connectivity under BRI, Nepal could lessen the trading cost. Nepal has had long and historic ties with China, Tibet and India. At one period of time all three countries—Nepal, India and China—were prosperous and Nepal was a trade route between India and China. But after the 18th century, this linkage was broken as the colonial British rulers shifted their focus to opium trade with the eastern coast of China through Sikkim's Nathu La pass.²² For now, Rasuwagadhi-Kerung border point is the only trade and transit point between Nepal and China, which is yet to be upgraded to international standards. Beijing has already pledged \$8.3 billion to build roads and hydropower plants

in Nepal. As part of its ambitious “One Belt, One Road” initiative, Beijing is looking into the possibility of connecting Kathmandu to Lhasa in Tibet via railways at an estimated cost of \$8 billion.²³ Kerung border point-- the nearest town to the Nepal border in Chinese territory—is expected to connect Nepal with all of South Asia as well as Central Asia via the Qinghai-Tibet rail.

Currently, this is the only available route to enter Tibet from Nepal. After the earthquake in 2015, China decided to close the Kodari route, replacing it with this one, but the infrastructure on the Nepal side is very inadequate.²⁴ Under the BRI project, as Nepal and China have agreed to expedite cooperation in the field of cross-border railway connectivity, the dream for China's train to Nepal came further closer after a high-level 35-member Chinese team along with China's National Railway Administration Deputy Chief Zheng Jian visited Rasuwa, Kathmandu, Pokhara and Lumbini, to carry out the preliminary feasibility study of a railway in Nepal in the second week of November of 2017.

Based on the preliminary survey, the construction is forecast to cost NPR 270 billion for the 100 km railway from the Chinese border town of Kerung to Kathmandu.²⁵ On railway connectivity, the statement made by Nepal's former Prime Minister Baburam Bhattarai in the "21st Century Maritime Silk Road International Expo" held in Guangdong Province of China seems relevant here. "The extreme geography cannot limit us. The Qinghai-Tibet Railway has already shown how modern railway technologies can link the most remote and difficult to reach places. So, linking China's Tibet autonomous region and Nepal is possible both through technical and economic means".²⁶

Apart from railway projects under BRI, four Chinese carriers—Air China, China Southern, China Eastern and Sichuan Airlines—operate flights to Nepal. China Southern operates two daily flights on the Kathmandu-Guangzhou route, while China Eastern and Air China operate daily flights linking Kathmandu with Kunming and Lhasa, respectively. Sichuan operates four weekly flights on the Chengdu-Lhasa-Kathmandu sector. Tibet Airlines has also joined the club recently. These flights have also enhanced connectivity through people to people relations and tourism. Also, to further boost up Nepal's connectivity with the outside world, the construction of Pokhara International Airport has started with the Chinese assistance. The project is scheduled to be completed by July 10, 2021. Once the airport is ready for operation, it will have 2,500 meters long and 45 meters wide runway which can handle medium category jets such as Boeing 757 and Airbus 320.²⁷ Thereby the burden of Tribhuvan International Airport—the only international airport of Nepal will be extensively reduced.

BRI and Nepal's Trade

As China is all-equipped to extend its Qinghai-Tibet railway up to Nepal border in Kerung by 2020, it is an appropriate time to make inquiries about what Nepal has planned to send back to China, once the train reaches Kerung. Indisputably, the whistling train is expected to be laden with low-priced Chinese goods. But, sending the train empty back to China would not be a rational choice on Nepal's part. A question may arise: why the Chinese train has to go back empty? At first, the list of goods presently exported by Nepal to different parts of the world is really small in terms of quantities. Iron, steel, tea, coffee, spices, knotted carpets, foot wear, textiles, plastics, clothing, accessories, handicrafts, beverages and vegetables are some of the goods that Nepal has been exporting up to now. Secondly, whether these goods are competitive enough to meet the demands of consumers in the predominant Chinese markets? If Nepal's exportable goods are largely devoid of competitive eminence in core Chinese markets, then will the aforementioned goods be traded in Tibetan Autonomous Region (TAR) of China alone? Even historically, Nepal's trade was limited to Tibet. But, whatsoever the nature of bilateral trade, it principally relies on the inter-relationship between demand and supply. Without understanding the core demands of TAR, dispatching goods indiscriminately from Nepal would not be beneficial. Categorization and compartmentalization of goods is essential to distinguish the values and effects of agricultural and industrial goods from Nepal into the Chinese markets. Albeit green vegetables are considerably of great demands in Tibet, cost-benefit analyses ought to be done in terms of the production of these goods, and transportation cost to export them. Exporting goods, which are already available in a low price in Tibet, just yields detrimental impacts on our exports.²⁸

China is even eager to extend the railways up to Indian borders from Nepal. Although India is reluctant of China-India-Nepal corridor, Chinese academics have already started touting China-India-Nepal as an economic corridor under the OBOR project. Although India is loath to join BRI, she is already one of the founding members of China-sponsored Asian Infrastructure Investment Bank (AIIB). While India believes that China-India-Nepal corridor is not in her interest, China is encouraged by it, which was first proposed by Nepal in 2013. Even at the local trading points, India tries to combat any kind of tendencies that give the message of China-India-Nepal corridor. Although Nepal is considered as the third largest ginger producer at the global level after China and India respectively, India prohibited the import of gingers from Nepal in the September of 2016, citing the reason that Chinese gingers were being exported to India in the name of Nepali merchandise.²⁹

Extension of Qinghai-Tibet railway to Nepal border by 2020 will be the first endeavor to join Nepal and China with railways. Indeed, on May 12 of 2016, China opened its first rail-and-road service from Lanzhou of Gansu Province in Northwest China to Nepal with an international freight train. The 2,431 kilometers from Lanzhou to Shigatse was covered by the rail transport, while 564 kilometers from Shigatse to Kerung was a road transport. Remaining 160 kilometers from Kerung to Kathmandu was also a road transport. The goods had arrived in Kerung after a week-long journey from Lanzhou. For all of its sea freight imports, Nepal is now not only dependent on Calcutta port of India. In terms of trade and transit, Nepal today has access to Tianjin port of China, along with Calcutta and Vishakhapatnam ports of India. Tianjin Port, is 3,300 km away from the Nepalese border as against the Kolkata port, which is only 1,000 km far. Apprehending the distance from Nepal, and transportation cost it incurs, Calcutta port is considerably the best. But, we need to assess the shipment cost as well. It takes up to 35 days for the shipment of Chinese goods to Nepal via Kolkata port, while it can reach Kathmandu via Kerung in not more than 10 days. In comparison to the Calcutta port, easy accessibility and availability of all global goods at the Tianjin Port—which trades with over 600 ports in 180 countries-- is expected to bring down Nepal's shipment costs. Hence, the Chinese train is tangibly a best means of transportation to diversify Nepal's trade relations by ending its asymmetric dependence on India in terms of trade, transit and economy. Still, cautiousness is prerequisite. Firstly, international trade law does not allow Nepal to export the imported Indian manufactured goods to China in a lucrative price, or sell imported Chinese manufactured goods to Indian markets in a profitable price. Secondly, embracing all the Chinese goods imported via the train will simply surge up the cost of Nepal's imports over its exports. Precisely, we shall face the same plight of widening trade deficit that we have with India at present. Hence, what Nepal plans to send back in Chinese train is really important.³⁰

Taking India into Confidence

Generally, China's One Belt One Road (OBOR) initiative is understood as an economic roadmap for gradual integration of global trade and finance. But to the United States and her allies, OBOR is part of an expansionist drive of China disguised as an economic enterprise. But China wants the whole world to understand OBOR as an endeavor to make the world more developed, harmonious, inclusive and peaceful by connecting Asia with Europe and with Africa along the ancient silk routes. Owing to Nepal's unique geo-strategic location, OBOR offers Nepal strategic benefits besides the anticipated economic advantages. If Nepal prefers OBOR only for economic purpose, India should be convinced that it is not a strategic partnership with China

against India, but entirely an economic cooperation for Nepal's development and prosperity. But, if Nepal dares to use OBOR for strategic purpose to assert her sovereignty, neutrality and policy of non-alignment, it seeks a great deal of courage and willpower from the political leadership. Once again, the southern neighbor needs to be convinced that strategic partnership with China does not destroy Nepal's 'special' relationship with India. While being strategic, Nepal's act should not appear as bandwagoning by the buffer state. Most importantly, governments in Nepal should not be using OBOR project just to protect their regimes back home.³¹ India is Nepal's largest market in terms of both exports and imports. About 65 percent of Nepal's total export and 63 percent of total import is with India. Nepal imports more than 60 percent of its goods from India through the Birgunj border point alone, which was completely blocked during the 2015 Indian blockade. But with the signing of the Transit and Transportation agreement with China in 2016, Nepal has now access to Chinese port of Tianjin. Still, diversification of trade and economy doesn't happen overnight. It is a gradual process, which entails policy coordination, good connectivity, financial cooperation and good transport networks. Once connectivity via land is enhanced, and integrated border customs are built, OBOR is expected to bring down landlocked Nepal's shipment costs during both exports and imports.

But, for now, it is really important for Nepal to take India into confidence. Strategically, China is eager to use Nepal as a gate way for South Asia where she can sell her goods and services. But China's possible entry into South Asian markets via Nepal has displeased India, which considers South Asia as under her sphere of influence. Reviving the historic ties is probably the best way to convince India over BRI. The major cities of Nepal were prosperous during much of the Moghul era in India and Tang dynasty rule in China. The Licchavi and Malla kings in the 14th and 15th centuries encouraged cross-flow of business between the two countries. One Licchavi king, Angsuverma, even got his daughter, Bhrikuti, married off to the emperor of Tibet. This historic link can be revived through OBOR for it aims to integrate Asia, Africa and Europe through deepened diplomatic, commercial and financial cooperation, as well as improved infrastructure development for 'global connectivity'. This will benefit Nepal as well. OBOR can fill the capital gaps in five major areas of mutual interest: policy coordination, infrastructure construction, unimpeded trade, financial integration and people-to-people ties

Conclusion

Despite of the neighborly and friendly relations between Nepal and China, ample specific research has not been done to comprehend each other's strategic

and economic interests. From the time when the belt and road initiatives have been launched, most of the researchers from China have been paying heed only to the Nepalese culture, history and hotspots news in Nepal like earthquake and geopolitics. That is interesting. But the ratio of economic and trade researches on Nepal, which is the most expected by Nepal, has always been less. Now, China needs to make endeavors through BRI projects to research on the economic aspirations of Nepal. It not only helps China to enlarge the investment in transportation and building communication system in Nepal but also in building and developing the economic corridor and special zones. Economic and trade researches on Nepal through BRI also help China to identify the existing comparative advantage of Nepal like hydropower and tourism. Through economic and trade researches China could make the trading system more convenient and help Nepal to construct its industrial system and invest more to improve the agricultural products in Nepal by offering Chinese experience in agricultural science and technology. In this way, economic and trade researches in Nepal under China-led BRI could offer Nepal an advantage to convert its asymmetric dependence to systemic dependence and to the web of interdependence eventually leading to infrastructure-driven prosperity and growth-oriented development.

End Notes

¹ Chinese President Xi Jinping unveiled a two-stage plan to make China a great modern socialist country by mid-21st century, at the 19th National Congress of the Communist Party of China.

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Semester System in Nepal: Taking a Collaborative, Constructivist Approach to Teacher Training

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ABSTRACT:

In the context of social and education change in Nepal, this article describes and reflects on a unique teacher training model that evolved from a webinar discussion series into an initiative for training an increasing number of faculty members across the country. Through the discussion, it shows that for Tribhuvan University's and Nepal's effective transition into semester-based education to become successful and productive, institutions and their administrative and faculty members must put the change and improvement in teaching/learning approach at the top of their priority list. It concludes by drawing lessons from the program and making recommendations for sustainable and institutionalized initiatives toward educational change through faculty development.

KEY WORDS: semester system, teaching excellence, Tribhuvan University, social constructivist approach, design thinking, collaborative training

Introduction

The first time Nepal's oldest, largest, and still arguably the most prestigious public university (Tribhuvan University) switched from the annual system to semester system, in the 1970s, it didn't last long. Due to lack of teacher expertise, student resistance, and a general lack of interest/understanding about the attempted change, the system was reverted to annual system in 1980. In fact, when the university tried to make the shift again in 2014, which has been noted as a haphazard and unprepared enforcement (Khaniya, 2014), lacking the consent of most of the stakeholders, and insurmountable student resistance, it was decided that only the Central Campus in Kirtipur would make the change in graduate-level degree programs. In the past few years, however, the decision

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of the Executive Council to keep expanding semester system from Kirtipur to the entire Kathmandu valley and then to the whole country, also going downward to the bachelor's level, seems to be working. What has changed since the 1970s and what factors are at play since the near-failure of the change once again around 2015? In fact, what factors had been responsible for the successful shift to semester system among a few disciplines (such as medicine, engineering, agriculture, and some parts of management) since the year 2000? Most importantly, what will it take to ensure the continued success of semester system and for its expansion to all levels, faculties, institutions, and contexts across the country? How will the university achieve the goals behind making the shift, including the desire for quality education that involves more than content-focused, exam-driven, and lecture-heavy teaching and learning?

In this article, we argue that for Tribhuvan University's and Nepal's effective transition into semester-based education to become successful and productive, institutions and their administrative and faculty members must put the change and improvement in teaching/learning approach at the top of their priority list. This change means fundamentally rethinking teaching and learning, the role of curricular material (especially textbooks), the nature of student/teacher roles and relationship, and the very function and value of education in society. For instance, when teachers stop focusing on "covering" the course and limiting teaching to the contents of prescribed texts, instead trying to reshape the course and evaluating all or most of their student learning, then semester system as splitting the year into two halves becomes a minor aspect of the change. In fact, the semester system as it is implemented and is evolving in other countries around the world allows the teacher to put the students at the front and center of the educational process, thereby changing the relationships among student, teacher, and curriculum. To use a simple example, if students start coming to class having read the text/materials and ready to share their ideas/responses in small group discussions, then the teacher no longer stands in between the curriculum and student but instead facilitates learning while using curricular material as means rather means. Similarly, if students are graded by the same instructor who taught students--and possibly reshaped or created the syllabus--then faculty-student relationship must change radically as well, as well as the instructor's place in the academe. This kind of multidimensional change, we argue, can only be brought about by starting from the ground up especially by changing teaching/learning and the academic environment and culture. Thus, it is extremely important for our institutions to ramp up and make maximum efforts for teacher training and support, updating policy and programs to facilitate change in teaching/learning and changing curriculum and other processes (such as examination and evaluation, results and recruitment). All these must be done while the window of opportunity is still wide open. If

institutional mandates are not followed up with sufficient training and support, resources and engagement especially for teachers, then that window of opportunity might not remain open enough to make necessary changes beyond a few years from now.

This article uses the case of a teacher training program which was informally initiated by an grassroots group of professors and administrators in order to illustrate the importance and power of working from the bottom up for complementing the top-down enforcement to achieve the goals envisioned when switching to the semester system. After describing a webinar series that brought together about a dozen professors during the 2016-17 academic year and was officially recognized in 2018, with a new stage of expansion across the valley and the country, we will theorize a few of the features and strengths of the webinar-based initiative for teacher development in Tribhuvan University. In doing so, as facilitators and participants of the program, we will integrate a reflective account of the initiative, discussing the potentials of the program and sharing a number of recommendations for academic scholars and institutions across the country. We highlight the “social constructivist” approach that our project drew upon as a means for advancing knowledge and skills in a professional community, and we further discuss how we gradually adapted strategies from “design thinking” for developing and improving the initiative. We conclude by highlighting the need to provide the semester system in Tribhuvan University a sound backing in the form of teacher development in which professors are invested in continued change to their teaching, through self-training and reflection, sharing of expertise with fellow teachers, and support for students.

Favorable Factors

After the promulgation of the new constitution and the eventual election of national and local bodies of government, the sociopolitical environment and attitude of the general public have changed for the positive. With new demands on higher education to be more socially relevant and economically productive, and with advancement in communication technologies and networking of people in the era of globalization, the idea of adopting the internationally accepted approach of semester-based education is becoming more accepted. Collaboration between Nepali scholars abroad and at home is also taking shape, and a variety of partnerships are evidently creating mutual benefits and inspiration among both groups. It is in this context that a web-based discussion and training initiative--called “semester system webinars”--was launched under the leadership of Tribhuvan University Rector, Prof. Sudha Tripathi in the summer of 2016. The first webinar was conducted in November that year. This

online program, which is the focus of the current article, is on track toward becoming a highly systematic and broad-based teacher training initiative in Tribhuvan University. This section describes the favorable factors and effective actions undertaken by the webinar team, during and beyond the one-year long series of self-training activities and discussions.

We might add here that the new spirit behind the faculty development initiative surprised all of us. The initial group, consisting of ten to twelve professors from across the disciplines, voluntarily took up the aspiration to change its own pedagogical practice. We were even more surprised by the same interest among a much more diverse group when nearly twenty-five more professors joined the May 2018 onsite program (this time including education scholars such as Dr. Prem Phyak, who has been a pioneer in semester system pedagogy in his own department). For lack of a better term, the group has been taking an “organic” approach to discussing and developing/improving instructional methods and strategies, curriculum development and assessment, student resistance and political dynamics, and even exploring the research on challenges faced by teachers and institutions against a smooth transition into semester based higher education in Nepal. It is evident that discussions around teaching learning no longer remained the domain of education department/discipline. Part of the reason for this kind of interest in pedagogy among teachers across the disciplines may be the drastic change imposed on them by the institution, or perhaps the pressure faculty members face from students and society as well. But our observation is that the motivation in our group was also intrinsic: members wanted to learn, to improve themselves professionally, to educate their students better, to make education more socially beneficial and productive. The larger group that met for two days in Bhaktapur worked with an equally inspiring focus and level of energy in this regard. A science professor, for instance, reflected at the end of the program that he realized how little his teaching involved his “doing things for students” and how much he just made students do. His implication was that semester-based education required instructors to do many more things for students--regardless of the time it might take--helping students achieve many more types of learning goals than in the older system.

The group also had the unique advantage of being informal and yet having full support (and, indeed, direct participation as a trainee) from the academic head of Tribhuvan University, Rector Suda Tripathi. In addition, the group included the Dean of Science Faculty, Prof. Ram P. Khatiwada and a few other senior scholars, some in administrative position. Technological support, alongside a venue and breakfast, was generously provided by Kathmandu Model College (KMC), a private institution whose leader (Mr. Rameshwor Aryal) had initially

connected diaspora experts with TU officials and professors who together formed the initiative. Scholars from abroad (Dr. Uttam Gaulee and Dr. Krishna Bista, in coordination with Shyam Sharma) provided support by conducting research, finding and sharing resources, designing activities, keeping the conversation active, and documenting the project toward building a larger initiative. Instead of serving as “experts,” however, the diaspora scholars played the role of facilitators, collaborators, and (as Shyam puts it) research assistants for participants at home. Surendra Subedi, a Tribhuvan University alum and Principal of KMC, has provided communication and coordination support for organizing the original 2016-17 webinars, the on-site program, and follow-up initiatives for institutionalization. The inspiration among all groups was mutual in that local members of the group felt the pressure when their colleagues abroad worked hard, the members abroad were excited and honored by the opportunity to work with esteemed scholars at home, and sponsoring institution valued the opportunity to support a public institution. Everyone recognized the opportunity to improve their own teaching, to positively impact the education of their students, and strategize to make broader impacts by building on the achievements of the webinar program.

The approach we took for conducting the webinar sessions was another contributing factor for the success of the program. Each session was designed with two or three key “activities” in which we solved or discussed a major problem chosen by the group the previous month (to develop a teaching solution), read research or scholarship on the issue and adapted ideas/practices from it for our own context, shared best practices with one another, reported what we took into the classroom and how/whether it worked, and so on. The fact that we had a set of agenda items in the form of activities to be completed helped us to focus on practicable outcomes, individually and in small groups, and then share and discuss those outcomes as a full group. A few of the 90-minute webinar sessions went over the time, especially if the group raised broader institutional questions or challenges that we wanted to explore in more detail. Often such extended discussions prompted us to change course and add new topics or decide to further explore the one at hand. Throughout this process, we took extensive notes, created or curated relevant resources, and shared our own progress in terms of improving our teaching and helping our institutions make the change as well. The project, in fact, had a very strong component of action research in that we deliberately went through the process of planning, action, observation, and reflection (See Noffke & Somekh, 2009; Pine, 2008; Sherman & Torbert, 2000).

The project’s effectiveness also came from the group’s keen awareness that significant change was needed in teaching/learning culture in order to

meaningfully implement the semester system. We knew that the system would not change without teacher development putting the pressure on it. As Elliott (2001) notes,

When teachers engage in collaborative reflection on the basis of common concerns and involve their [peers] in the process, they develop the courage to critique the curriculum structures which shape their practices, and the power to negotiate change within the system which maintains them. (p. 56)

We not only dedicated some time to generate ideas about how to engage institutional leaders at all levels, we also gradually reached out to them and sought their support toward institutionalization, as we further describe below. When the project's first phase of completing ten webinars was complete, there was some delay in implementing our idea of organizing a teachers' retreat by including a number of other interested instructors (including academic leaders). In the meantime, however, we reached out to an increasing number of academic leaders, invited interested scholars to join the onsite retreat (which eventually took place on May 17 and 18, 2018 in Bhaktapur), and strategized how to take the program beyond the webinar and onsite meeting as well. In this process, we were able to invite an American professor (Dr. Gene Hammond of the State University of New York at Stony Brook) to the retreat, using that opportunity to establish institutional connection between Tribhuvan University and Stony Brook University (which is one of the largest institution in the State University of New York system). The Vice Chancellor (Prof. Tirthraj Khaniya) personally received Prof. Hammond along with Dr. Shyam Sharma, then attending the two-day retreat where Prof. Khaniya substantively contributed to the discussions. In this regard, Prof. Tripathi's role as patron and leader of the project was also instrumental. She was not only actively involved in the planning and execution of the retreat and the initiatives before and after this milestone, she also framed the discussion with a clear outline of objectives for the institution--in addition to Prof. Khaniya's discussion of how our project embodied one of his key interests, namely excellence in teaching through grassroots initiatives.

To put it in terms of social constructivist theory of knowledge- and skill-building, knowledge and skills are socially situated, they evolve from a community of practice, and they are dynamic and mediated by systems and people. In their book on training teachers for online education, Hewett and Ehmann (2004) discuss the importance of social constructivist approach to the design and implementation of teacher training. Social constructivist theory posits that "knowledge is understood to be dynamic, provisional, and developed and mediated socially as people operate without various 'communities' of knowledge" (p. 33). Our group did not learn from a single set

of texts or experts but instead adapted knowledge from a variety of sources--including our own varied experiences, different contexts, distinct disciplinary contexts--for the shared projects we built together. Our knowledge community, to use Hewett and Ehmann's words, "consider[ed] conversation to be an important way that [we] generate thoughts, test ideas, and determine what [we] believe to be true" (ibid.).

The webinar group evolved somewhat, with a few initial members being unable to continue and a few new colleagues taking up the space along the way. But the success of the initiative came from a number of favorable factors behind and about the project, some of which deserve further specification. First, the group worked with a strong sense of ownership and team spirit. The monthly discussions provided an opportunity for all of us to engage in conversations that were intellectually rigorous and also practically useful in our professional lives at the same time. We discussed what worked best in our classrooms, and we developed strategies in areas where we shared challenges. Webinar topics were developed on the basis of the greatest needs felt by the participants, including greatest impact we believed we could make by reading about, discussing, and developing teaching strategies.

Similarly, among the members of our team, there was an unmistakable sense of recognition about intrinsic motivation of being a member of a historic team of scholars/teachers from across the disciplines at a university we had all studied, the willingness to rise above dynamics of power and politics, the respect of hard work regardless of age or other distinctions. The senior professors and academic leaders would actively listen to the younger teachers, not only sharing their experiences but also learning from everyone. The participation and contribution of scholars from abroad also added positively to the program; the scholars abroad brought new perspectives and experiences into the conversation, helping the group to think outside the box. The scholars from abroad, a such, had the effects of catalysts, while they were inspired and enthused by the participation of fellow teachers at home, including experienced and highly respected professors and academic leaders on the ground. Some dissatisfaction did seem to emerge temporarily with regard to certain issues, such as the sponsorship of the venue and resources by a private college, but a strong, positive view of the broader goal carried the day. A "can do" attitude and pragmatic thinking prevailed among the members as the group continued with appreciation of the goodwill by the academic leaders at the private institution, where one of us belongs (as did one other participant in the group). The complementarity of local and diaspora scholars--including Dr. Uttam Gaulee and Dr. Krishna Bista, who facilitated and attended some of the webinar meetings--also stood out in the team spirit in the initiative.

We are hopeful that the next stage of the program will build on the same kind of energy and enthusiasm, camaraderie and collaboration, curiosity and generosity among the three groups that will be working during the 2018-19 session and in whatever institutional and informal forms the initiative extends into. We also hope that the stars will continue to line up as positively and that the initiative will develop new avenues in writing, research, communication skills; assessment, classroom activities, student engagement; and so on.

Strategies and Successes

We highlighted above a few favorable factors behind the effectiveness and success of the online teacher training and the broader initiative emanating from it. But that doesn't mean that the initiatives didn't need planning and design, effort and energy. Thoughtful design was critically important to this project. The group's coordinators and members discussed--often in many backchannel conversations when more time was needed--what technology to use and how, what activities and strategies worked best, how to use texts as input and where to connect them to our practice, and so on. In fact, the webinar team began by writing a "project description" document in order to identify and articulate the needs and objectives of the initiative, the logistics necessary and approach to be taken, the schedule (time, place, and mode of interaction), participation policies, incentives, and tentative list of themes and modules to be covered. This document helped the group to be on the same page and also for informing new members, institutional leaders, and anyone else with whom we wanted to share the project. It also served as a kind of "course policy" that we could follow/enforce among ourselves, such as for ensuring that participants attended at least eight of the ten webinars in order to qualify for the certificate of completion. The team also discussed the project, including how we would work together and what roles and responsibilities we would have, going on to collaboratively decide the topics and updating the list as the discussions progressed (some topics were repeated and others skipped or modified). Most significantly, the project description had clear objectives, which we developed as a group. The objectives included:

- 1) to support a small group of teacher/scholars update and improve their teaching for the new semester-based system of higher education, 2) to provide ideas, skills, and materials for these teachers as trainers so that they can help multiply the number of trained teachers for semester-based teaching, and 3) to involve educational leaders in ongoing conversations so that the training program can be institutionalized and used for making broader impact in the future. (Program Description)

We pursued the objectives cognizant of the fact that “there are different approaches to implementing and improving the semester system,” such as taking “a top-down approach by changing policy and programs” or taking “a grassroots approach and gradually improv[ing] the teaching/learning culture in order to help achieve the vision behind switching to the semester system.” But we noted that our project was primarily driven by teacher-scholars who wanted to “improve our teaching skills while sharing them with others.” We additionally envisioned “handing over the program . . . to an appropriate unit of the university, hoping that there will be an interest” in the program’s institutionalization. Indeed, such a development took place with the two-day program in May 2018 and the recognition by Vice Chancellor and official initiative taken by the Rector after that event.

As part of the program’s design, we made the issue of motivation and incentive explicit. That is, we were clear about what we wanted out of the program for ourselves, our institutions, and higher education at large. Those of us who worked abroad wanted to share our time and expertise voluntarily as a service to our alma mater, Tribhuvan University, and to Nepal’s higher education; we took the opportunity to work with dedicated educational leaders and fellow teachers at home very seriously. All of us were inspired by the potential scope and impact of what we were helping to develop. We also discussed professional incentives for participants on the ground, which took various forms: 1) certificates of completion (with imprints and approval from US universities, as well as signatures of TU officials); 2) a comfortable space and refreshment after the training sessions (sponsored for the first year by Kathmandu Model College); 3) plan to recommend remuneration for them as trainers when they start giving training to fellow teachers. We urged all scholars/teachers involved to consider benefits to their institution: What were the long term objectives toward which they wanted to use this initiative? How could we help institutionalize the initiative and use it to promote our professional and institutional image? “What is in it for me?” is not a bad question to ask, we noted. In sum, our project description made it clear that “we serve ourselves and the society well when we are clear and enthused about the professional and social value of our work.”

While being clear about our objectives, incentives, and motivations, the coordinators and facilitators gradually adopted the idea of “design thinking” as a guiding principle, using design strategies wherever feasible in the development and implementation of the program. Design-conscious programming meant that we tried to identify and address challenges and opportunities by shaping and reshaping our program thoughtfully and deliberately. As Razzouk and Shute (2012) note, “[g]enerating, synthesizing,

and evaluating a solution are frequently identified as key features of design expertise” (343). Citing other scholars, the authors add that “[d]esigners should be able to assess the conditions of a given situation and quickly adjust their actions depending on the current set of needs” (ibid.). Accordingly, the design-focused implementation of the webinar program emerged from strategy conversations among coordinators and facilitators--as well as conversation with the team about how to make the program effective--in which issues of logistics and process including technology use, topic selection, text and reading, techniques and activities, team spirit were explicitly discussed. The team discussed and practiced technologies to be used so technology didn’t pose too many obstacles and we were technically and mentally prepared to handle tech failures; technology use leveraged the outcome of learning. The first two meetings among the group best exemplify the use of action research and design thinking to guide the development and success of the program.

The first group meeting, which we later named “meeting zero” was an open discussion of the broader context where semester system had been officially implemented, a conversation that was meant to identify the most urgent changes that we needed and wanted to make in our classrooms. From a design-thinking perspective, this initial discussion involved empathizing with one another and understanding the shared challenges we had. According to the organization named d-school, which has helped to greatly advance design thinking in education,

Empathy is the centerpiece of a human-centered design process. The Empathize mode is the work you do to understand people, within the context of your design challenge. It is your effort to understand the way they do things and why, their physical and emotional needs, how they think about the world, and what is meaningful to them.

Listening, an important part of that first step of design thinking, characterized our early meetings, as did note-taking and generating of plans and strategies. We scheduled the events for convenience of the participants, deciding to meet on a certain day of the month for easily remembering it (namely first Saturday morning of each English month), at a particular time (7am Nepal time, the previous Friday evening at 8/9pm in New York). We would meet in Baghbazar, connecting group members abroad by Youtube’s Hangout videoconferencing application. We planned to conduct nine or ten meetings and conclude the first stage of the program by July 2017, as we practically did.

Similarly, we brought research and observation into the design and planning of the program. Our “research” more significantly took the form of exploration of issues and challenges through activity-based discussions. For instance, in webinar 1, we generated a list of perceived and real differences between

traditional (annual) system and semester system. This discussion and follow-up research on academic databases helped us identify priority towards improving our teaching learning culture. Reading research done on teaching/learning approaches in different cultures and countries also helped us realize that every place has its own set of challenges; we were energized to tackle challenges in our classrooms and support our institutions do so toward making the shift from annual to semester system successful. Our activities focused on questions such as: How can teachers implement student-centered learning even in large classrooms especially with students of different levels of knowledge and skills? How can we ensure that students come to class having read the materials to be discussed or covered in class? Thus, sharing of experience, gathering perspectives, research, and strategizing served as input for collective action, helping shape the course of the program itself.

The next stage in design thinking as an approach to ideation and project development involves defining the issue at hand. Especially the first few webinars, once again, embodied this kind of approach. We tried to make sense of the extensive notes we were writing up during and after our meetings and the notes we took from the research we conducted. According to d-school,

The Define mode of the design process is all about bringing clarity and focus to the design space. It is your chance . . . to define the challenge you are taking on, based on what you have learned about your user and about the context.

This involves synthesizing of information by discovering connections and patterns that will guide future action. Our observation of the extant educational setting in Nepal was that while the semester system was adopted to make more student-centered, the number of students and teaching skills among teachers had not changed or improved very much. In very large classes, many teachers were not able to integrate the teaching of academic writing and research skills, or allow students to present their ideas or collaborate with their peers. By sharing concrete teaching strategies, we helped participants enter the classroom with a different mindset, which was that small changes through practical strategies can make significant difference. The participants shared their most striking challenges and strengths, then discussed broader and institutional impediments, and concluded the first meeting with a discussion of the next webinar's theme.

We collaboratively developed new ideas. Throughout the year, robust conversations were held among institutional leaders and coordinators, as well as among facilitators and coordinators on separate days or at the end of webinar meetings. Backchannel conversations with institutional leaders and project leaders helped the coordinators design the activities for each webinar in

the form of problem-solving strategy sessions. In other words, we framed the training sessions as “how might we” and “what could be next” rather than simply absorbing new ideas shared by experts. Traditionally, experts provide orientation to less experienced professionals, often bombarding them with a lot of information but not engaging them to sharing and learning from one another. In our webinar sessions, we let the participants share their best ideas and teaching stories for engaging students, for making learning more enjoyable and motivating, more making education meaningful and relevant to students’ lives in and beyond college/university. We also included a discussion of teacher engagement, since we were a group of trainers and educational leaders--including the challenge of how to engage part-time teachers. This discussion also helped us explore how to make the initiative sustainable and institutionalized as we began to approach the conclusion of the project. We took into consideration questions about teacher resistance, misunderstanding by other stakeholders, and the challenge of changing old habits as part of developing our training program.

Our deliberate design-focused approach helped us create a model that would be useful for broader application, for adoption and adaptation by other groups, and institutionalization and sustainability. We took extensive notes from discussions before and after the training sessions. We dedicated some time at the end of each webinar meeting for discussing broader issues and reflecting on our success/efforts. We shared meeting notes with participants, along with the resources we created along the way. As such, when we completed the first year of webinars, we had essentially created a prototype of training program (to use another tenet of design thinking for describing our approach). Some aspects of our prototype, however, didn’t fit neatly into the design thinking process in that we tested new strategies (both of training ourselves and teaching students within the new academic system) as part of the development of the program/prototype. We also planned to test and assess the programs and resources we created in the first year during the second year of webinars, as well as when our colleagues would start taking the training modules beyond the Kathmandu valley in training their fellow teachers. The test element would also be put into practice as institutions adopted and tried the training modules. Given that ours was a “training of trainers” (ToT) program, we assessed the design and implementation of the training modules along the way, among ourselves. The production of experts was our objective, so the trainee-trainers’ experimentation and sharing, reflection, and assessment of their own learning was part of the program’s modus operandi. Similarly, we developed, curated, and kept improving resources such as handouts and guidelines as part of the ongoing creation, testing, and review of our program. Our approach was not linear and it was in fact messy and complex; they were not always thought

through in advance. Indeed, we started focusing on design thinking along the way, only letting the theory fully surface late in the process. We are planning to further improve our training approaches and theorize them for more effective communication with various stakeholders in the future. We are looking forward to another year of successful implementation and a productive journey where we will all learn more.

Scope and Impact

In the section above, we highlighted our ideas and strategies behind the program while using the first two webinar meetings for illustration. In this section, we describe the scope and focus of the overall program, including and beyond the webinar component, while discussing and reflecting on the rest of the webinars, onsite events, and other conversations/collaborations. In doing this, we try to highlight the value and importance of the initiatives, drawing out themes and patterns of the initiatives.

One of the significant impacts of the training, community-building, and initiatives for change in educational practice is that when participants learn and share ideas, their understanding and perspectives change in a positive direction. So, when we started developing and using new resources, practiced and implemented new teaching strategies, researched and read scholarship on the topics of our interest, we change the ways in which we viewed our challenges. Instead of seeing challenges/impossibility of using student-centered teaching in large classrooms, for instance, we shifted our focus to “how” we could engage students even in large classrooms. For the same reason, we changed the planned topic for one of the webinars from “resistance among teachers and students” to “how to motivate students and engage fellow teachers” and “constructive approach for trainers, promoters, and other scholars.” As Tobin and Tippins (1993) have noted, constructivism offers us perspectives for critical reflection and for analysis of the learning potential of people in any situation. We gradually recognized the power of our collective action, thereby focusing what we could do instead of what we couldn't.

One of the approaches for making the above shift is to help teachers develop strategies for using internal assessment marks for making students do more work, be more engaged, and so on. We used a cloud document to create effective teaching and assessment strategies where all members could contribute our ideas and experiences. We also discussed how to write and use course policies to engage students, as well as how to more generally shift the culture from exams to learning (using assessment as a tool), reward good learning and good teaching (motivation and incentives), and so on. The

teamwork inspired us to see problems as opportunities, to frame the training positively, to take inspirational approaches. This, we felt, was the effect of team building and collaboration: when teachers come together and focus on changing practice, the focus seems to naturally change from “what is wrong” to “how we can fix it.” We also used the same focus as we tried to get buy in from our institutions, administrators, and colleagues outside the program. Similarly, when we realized that there was tremendous interest among many faculty members--of all levels of experience, in all kinds of institutions, and across the country--to learn and use semester-based teaching/learning strategies, we found new energy and confidence. The critical mass in terms of number of interested teachers changed the dynamics, and we organized onsite programs and planned to take the training beyond the capital with more optimism and energy. So, the first take away from the first two years of the project was that it was necessary (and possible) to create a critical mass of interest and energy in order to put pressure toward systemic change.

Another important feature of the training program was that beyond sharing experiences and developing teaching strategies among ourselves, we used research from other countries and contexts as a source of ideas but not models for addressing our challenges in Nepal. However, the input in the form of text, often articles from academic databases not accessible to us on the internet, offered many benefits. Unlike experts, texts could be used within our own contexts and objectives, reviewed as needed, critiqued and analyzed, and shared beyond the meeting time and place. Reading the shared text before the webinar sessions was a practice that, as busy teachers, that we needed to do again; this helped us to develop strategies for encouraging students to do the same. The texts provided us new kinds of knowledge and perspectives from different societies and institutions; we put them to the best use in our own contexts. This issue about the value of input from other societies and institutions came up at the two-day workshop in Bhaktapur in May 2018. In response to one of the university officials’ critical comment about outside experts, participants highlighted that we must take critical perspectives when borrowing ideas from other countries and contexts but we must not reject knowledge and experience from other societies, especially if it is available to us in the form of researched scholarship. One participant argued that there is no need to reinvent the wheel on how to tackle a certain teaching challenge if that has been thoroughly studied and if effective strategies have been developed for doing so at other universities and professional communities. Indeed, our webinar group had found, studied, discussed, and implemented a number of strategies for integrating student-centered activities in large classrooms from research and publication done by Carnegie Mellon University in the past few decades. While the tendency to blindly turn to “foreign” experts and

knowledge for solving our local challenges can lead to counterproductive beliefs and unproductive programs, it is important to not throw the baby with the bathwater (in this case rejecting knowledge and practice that is already created by another, or broader, professional community and can be adapted by us). Our project participants were keenly aware of the tension, and we have been designing the programs by building on the resistance/tension as a productive resource.

As the webinar series advanced, we started allocating some time to discuss how to institutionalize the program, how to engage institutional leaders, and how to promote the teaching strategies we were practicing and developing in our institutions and beyond. “We need to continue this movement,” says one of our meeting notes, “asking asking our [our members] to implement discussions, training, and program-development in their respective colleges.” We also developed strategies for the onsite program during these webinars, discussing logistics, coordination, expansion of the group, and strategies for institutionalization or official recognition. While some of us emphasized the need for “top-down” change, others pushed back, highlighting the need for building a critical mass of trained teachers and trainers and showing achievement to gain trust and interest among others. Without a critical mass, just a few teachers changing their teaching method, one participant observed, could be discouraging for those change makers. That is, “we have a culture of mass education where practical change is hard to implement without making structural changes,” as the first line of thinking has it. But, as another participant countered, “There’s no question as to whether the system needs to change, but we need to train/prepare people to change the system, and we must try to change both habits of one teacher at a time and create opportunities for more and more teachers to get the training.” That is, the system needs to provide resource and space and it needs to recognize and reward those who want to help make change. But it does that best when it is also pushed by change-makers from the ground up. Indeed, this was the response and advice of the Vice Chancellor when, eventually, he was invited to speak and join informal meetings at the two-day workshop in Bhaktapur. So, the webinar group was not just meeting monthly for a series of training and discussion sessions. It was gradually developing a systematic program, with robust discussions about strategies for systemic change and cultural shifts. It started by training its own members, by identifying challenges and opportunities, by generating ideas alongside change in practice, and preparing itself to support and train others. These achievements helped the group to gain trust and inspire institutional leaders to respond and support substantively.

The webinar group also addressed deep-rooted cultural challenges. For instance, many teachers see teaching as a job rather than a profession, they focus on course coverage rather than academic and professional growth of students, and those who know about theories and practices of pedagogy seldom translate that knowledge to practice (or don't think they can actually do so). The webinar group strived to counter these tendencies by practically addressing day-to-day teaching challenges and increasing the number of trained educators across the disciplines. We envisioned expanding the program toward providing new knowledge/skills and incentive more teachers across the country and creating pockets of rich practice especially in the form of support and discussion groups. Strategy discussions for creating broader impact--which led to the development of the two-day workshop in Bhaktapur--helped the webinar group extend its mission from self-training to institutional impact and change. Especially the realization of the need for teacher trainers for campuses across the country energized us, and we were ready to take on that challenge through both continued training of more teachers and institutional support and recognition.

Toward the end of the first year's webinar series, our training also started focusing on discipline-specific challenges and needs. Management professors, for instance, spent time sharing and developing teaching strategies for using case studies to shift the focus of teaching from content to skills, from teachers to students, from test-driven to experiential learning. This shift toward discipline-specific training came along with the demand for the webinar participants to be prepared as trainers for the two-day workshop (which took some time in the planning and execution) and toward the third year's plans for sending out trainers beyond the capital. By the end of the webinar series, significant time was allocated for directly addressing issues of sustainability and continuity. Ongoing discussions, we concluded, were catalytic to sustainability; they created opportunities for team-building, sharing, exploring, and solving problems. They were informal, organic, and evolving. Gradually, the group gained respect and attention and support from higher levels; this was in contrast to the traditional approach of trying to change the culture from the top down, especially approaches that are formal and mandated, official and hierarchical, and driven by extrinsic motivation such as allowances. We wanted to instead create a rich ecology of practice (not a rigid system).

Lessons and Recommendations

So far, we have shared our experiences and reflections about an initiative taken by a small group of educators, which gradually grew larger and impactful while also becoming institutionally recognized and supported. We have

presented some theoretical perspectives, based on our group's discussion plus some readings and research we did before and as our project developed. We would like to conclude with few thoughts about what we learned and what both individual scholars and institutions could take away from the successes and challenges that were experienced by members of our project. We highlight in particular that institutional change can happen best when there is enough energy coming from the ground up, from individuals and groups of scholars and teachers who feel the urgency of change that the society and institution demand. It is by creating opportunities for training and support, by creating and finding resources, and by engaging active groups/communities of practitioners that systemic change will practically move forward; otherwise, only the structure will change with nothing happening in substance and quality. The recognition and support of institutional leaders is critical for both promoting and then institutionalizing grassroots change, but the latter must be as significant as the former for change like the one envisioned by the attempt to switch to semester system.

One of the most inspiring lessons we learned -- and a lesson we encourage readers to consider most seriously -- is the power of small, committed groups of practitioners. It is not very often that we see informal but thematically focused and regularly meeting groups of practitioners who come together to share and develop practice, to study and tackle challenges, to produce new ideas and share them. Much more of what the webinar group did needs to happen by many more groups in different forms, on site, online, within institutions and departments. Different groups will naturally pursue different goals, have different strengths, last different amounts of time, and generate different kinds of benefits. But their formation and sharing of ideas and practices, research and reading, presentation and exchange, publication and promotion can help to change the culture and environment of higher education. There is thousands of years of collective experience and very wide and deep expertise within our universities, but such experience and expertise need to be shared and publicized, questioned and improved, recorded and turned into resource for the future. Mobilizing groups and harnessing their power both informally and institutionally can take Tribhuvan University in the right direction.

Perhaps the important factors of success in our initiative was that we focused on teachers and their practice, that we came together to share and study how to tackle challenges in our day-to-day work of education. Instead of taking teaching for granted, even the most experienced members of our group were eager to learn more by reading and from other colleagues, think through and improve their own practice, and then connect particular pedagogies with

broader shifts that are happening and need to happen in our higher education. As the leaders of the university have acknowledged and emphasized in the past few years, academic excellence through focus on updated teaching was one missing component in the change pushed forward by the university and by academic units. There are a number of departments and a few colleges where our colleagues have observed significant development in this regard; institutional leaders and educators interested in teaching excellence have, however, felt that a lot more needs to happen for bringing a significant number of teachers into continued improvement in their teaching in order to make semester-based education a success.

Our webinar program and the broader initiatives of which it has now become a part was designed in such a way that our training did what it demanded; for instance, we did not have experts giving us lectures about replacing lectures with activities, but we instead did activities as colleagues who learned by sharing and studying effective pedagogy together. Of course, there were challenges that we faced, and other groups taking different kinds of initiatives will face certain obstacles. But one thing that we learned was that optimism and constructive/positive thinking can make a big difference. It was challenging to find the time, to study the materials and come ready for the discussions, to follow up on the conversation, to translate ideas into practice, and to implement many of the strategies we developed. But we were clear from the outset that we must let design evolve. Unlike the design thinking that engineers and business leaders might take, ours was shaped by social constructivism where knowledge and practice continue to evolve, they are provisional and complex, and they will be implemented differently by different individuals in their own contexts.

We also acknowledge that institutional change and change in culture of teaching/learning is not easy. But small, incremental steps must be valued and celebrated, including achievements that are made but are hard to build upon. The knowledge and practice developed will influence and shape some other practice or some other person somewhere else. Not everything needs to be systematic or visible, permanent or official. Similarly, resistance and power dynamics are a reality of life and society, and they are certainly very prominent in academe. But that should not stop inspired groups (or individuals for that matter) from doing what they can, making the changes and impact on their institution and their culture that they can. We believe that our education system has taken a positive course in response to the social change that is happening in the country, even though the lack and insufficiency of change may seem frustrating to some of us. The old system of education--getting admission, doing well in exams, and receiving certificates--could not serve the society

well because it didn't focus on the professional development of students, of teaching them general and disciplinary skills that they could take into the workforce and society beyond college/university. In fact, many students felt that the transcript became a kind of burden. The gap between the academia and industry/professions is still wide and the professions outside and academic sector blame each other for the situation. There is still too much politicization and unprofessionalism coming from many academics and pressure upon academic leaders from the political sphere. But at the same time, there is also powerful national sentiment in favor of professionalization of higher education, of transcending political partisanship, of adopting global standards, of developing our own clear vision of quality. There are increasing number of scholars with international educational backgrounds who are injecting new practices and expertise into the system, and experienced scholars are increasingly collaborating with these experts.

The semester system was enforced with little preparation and even less focus on changing teaching/learning practice. But this time, there was enough pressure from all directions for teachers, students, and academic leaders alike to respond to the gaps by changing practice from the ground up. For instance, when students demand that they be involved in the classroom, teachers have to update their classroom teaching strategies; when teachers change practice, there is pressure on the curriculum to change; and when teachers, students, and curriculum shift in the right direction, even the most resistant stakeholders must begin to respond in order to survive in the system. In fact, we sense that many stakeholders are responding proactively by enriching their practice in order to change themselves in tandem with the change in culture and system. Our generation witnessed the destruction of academic environment due to political interference and student politics driven by political parties (rather than by independent student bodies that advocate for quality education, equity and justice, and for resources and opportunities). It is likely that we will also see the reversal of the situation and change in the right direction as a result of the change envisioned by semester-based education--whether that change is incidental, deliberate, or both. In addition, advancement in information and education technologies, globalization and exchange of ideas and people across borders, and social and economic change are all creating both demands and opportunities for change for the different stakeholders. It is in this environment that we believe we were working, and we urge other educators to take the broader context of change seriously. So, a change that was "imposed" has taken place at a time when all the stars are aligned, and the single-minded desire for change that came from above should not be seen as undermining the fundamental values of semester system. Instead, we can choose to respond to it positively and constructively.

We believe that there is a unique window of opportunity for educational transformation in Nepal. Recently there has been deep realization in academe that our current teaching learning approaches do not meet the global standards. There is a demand for change, through teaching and learning, in the very idea of knowledge and learning, student and teacher relationship, role of education in society. Students no longer come to only listen to lectures; they increasingly come ready to share their reactions to what they have read, experienced, and even researched. They know that their ideas and opinions matter. So, they must be given problems to solve, topics to explore. They must be helped to develop their own academic and professional careers. Students increasingly want to search and learn new ideas as and when necessary. So, teachers must become facilitators, guides, coaches, and mentors -- not just transmitters of knowledge. Now is the time to make the semester system successful by changing teaching/learning, changing habits and expectations, creating a new environment, shifting focus of what education must do for advancement of knowledge and its application in society.

The focus on professionalization, economic development, decentralization, globalization and technological advancement, brain drain, and such broader/powerful factors have all prompted the shift that is happening in higher education. A focus on teaching/learning culture is emerging, and it is in these contexts that the webinar series created an effective but relatively small set of opportunities for teachers read about and share teaching strategies, identify and solve problems, test and reflect on changes they make in the classroom, and train themselves and others. This window of opportunity may not be open for too long: there is a need for teachers and institutional leaders alike to feel the sense of urgency and respond actively to the favorable condition at this time. As such, we urge more practitioners (as well as academic leaders and administrators) to take up the challenge, to respond to the opportunity, and develop new initiatives at different levels.

It must be noted that the program is still in an infant stage in relation to the aspiration its members have and the demand for training/support for educators in higher education institutions across the country. But we hope that this program will continue to grow and make a ripple effect on the broader system of Tribhuvan University and the higher education culture of Nepal. We are hopeful that the institution will further institutionalize the initiative and take it across the nation by helping develop and connect experts from this initiative and beyond. We are humbled and inspired by the opportunity, the success, and the potentials that we have observed in the work done by our colleagues in the group as it is quickly expanding. We are grateful to the other members of our

team, whose support and encouragement inspired us to facilitate and coordinate the programs, in collaboration with other colleagues, and whose positive spirit we have tried to capture in this article.

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Integrating Local Resources for Developing Skill-based Education in Nepal

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Abstract

Knowledge, experience and skill are claimed to be the output, the sign, and the reward of interactions of organism in environment or resources. Human activities on environment and proper utilization of local resources, of course, opens the door of practice and activities to a large extent and ultimately leads to skill-based practical education resulting high skilled manpower easily adjustable in national and international arena and it minimizes unemployment. This study attempts to establish a connection between local resources and skill-based practical education highlighting the inclusion of local potentialities in local curriculum. It emphasizes on addressing the local curriculum as a local need fundamentally in requiring geographical pocket areas regarding local potentialities and provides some rationale on the strategies for the development of contextual local curriculum for the development of skill-based education in study area and in general.

Key Words: Natural resources, local potentialities, local needs, local humanpower, resource mobilization, local curriculum, skill development

Introduction

Resources in a broad sense include everything that is derivable for the use or benefit of man from any part of the universe (Worthington, 1964, p. 2). Hussen (2000) defined a resource as anything that is directly or indirectly capable of satisfying human wants (p. 3). A resource, therefore, is inherently anthropogenic and to a greater or lesser extent represents nature appropriated by humans (Hope, 2002, p. 2). World Trade Report (2010) defines natural resources as stocks of materials that exist in the natural environment that are both scarce and economically useful in production or consumption, either in their raw state or after a minimal amount of processing (p.46). Admitting the vital role of natural resources for the development of education, World Trade Report (2014) states:

The relationship between natural resource dependence and broad measures of social development, such as education and health, is

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however a source of concern. There is a correlation between natural resource abundance and the human development index, which uses statistics on life expectancy, education and income to rank countries. The correlation is negative, meaning that growing dependence on natural resources is associated with declining levels of education. (P. 156)

Emphasizing the significant input of natural resources in an overall development of a nation, Organization for Economic Cooperation and Development i.e., OECD (2011) stresses:

Natural resources, both renewable and non-renewable, and ecosystem services are a part of the real wealth of nations. They are the natural capital out of which other forms of capital are made. They contribute towards fiscal revenue, income, and poverty reduction. Sectors related to natural resources use provide jobs and are often the basis of livelihoods in poorer communities. Owing to this fundamental importance of natural resources, they must be managed sustainably. (p. 5)

Stated in ancient philosophy Srimad Bhagavatagita (1980), Upanishads classify all the natural wealth in two categories: external wealth and internal wealth. Land, water, heat, air, and space come under external wealth. Skill, determination and intellect come under internal natural wealth (Srimad bhagvatgita, 7. 4-5).

Natural resources have been divided from two spherical aspects by Worthington (1964) as: physical and biological spheres. In the physical sphere they include energy from sunshine gravity as well as mineral deposits and the rain. In the biological sphere they include domesticated as well as wild plants and animals; and they include human resources too (p. 2).

According to Hope (2002) the environment contains humans and human behaviours of all types. He claims that the prime objective of environmental management is to create and maintain a situation in which humans become as compatible with their environment as possible. What is possible depends on the disposition of people, together with regulatory and management mechanisms established to improve the situation (p.6). This means the significant and primary factor is people in harvesting the resource from the nature. People are concentrated into population in various ways of differing size and composition referring to demographic characteristics as well as sociological and economic activities.

On the subject of the human beings, Worthington (1964) claimed clearly that they are the major phenomena in operating, mobilizing and harvesting the natural resources. This denotes that human being's interaction with the natural resources determine the existence of natural resources. The way people of the particular vicinity perceive, react and handle the available resources, the value or significance of resources is determined to them. The various aspects inherent in human beings are responsible for the identification, mobilization and development of the potential natural resources.

Statement of the Problem

Nepal is known as nature's amphitheater. It is supposed to be a storehouse of natural resources containing diversity and potentiality. It is taken as a dreamland of tourists, ecologists and researchers. Each and every corner of it is reported to be full of locally available unique resources encompassing indigenous people having a large number of indigenous knowledge technologies and skills. From the mountain range to the southern belt (Terai), there are boundless unpublished and unlisted potentialities and resources that play a vital role to lead the nation to the path of development and prosperity. The conversion of such local potentialities into experiences and skills for oproductive outcome on local manpower having local based practical skills primarily requires experience based education (Dewey, 2001, p. 214) including practical aspects based on activity, experience and work performance. But the irony is that the curriculum Nepal's education system lacks the utilization of locally available natural resources. It lacks the inclusion of locally available skills and local manpower (Dhakal & Koirala, 2006, p.461). Therefore Nepal is lacking the efficient manpower having productive skills. As a result, we are unable to identify and mobilize the nationally and internationally valuable resources or raw material available at our door-steps. Instead, we are wandering for importing the same goods and materials from other countries.

Realizing this, this paper analyzes the importance of the integration of local resources for the development of practical and skill based education through diversified local curriculum in order to develop skilled manpower in Nepal by putting emphasis on mobilization of locally available potentialities and provide some rationale on the strategies for the development of practical and skill based local curriculum in general and in specific to study area.

Objectives

- Following are the objectives of this study:
- To explore the locally available potentialities

- To explore the relation between resource and Education
- To examine the need of resource-based local curriculum for mobilizing local resources and developing skill based education

Research Questions

- This study focuses on answering the following research questions:
- Why are local resources to be connected with education?
- How are local resources with skill development connected in prevalent curriculum or education?
- What can be the ways to integrate local resources in education through local curriculum?

Research Methodology

To find out answers of the research questions, qualitative research approach has been chosen applying hermeneutic phenomenology to find out people's lived experience (Langdrige, 2007, p. 4). The aim of researcher through this phenomenology is to explore the hidden meanings of peoples' experiences, their practiced knowledge and skills by applying 'interpretive paradigm' which is viewed as a social construction having a central goal of seeking to interpret the social world (Higgs, 2001, pp.48- 49). For the purpose, field observation, PRA, and semi- structured interview (Robinson, 1991) have been applied as research tools and techniques. The participants of this study are from Dudharakshya, Sainamaina Municipality Rupandehi, one of the most fertile areas for agriculture in Nepal. The local participants include: peasants, businessman, teacher, student and local representative from ward office.

Review of Related Literature

Nepal is measured as the land of potentialities having the most wonderful topography in the world having some of the most outstanding natural bio-diversities and resources in the world ranging from south to north and the productivity of land differs to a vast variety and large extent, each and every corner of it is stated to be full of unique potentialities and productivities. Concerning the resource potentialities available in Nepal, Thapa (2006) states that "Owing to its greatly varied geographical, geo-morphological, and climatic conditions, Nepal occupies the most diverse ecosystem in the world" (Introduction section, para 1). Pandey et al. (1995), also support the aforesaid

view that Nepal features diverse physiographic and ecological characteristics (p. 1).

Nepal is believed to be a storehouse of natural diversity and resources. It is dreamland of ecologists and researchers.

Against the size of the country, Nepal possesses some of the most outstanding bio-diversities in the world ranging from the sub-equatorial rain forest in the south to the alpine deserts of the northern Tundra region. Nepal is the land of potentialities having the most wonderful topography in the world laid from the world's Deepest gorge Kali-Gandaki" to the highest point on the earth 'Sagarmatha' (Mount Everest) 8,848 meters above the sea level. Since the climate of Nepal ranges from the tropical in the low lands to the arctic at the highest altitudes, the productivity of land differs to a vast variety and large extent. It has the seven world heritage sites, two natural world heritage sites and one religious world heritage sites, it has alive and dynamic cultural heritage in the world. (Tuladhar, 1999, pp. 3-5)

As Nepal has the highest floral habitat on the earth, it possesses the highest value of medical herbs in the world (Tuladhar, 1999, p.5). As it is acknowledged as the second richest country in the water resources, it carries the unseen potentiality of hydro-electricity to enlighten the whole south Asia. The Terai belt in south is laid with fertile land, full of productivity. These are only the very few seen examples in a glance. Nepal is known as nature's amphitheater. Each and every corner of it is full of potentiality and productivity, illuminating this, Tuladhar (1999) states that from Terai's fertile land to grassland tropical forests to riversides and lakes, valleys to hills, mountains to remote forests, it is estimated to be a natural and anthropological treasure land (p. 5). Concerning the indigenous ethnic groups of Nepal, Koirala et al. (2011) have reported all together 59 groups including some of their culture specific definite indigenous potentialities regarding knowledge, skills and technologies. From the mountain range to the southern belt (Terai), there are boundless unpublished and unlisted potentialities and resources that play a vital role to lead the nation to the path of development and prosperity.

Resource, Experience and Skill Development

Resource is related to the behavioural and functional aspects of human beings. "Resource is neither a material nor a substance but a positive interaction between man and nature positive to approaching the given ends of satisfying individual wants and social objectives" (Sadhukhan, 1986 p. 94). There is always an interactive relation between locally available natural resources and people concerning the individual and social needs. In this respect Sadhukhan

(1986) further argued, “Resource itself is not anything visible but the interacting elements, i.e., man and nature are to be seen everywhere. In this connection, Zimmermann views, “Resource does not refer to a thing or a substance but to a function which a thing or substance may perform or to an operation in which it may take part” (cited. in Sadhukhan, 1986 p.94). This clarifies that resource is related to the functional or operational aspect which is carried out through the interaction of people on the things or substances resulting various experiences.

The factual meaning of resource is associated to the man’s response and interaction with the environment or nature. Human activities along with experiences turn the resource into output.

Man’s activity is the central feature of the use of natural resources available in any area and therefore he has intimate relationship with its surrounding environments for their use, production and maintenance. Once the people occupied the place, they have set the forms and process of social interaction in space, on surrounding environments, and with the cultural attitudes that effect ways of life. Hence, man has set relationship with its all types of surrounding environments, such as physical, economic social and political. This process is indispensable for the very existence of man. Man’s ultimate desire is to make comfort and happy life, and in this regard man exploits environmental resources to fulfill his needs. Thus, the use and management of natural resources is directly concerned with the practice of local inhabitants. (Pradhan & Pradhan, 2011, p. 39)

Local inhabitants and their interactive practice on the locally available resources or environment is supposed to establish a set of experience that creates a chain relation in developing socio-cultural outlook and attitude resulting habit formation and shaping the way of life. Linking the interactive interconnection between human experience and environment Dewey puts forward this argument:

Experience is the result, the sign, and the reward of that interaction of organism and environment which, when it is carried to the full, is a transformation of interaction into participation and communication. Since sense-organs with their connected motor apparatus are the means of this participation, any and every derogation of them, whether practical or theoretical, is at once effect and cause of a narrowed and dulled life-experience. (Dewey, 1980, p. 22)

The participation of man in the nature and carrying out various human activities by generating experiences make a strong correlation between natural resources and human beings resulting the empirical knowledge or subject matter.

The meanings with which activities become charged, concern nature and man. This is an obvious truism, which however gains meaning when translated into educational equivalents. So translated, it signifies that geography and history supply subject matter which gives background and outlook, intellectual perspective, to what might otherwise be narrow personal actions or mere forms of technical skill. (Dewey, 2001, p. 215)

The identification of local resources creates curiosity and motivates the people for the responses. Naturally they make various responses with the local resources in environment. They involve with the resources making observation, various trials generating various activities. This process develops a real practice and get real and self-experience. Ultimately with a natural and scientific generalization, they generate practical skills with knowledge. The practical skill with knowledge is the real education in scientific sense. This again makes people able to identify the local resources and the process gets cycled naturally. In this regard Dewey, (1997) clarified, “Again, a given experience may increase a person's automatic skill in a particular direction and yet tend to land him in a groove or rut; the effect again is to narrow the field of further experience” (p.26). Dewey’s clarification distinctively shows the interconnection between experience and skill. He remarks here that skill is the outcome of experience. Then a big query about experience may automatically emerge seeking its base or outcome.

An experience is always what it is because of a transaction taking place between an individual and what, at the time, constitutes his environment, whether the latter consists of persons with whom he is talking about some topic or event, the subject talk about being also a part of the situation. (Dewey, 1997, pp. 43-44)

The aforementioned statement about the experience focuses a vital role of environment that results experiences in a person and so far as the environment is concerned,

The environment, the world of experience, constantly grows larger and, so to speak, thicker. The educator who receives the child at the end of

this period has to find ways for doing consciously and deliberately what "nature" accomplishes in the earlier years. (Dewey, 1997, p. 74)

From the above mentioned statements, it can be argued that skill based practical education requires the involvement or active participation of a learner in an environment which obviously is equipped with geographical resources. It can easily be claimed then that the type of geographical environment determines the type of experience the learners acquires and ultimately the type of experience the learners get determines the type of skills they get.

Educational Approach to Natural Resource Mobilization

The educational approach according to Castellanet and Jordan (2004) is the approach that believes that unwise use of natural resource is the result of people's ignorance, lack of knowledge and skills regarding the functions and values of nature (p. 5). This indicates clearly that a specific education or purposeful training is a must since it plays a vital role for the proper management of natural resources. Castellanet and Jordan (2004) suggest for the same that providing knowledge and skill and informing people about the consequences of their environmental activities are certain to develop their performances in proper mobilization of natural resources (p. 4). This clearly advocates for a good training program that can promote awareness that certain resources are in fact very sensitive and limited. This realization may make people accept and even support new rules or policies of the government that will control their use of available resources in general.

Theory of Local Needs in Resource Mobilization

The theory of local needs in resource mobilization assumes that local people are supposed to have the capacity in mobilizing the locally available resources, their communities are thought to be responsible for the proper utilization of the resources. Getz et al. (1999) claim for the same, "it starts from the premise that local people have the collective capacity to manage natural resources. In community-based conservation programs local communities are responsible for managing their natural resources"(pp. 378-379). Local indigenous people possess the knowledge about the local resources. Similar remarks on indigenous people have been put forth by Weddell (2002); according to his study indigenous people from the poles to the tropics have initiated some highly effective and innovative conservation and development projects. These reflect a strong desire for self-determination as well as knowledge of local resources and an appreciation of the importance of managing them sustainably (p. 32). Ojha et al. (2008) state that there is a significant potential of analysis of knowledge systems driving such practices towards understanding how better

results can be achieved. According to them, lessons from the analysis of case studies on natural resource management in Nepal with varied levels of innovations generate useful insights into how deliberative interface of diverse knowledge systems can be strengthened to achieve effective and equitable impact (pp. 3-4).

The argument above elucidates that knowledge system and its analysis is very important in making policies and programmes on participatory natural resource management and understanding how better result can be achieved. This is mostly applicable in Nepal like in any other developing countries. The outcomes from the case studies concerning the same in Nepal show that the diverse knowledge of local people are the effective tools in making policies and programmes on the proper management and utilization of the locally available natural resources.

Likewise, Jazairy et al. (1992) state that indigenous intelligence, combined with enlightened training and other external assistance, may result in flourishing technologies which are manageable in scope do not rely unduly on imported technology (p.37). Jazairy's statement suggests for carrying out proper trainings and other external supports for making them enable to develop and cope with the technologies in their own field.

The studies discussed above suggest that indigenous people or local manpower is the fundamental aspect that plays a vital role in the mobilization of natural resources available locally. They also play a crucial role in developing technologies required in the field of resource utilization this is because they possess the unique capacity, experience and skill based on their locally acquired indigenous knowledge.

Local Needs and Resource-based Curriculum

Taba (1962) claims strongly that the investigation of local needs is the first and foremost aspect of curriculum development. The local needs according to him, contains all the potentialities inherent in local resources. Local needs are created by locally available resources and interaction of local people with the resources around them, Taba's theory designates that local development and prosperity are hidden in the local potentialities so inclusion of such potentialities in curriculum or education of the society is a fundamental need. The identification hidden potentialities underlying in locally available resources is supposed to be as important as to identify the physical needs of human body. As human skills and experiences are acquired through the interaction with the environment and as an environment comprises of various resources, the inclusion of local resources as local need in curriculum leads to

the development of experiences and skills in learners; as a result the theoretical education is converted into activity-based, practical and skill-oriented education. Moreover, such phenomenon leads to proper mobilization of local resources creating independency, economic development and prosperity in a society. Hence, the theory suggests the education system of a society or nation to address the issue of local need by making rigorous inclusion of local resources in a curriculum.

Local Curriculum and Skill-based Education

Local curriculum is formulated to address the local potentialities and their mobilization through the activity based textual organization. Savage and Evans (2015) claim that developing a Local Curriculum explores how local area and its resources/potentialities can be used as a fundamental need, stimulus and inspiration for curriculum development. It examines the ways in which the geography, history, culture, tradition, art, architecture and people within local area can enrich the learning experiences offered to students to make them more relevant and meaningful. Local curriculum by providing real life situation provides opportunities to students in getting engaged in various practical activities; such activities provide them a platform in developing practical skills leading them to be skilled manpower of their society and nation.

This shows how the diverse and rich geography, histories and cultures of Nepal can be developed through an understanding of the local area. It also reveals how engaging with the 'local potentialities' can help developing practical skills and experiences in local manpower by providing practical guidance on engaging with the local community in innovative ways. This proves that inclusion resources in local curriculum in Nepal in the context of developing local potentialities is a basic need which is supposed to lead the country on the path of development and prosperity through skill-based education.

Data Analysis and Interpretation

The collected data from the study site have been analyzed applying six stages: immersion, understanding, abstraction, synthesis and theme development, illumination and illustration of phenomenon and integration and critique. The data collected from semi-structured interview were analyzed thematically. On the basis of thematic analysis, the emerged themes are as follow:

Theme 1: Local resources are in the condition of negligence

We have a lot of natural resources like jungle, rivers, ponds, streams, grasslands, fields, arable and fertile land etc. People of this area have various

indigenous knowledge and skills but all these resources are in the condition of negligence, being destroyed, misused and degraded. (Nathu Chaudhary, a peasant: 07/10/2018).

We have fertile land, our country is agricultural country but we import a large amount of rice and other food stuffs from India. This is very bad symptom for our country. (Narayan Bhattarai, a businessman: 07/10/2018)

Theme 2: Mobilization of local resources is a very important factor for local development

We have enough potentialities of agriculture, poultry farming, fish farming, pig farming, producing off seasonal vegetables and many more... Not only these but also we can invite tourists at our house, welcome them in our village, make them participate in our cultural activities, create home stay and develop our area by making it beautiful. There is no need to go to Arabian country for making labour, we will have development and opportunities in Nepal but everything is neglected and ignored... (Tulsiram Tharu, a teacher/student: 09/10/2018)

Theme 3: One of the main causes of resource destruction is lack of awareness and education

Until and unless the people are well educated and trained this problem will never be solved. You know, people around are ignorant and unaware about the conservation and protection of natural resources, most of the youth are in gulf countries and political leaders never care for these resources. (Baburam Bhattarai, a teacher: 09/10/2018)

Theme 4: The prevalent education is not playing a remarkable role in mobilizing local resources

I have completed formal education spending many years but it did nothing for my agricultural development. I went to Lukhnow (India) and took only two months vegetable planting training. That training has been changing my life. I have developed a kind of professionalism in planting vegetable in this area. I produce a remarkable amount of it and make good earnings and making my living far better than before. (Jitendra Tharu, a peasant: 09/14/2018)

Theme 5: Skill based education or training plays a vital role mobilizing and developing local resources

For me, two months training has been proved to be much more beneficial and practical than the education that I got spending many years. This is because I got practical skills from the training that helped me in mobilizing agricultural resources professionally. (Jitendra Tharu, a peasant: 09/14/2018)

Theme 6: Local resource-based curriculum is necessary for the development of practical and skill-oriented education

Most of this area contains fertile arable plain and people are based on agriculture. But the subject-matter related to agriculture is not taught in the school here. We are still following traditional agriculture system, the production is very less. People are being distracted to agriculture. Various social evils are emerging. Fertile arable lands are being plotted in haphazard way. In my opinion, this school should give the education related to local need. Only then the education becomes practical, skill-oriented and beneficial to all of us. (Basanta Pandey, Ward Chairperson: 09/17/2018)

Conclusion

This study conducted in interpretive paradigm using thematic analysis, in order to explore and draw the hidden meanings of peoples' experiences (the essence of a phenomenon), their practiced knowledge, skills and technologies (Van Manen, 1990), was carried out applying phenomenological methodology. The tools and techniques chosen for the collection of required data are: resource mapping exercise, observation and interviews. Field notes, photographs and voice recording were also carried out as supportive tools. The collected data were analyzed applying the six stages: immersion, understanding, abstraction, synthesis and theme development, illumination and illustration of phenomena and integration and critique of findings and emerged findings were presented in six themes. Informed consent for ethical issues was maintained by protecting four constituent elements: disclosure, comprehension, competence, and voluntariness.

The researcher from PRA in found that the indigenous and local people of the selected study area possess varieties of unique knowledge, skills and technologies. As stated literature claim that proper education and training play a vital role in proper mobilization of such potentialities but no provision from government level and education sector for the proper utilization of such potentialities has been found. In order to carry out overall development of society, proper mobilization of local resources has been found as one of the major aspects but no attempt from local and government level has been found. It has clearly been observed that the abundantly available resources or potentialities are found to have been ignored and left useless due to the lack of awareness, trainings and practical skills based curriculum but no concern has found to have been paid from the education sector.

Development of local humanpower and its mobilization has been found as the most important aspect to carry out a proper development in overall fields of local level. It has been found from the observation that the resources around

has been found in the condition of negligence, misused, overtaken, destruction and in pitiable condition. Regarding the responsible causes for such condition in study area, mainly three causes has been found from the interview: lack of awareness and ignorance, lack of relevant trainings and government action. As education has been discussed in earlier chapters and taken as the basic foundation for the resource development, it should be tied up with the local resources as a local need. Resource-based local curriculum should be formulated and implemented both in formal and informal modes of education in the study area for the permanent and sustainable solution of this problem. Formulation and implementation of local resource-based curriculum is the ultimate conclusion of this study in order to lead the proper mobilization of local potentialities along with the overall development and prosperity of nation through skill-based education.

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Semester System in Nepal: A Step Toward Learning Revolution

*Uttam Gaulee**

Higher education is expected to play a transformational role in addressing Nepal's various developmental challenges, and in realizing Nepal's development goals. During my Nepal visit in April 2016, I got an opportunity to speak with multiple stakeholders of higher education, the students, the faculty members, and top administrators from multiple universities. The semester system was being introduced in Tribhuvan University and hence that certainly was the talk of the town in Kathmandu. In a focus group discussion with a dozens of TU graduate students, who were experiencing the semester for the first time, I heard mixed reactions. Out of the 12 students who spoke with to?? me, seven were clearly enjoying the regular classes (thanks to the new introduced semester system!) while five were not so happy about it. "It is not easy for everyone to come to university regularly" was one representative alibi. Reactions were more complex among the faculty members who felt that the decision was imposed abruptly without giving them enough time and training for them to get mentally prepared for the new structure. Top administrators were optimistic about it while clearly experiencing the resistance. Prof. Tirth Raj Khaniya, the vice-chancellor of Tribhuvan University, whom I met in the rear part of the central office, the face of which was destroyed by the devastating earthquakes that hit Kathmandu the previous year, surprised me by saying that he was committed to making the semester system successful as a vehicle of learning effectiveness.

A long list of goals awaited TU. Among other things, the TU leadership wanted to reinstate the buildings, connect all campuses via internet, start a center for excellence in teaching and learning, and open student service centers. Moreover, he wanted to successfully carry out the student union elections before fully implementing the semester system. His plan was pretty comprehensive and I became curious to learn more about it. Since office was too busy, he invited me to his residence the next morning, where I could learn more about his vision. I found that he wanted to overhaul the architecture of education to place learning first and to embarking on the path of creating ever more powerful learning experiences and environments. He clearly placed a

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priority on learning, and hence he was ready to design many variations in terms of structures to accommodate student needs. The introduction of the semester system was at high priority then, even he was receiving mixed messages from stakeholders including the student and faculty who were obviously pickled in the old culture of paltry meetings followed by annual high stake exams.

I was particularly interested in the semester system and how it was going to be implemented. While there was an urgency to change the old system of higher education, there were many challenges that the change and the situation entailed. In the same way as the annual examination system was being ineffective; the challenge in front of TU leadership was to obtain the buy-in from stakeholders to carry out the vision. While some resistance was probably expected, it was a welcome signal that TU's leadership had realized the old British annual system was not effective anymore. How would the top down approach work in the midst of the uncertainty among all stakeholders about the newly proposed structure of semester system? Does the leadership have total control to maneuver this change viz a viz the deep political divisions within the institution? I had sensed that making learning the central purpose and institution's first priority made all the sense in the context of recent stories in the media that TU was not being effective in preparing its graduates for the market

Within a year, a bunch of colleagues from Kathmandu a guiding coalition to create tangible results? what we saw, experienced, and got involved in quickly dispelled the narrative. An initiative emerging from the grassroots found some connections across the oceans that started vigorous discussions about making the semester system meaningful in Nepal. These discussions followed by a formal series of webinars at Mid-Western University created a model which could be scaled up to make the grand vision of universities practicable. We saw that visions can be turned into reality when the enthusiasm brought by a small group of committed people meet the support and strong commitment of leadership: it's one or more people who throw themselves in the ring, who believe in one another, and who relentlessly worked toward producing results. We got an incredible opportunity to interact regularly with TU professors in sharing ideas and experiences. The discussions, led by TU Rector Prof. Sudha Tripathi, were geared toward enhancing teaching learning experience of the students. Dr. Shyam Sharma and Dr. Krishna Bista started facilitating interactive webinar series using video conferencing to discuss various issues in terms of quality instruction, and possible ways to address them in effective ways by sharing ideas and resources, and engaging in productive activities. Excited by the enthusiasm shown by the colleagues in Kathmandu, including TU Rector and Prof. Sudha Tripathi, we continued this initiative which

eventually led to TU leadership's reaching out to the Society of Transnational Academic Researchers (STAR) to bring about learning revolution, which clearly showed institutional commitment towards the students.

Semester System

The older annual system entailed a summative assessment of students at the end of the year, rendering too many students to fail. According to the report of University Grants Commission, only about 26.6% students graduated (UGC, 2016). One of the major forms of summative assessment is external examinations. Khaniya (1990) described examinations as instruments for educational change. By investigating the washback effect of the Nepalese English exams, he concluded that the annual examination was exerting a negative washback effect in teaching and learning. Exploring the merits and demerits of external examinations, Shirazi (2004) argued, lack of direct and personal contact of examiners with students caused students to concentrate too much on securing marks while often obfuscating the major goal of the education endeavor - that of learning.

K. Patricia Cross, one of the pioneers who revolutionized the practice of teaching and learning in the United States observed that we need to break free from traditional structures to create new learning environments. "After some two decades of trying to find answers to the question of how to provide education for all the people, I have concluded that our commitment to the lock-step, time-defined structures of education stands in the way of lasting progress" (Cross, 1984, p. 181).

Major essence of semester system is towards the learning revolution. Assessment wise, it is a move toward a formative, continuous and internal type of assessment that promotes teaching-learning process (Ayubuzder, 2013). Through this assessment method students frequently retain a relationship with their teachers and consequently learn and try to improve in the light of teacher's comments and feedback. This association plays vital role in enhancement of teaching as well as students' acquisition and is called 'the blood of teaching'. Internal assessment also has some benefits and drawbacks. According to Shirazi (2004) and Satija (1999) internal examination system is direct, flexible and economical in terms of time and money. Results in the systems can be used to improve continuing teaching-learning process. However lack of teacher's competency to construct and use internal assessment techniques can create problems.

What is learning?

Tribhuvan University leadership has placed primary focus on effective learning. To accomplish this goal, let's try to understand what learning is. According to research, learning is a process that:

1. is active - process of engaging and manipulating objects, experiences, and conversations in order to build mental models of the world (Dewey, 1938; Piaget, 1964; Vygotsky, 1986). Learners build knowledge as they explore the world around them, observe and interact with phenomena, converse and engage with others, and make connections between new ideas and prior understandings.
2. builds on prior knowledge - and involves enriching, building on, and changing existing understanding, where "one's knowledge base is a scaffold that supports the construction of all future learning" (Alexander, 1996, p. 89).
occurs in a complex social environment - and thus should not be limited to being examined or perceived as something that happens on an individual level. Instead, it is necessary to think of learning as a social activity involving people, the things they use, the words they speak, the cultural context they're in, and the actions they take (Bransford, et al., 2006; Rogoff, 1998), and that knowledge is built by members in the activity (Scardamalia & Bereiter, 2006).
3. is situated in an authentic context - provides learners with the opportunity to engage with specific ideas and concepts on a need-to-know or want-to-know basis (Greeno, 2006; Kolodner, 2006).
4. requires learners' motivation and cognitive engagement to be sustained when learning complex ideas, because considerable mental effort and persistence are necessary.

The conditions for inputs to learning are clear, but the process is incomplete without making sense of what outputs constitute learning has taken place. At the core, learning is a process that results in a change in knowledge or behavior as a result of experience. Understanding what it takes to get that knowledge in and out (or promote behavioral change of a specific kind) can help optimize learning (Berkeley Center for Teaching and Learning, 2018).

K. Patricia Cross, as a higher education researcher and practitioner, conducted extensive research on student development through teaching, learning, and assessment. Her philosophy can be captured in a simple sentence: learning is making connections. She identified four types of connections that make learning meaningful: a) neurological, b) cognitive, c) social, and d)

experiential. Hence, Cross contributed the conversation about the immense potentials that exists for our young men and women to learn from each other, understand different perspectives, and ultimately grow as innovators and problem solvers (Cross, 1999).

From teaching to learning

Now that we are eventually focusing our attention to learning rather than teaching, we may benefit by revisiting the difference between the instructional paradigm and learning paradigm in terms of the mission, the criteria for success, teaching learning structure, the learning theory, and nature of roles played by teachers and students. Based on what Barr and Tagg posited more than two decades ago, I discuss the difference between the instructional paradigm that we largely operate currently under and the learning paradigm that we are aiming to shift to. I request the reader to take a deep breath before reading the following paragraphs because these are dense and each word carries meaningful distinction and points to a direction we must be taking if we have not done so already.

Mission and Purposes

In the teaching paradigm, we aim to provide/deliver instruction to transfer knowledge from faculty to students, and we offer courses and programs to improve the quality of instruction, aiming to achieve *access* for diverse students. On the other hand, in the learning paradigm, we aim to produce learning, elicit student's discovery and construction of knowledge. For that we work towards creating powerful learning environments to improve the quality of teaming up and achieving *success* for diverse students.

Criteria for Success

In the instruction paradigm, success is measured in the inputs, resources, and quality of entering students. Success is further attributed to the curriculum development and expansion, quantity and quality of resources, enrollment, revenue-growth, or quality of faculty and instruction. On the other hand, in the learning paradigm, learning and student-success outcomes are the indicators of success. Further success criteria are based on the quality of exiting students, learning technologies development, quantity and quality of outcomes, aggregate learning growth, efficiency, quality of students, and learning.

Teaching/Learning Structures

In the instruction paradigm, teaching learning structures are automatic, often parts are shown prior to whole. Time is held constant (for example, 50- minute lectures) regardless of who learned what or how much. Different disciplines are independently taught in different departments, where covering materials is important as the completion leads to the end-of-course assessment followed by the awarding of the degree, which equals accumulated credit hours. On the other hand, in the learning paradigm, teaching learning structure is holistic, often leading to the exposure of the whole prior to parts. Learning held constant (i.e., making sure each students masters a skills) while the learning time for each student may vary. Learning environments is subject to student's need and readiness, and students are provided a variety of learning experience. Usually, multiple disciplines/departments may work together to provide specific learning results. Assessment systems are ongoing - pre/during/post assessments, leading to external evaluations and public assessment of the learning. Hence, a degree equals demonstrated knowledge and skills, not just the accumulated credit hours.

Learning Theory

In the instruction paradigm, knowledge is believed to exist "out there," which comes in chunks and bits, and is delivered by instructors and gotten by students. Learning is viewed as cumulative and linear, which fits the storehouse of knowledge metaphor. Therefore, learning is teacher centered and controlled. A "live" teacher and "live" students are required for learning. The classroom and learning are viewed as competitive and individualistic. Talent and ability are considered to be rare. On the other hand, in the learning paradigm, knowledge is believe to exist in each person's mind and is shaped by individual experience. Knowledge is constructed and created as learning is a nesting and interacting of frameworks, which fits learning how to ride a bicycle metaphor. Learning is student centered controlled. "Active" learner is required, but not the "live" student since learning environments and learning are cooperative, collaborative, and supportive. Talent and ability are considered to be abundant.

Nature of Roles

In the instruction paradigm, faculty's major role is to deliver talks aiming to transfer knowledge. Interaction is discourages as faculty and students often act independently and in isolation. Teachers classify and sort students, and staff serve/support faculty and the process of instruction. Pedagogical skills are not

considered to be necessary on the part of faculty due to the assumption that any expert on a subject can teach. On the other hand, in the learning paradigm, faculty is primarily designer of learning methods and environments, whereby faculty and students work in teams with each other and other staff. Teachers develop every student's competencies and talents. Staff also are educators who work toward producing student learning outcomes and student success. Empowering learning is considered challenging and complex, hence a subject expert needs additional training on specific teaching and learning processes, e.g. pedagogy, andragogy, and heutagogy.

Looking forward

In the US, there is a saying, put your money where your mouth is. In Nepali universities, teachers are given money to grade student papers but not for providing feedback. Providing incentives for students to write and for teachers to provide feedback more frequently would begin a process toward learning (Galee, 2018). As we design the future, we need to follow the philosophy that the most powerful learning environments are those that enable the learner to engage in guided practice and reflection in the context of authentic activities (Schoop, 2007, 185). While in a conventional classroom there are only two roles, teacher and student, a studio imagines many roles from the painter or sculptor of the artist's studio, to the engineer, writer, producer, actor, and director of a television studio (Schoop, 2007, p. 184). Noam (1995) argued that the growth of electronic media and communication has provided new tools for academics, but also poses several fundamental challenges to the future of universities as centers of research and higher education. One result of the rapid increase in the production and dissemination of information is that the advantage of physical proximity of researchers in universities is diminished. The strength of the university of the future may lie less in pure centers of information and more in college as a community (Noam 1995). Current leadership of Tribhuvan University seems to be committed to bringing about the learning revolution, which is reflected in the strategic planning draft of the Vision 2030.

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