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Research Articles

Reflection Papers

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Homeostatic Model and Job-Organization Related Factors as Predictors of Subjective Wellbeing of Mizan-Tepi University Teachers

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Abstract: The aim of this study was to examine factors that affect the subjective wellbeing (SWB) of university teachers, at Mizan – Tepi University (MTU), Ethiopia. Accordingly, the study employed the homeostasis theory of SWB as a theoretical framework and tested two major hypotheses. First, it was hypothesized that the homeostatic model of SWB (extraversion, emotional stability, experiential input, perceived control, self-esteem and optimism) would significantly predict the SWB of teachers. The second hypothesis was that Job- and organization-related factors (job satisfaction and organizational culture), as additional aspects of experiential input, would contribute significant unique variance in SWB above homeostatic model predictors. A sample of 162 teachers participated in this study by responding to questionnaires that included measures of the abovementioned variables. Hierarchical linear regression was used to test the hypotheses. According to the results, the homeostatic model of SWB was a significant predictor of teachers' SWB. In this case, perceived control and optimism made unique contributions while extraversion, emotional stability and self-esteem did not make unique contributions but shared variance with one another. Besides, Job- and organization-related factors were found to be significant predictors of teachers' SWB. Both job satisfaction and organizational culture contributed significant unique variance above the homeostatic model predictors. Based on the results of the study, it can be concluded that job- and organization- related factors join forces with homeostatic model factors in contributing to or affecting the SWB of teachers.

Keywords: Homeostatic Model; Job Satisfaction; Organizational Culture; Subjective Wellbeing; University Teachers

INTRODUCTION

It is crystal clear that proper education is a major instrument to bring about development in a country. Understanding this, the current government of Ethiopia has been making effort to expand its education sector. Within the education sector, higher education is one of the most emphasized areas by the government, particularly in recent years. Accordingly, the number of public Universities in Ethiopia has reached 34 (MoE, 2013). In addition, some 11 new universities were about to be opened in different parts of the country, during the Second Growth and Transformation Plan period (FBC, January 13, 2015). There are also more than 60 non-governmental/ private higher education institutions in the country (Tefera, 2015). This expansion of the higher education system in Ethiopia is also accompanied by high

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demand for and employment of university teachers, making university teachers crucial parts of the higher education system of Ethiopia.

University teachers' role in producing competent graduates, research, and community service is well understood in Ethiopia. Evidence for this can be found in the National Education Policy of Ethiopia (Federal Democratic Republic of Ethiopia (FDRE), 1994); the Higher Education Proclamation (FDRE, 2003); the Growth and Transformation Plan I (FDRE, 2010); and the Growth and Transformation Plan II (FDRE, n.d.). Nevertheless, it seems that enough attention has not been given to university teachers in Ethiopia, especially in relation to their wellbeing/ subjective wellbeing (SWB). One indicator for this could be the absence of studies regarding the SWB of university teachers in the country. Therefore, given university teachers are instrumental for the development and effectiveness of higher education in Ethiopia, the present study investigated factors that affect their SWB.

THE PROBLEM

The concept of SWB should be seen and discussed as a dimension or an aspect of the broader concept of Wellbeing. Defining wellbeing has been difficult and controversial for many. This resulted from the multidimensional nature of the concept which covers physical, mental, social, material, and spiritual aspects of people's lives. Another reason could be the fact that different disciplines (such as philosophy, psychology, sociology, economics and social policy) and even different scholars within a single discipline define it differently. Nevertheless, all may agree that simply defined, wellbeing could mean 'good life' or 'quality life'. Yet, the difficult question that remains is: "what do we mean by 'good life' or 'quality life'?" In this case, wellbeing or 'good life' can be conceptualized by identifying its different dimensions. Accordingly, the concept of wellbeing could be classified into two broad categories, i.e., objective wellbeing and SWB (Camfield et al., 2008; CDC n.d.; Kobau et al., 2010; Schwannauer et al., 2013).

Objective wellbeing is about the presence of external factors (material and financial factors like housing and income) that are essential for a person's life. Indicators of objective wellbeing could involve health status, employment status, educational attainment, housing status, etc (Schwannauer et al., 2013).

SWB is regarding people's subjective perception and evaluation of their feelings (negative and positive affect) and different aspects of their lives. Indicators of SWB include feeling, experience, evaluation of life, etc (Camfield et al., 2008; Schwannauer et al., 2013). The concept of SWB is also further classified by different authors differently. Some authors (e.g., Ryff, 1989; Ryff & Singer, 2008)**,** following ancient Greece philosophers' distinct traditions, argue that SWB has two types or traditions, i.e., hedonism (including affect and life evaluation/satisfaction) and eudemonism (psychological wellbeing). Other authors classify SWB into three categories as: life evaluations/satisfaction, affect (hedonia), and eudaimonia (psychological wellbeing). In this case, some authors (Deci & Ryan, 2006; O'Donnell et al.,

2014) assert that life evaluation/ satisfaction is not a hedonic concept since it has cognitive dimensions (unlike hedonia which is primarily emotional in nature).

The hedonism tradition (associated with the work of Aristippus of Cyrene) perceives wellbeing as happiness or pleasure. Here, wellbeing or happiness is considered to be an end rather than a process. In this case, the source of happiness is not given attention (whether it is right or wrong/moral or immoral). Hedonism has influenced other philosophies and theories like the utilitarian philosophy (e.g., Bentham). The eudaimonism perspective (which is Aristotelian tradition), on the other hand, defines wellbeing in relation to virtue, meaning, goal-directedness, purpose, or self-realization. In other words, eudaimonia is about knowing oneself (one's strengths and limitations) and choosing oneself or becoming oneself, within the context of the challenges of life. Here, wellbeing or eudaimonia is considered as more of a process than an end or outcome. It is asserted that having positive affect and satisfaction with life does not guarantee psychological wellbeing, unless the source of happiness is eudaimonia. It is believed that leading eudaimonic life ultimately results in happiness. Eudaimonism is also evident in current-day theories like humanistic psychology (e.g., Maslow's concept of self-actualization) and Ryff's work of the dimensions of psychological wellbeing (Deci & Ryan, 2006; Garcia, 2006; Olsson et al., 2012; Ryff & Singer, 2008; Watermana et al., 2010).

Hedonism and eudaimonism have their foundations on different understandings of human nature. For hedonism, people are born tabula rasa and then influenced by their environment. On the contrary, for eudaimonism, people are born with contents and their job should be identifying and inculcating that content - self-realization (Deci & Ryan, 2006).

Another explanation for SWB is that of the set-point theories of wellbeing. The underlying idea of this approach is that every person has a genetic- and personality- based or determined set-point of wellbeing (happiness or life satisfaction). In this case, it is argued that negative life events (e.g., as loss of a job, serious injury) and positive life events (e.g., higher income, getting married) may decrease or increase one's level of happiness for the time being. But, the person's level of happiness will return to the initial set-point, after some time, as a result of adaption. This means, both improvements and deteriorations in our lives have short-term impact on our SWB because we adapt to changes quickly (Easterlin, 2003).

One variety in the set-point approach to SWB, which is emphasized in this study because of its comprehensiveness, is called the Homeostasis Theory. For this theory, every individual, irrespective of age, has a genetically determined level of SWB, in the positive direction. The set-point of SWB (life satisfaction as measured by Personal Wellbeing Index (PWI) is hypothesized to have an average of 75% points. Like bodily functions (e.g., body temperature) are maintained, this set-point is protected (maintained and defended) by homeostasis or stabilizing forces such as adaptation, positive affectivity, and a system of cognitive protections (optimism, perceived control and self-esteem). This theory acknowledges that significant changes of life events, that are stronger than stabilizing forces

can affect SWB (Cummins 1995, 2010, cited in Tomyn, et al., 2011; Cummins 2002, cited in Thomas n.d.; Tomyn & Cummins 2010).

In this study, efforts were made to test the homeostasis theory and its model by considering job- and organization- related factors (job satisfaction and organizational culture) as significant life events that can affect the SWB of teachers.

Job satisfaction can be understood as pleasurable or positive emotional state of employees resulting from the evaluation of their job or job experience (Lock, 1976). Job satisfaction is one of the most widely discussed topics by scholars concerned with organizational studies. This topic has been studied as cause, correlate and consequence of various work- and non-work- related variables (Bowling & Hammond, 2008). In this case, its effect on employees' wellbeing/SWB has also been noted (Dolbier et al., 2005; Lai & Cummins 2013).

A related concept to job satisfaction is organizational culture. Organizational culture can be understood as systems of value and assumptions that guide the way an organization runs its business (Schhneider & Reicher, 1983). Organizational culture is what differentiates one organization from another and what makes employees be attracted to one organization instead of another (Smith, 2003). It could also determine degree of creativity and innovation in an organization (Tesluk et al. 1997). It is believed that organizational culture influences job satisfaction, behaviors, and attitudes of employees (Hebb, 1949; Morse, 1953).

Based on the above arguments, the general objective of this study was to examine factors that affect the SWB of university teachers at MTU, Ethiopia. Accordingly, the study primarily focused on examining the homeostatic model and job- and organization- related factors as predictors of teachers' SWB. Specific research questions and hypotheses of the study are presented below:

1. What level of SWB do teachers of MTU have?
2. Does the homeostatic model of SWB predict the SWB of teachers of MTU?
3. Do job- and organization- related factors (job satisfaction and organizational culture) predict the SWB of teachers of MTU, controlling for predictors of the homeostatic model of SWB?

In line with the research questions above, the following two hypotheses are proposed

Hypothesis 1. The homeostatic model of SWB significantly predicts the SWB of teachers of MTU.

The homeostatic model of SWB (the original one) asserts that SWB of people can be predicted by the interaction of experiential input (positive or negative life experiences or major life event); personality factors (extraversion and neuroticism/emotional stability); and cognitive buffer factors (perceived control, self-esteem, and optimism) (Mellor, Cummins, Karlinski & Storer, 2003). Here, it is important to note that this model has been revised and in

this case personality factors have been replaced by HPMood (Core Affect). Explanation for not using this revised model is provided in the 'Limitation' section of this paper.

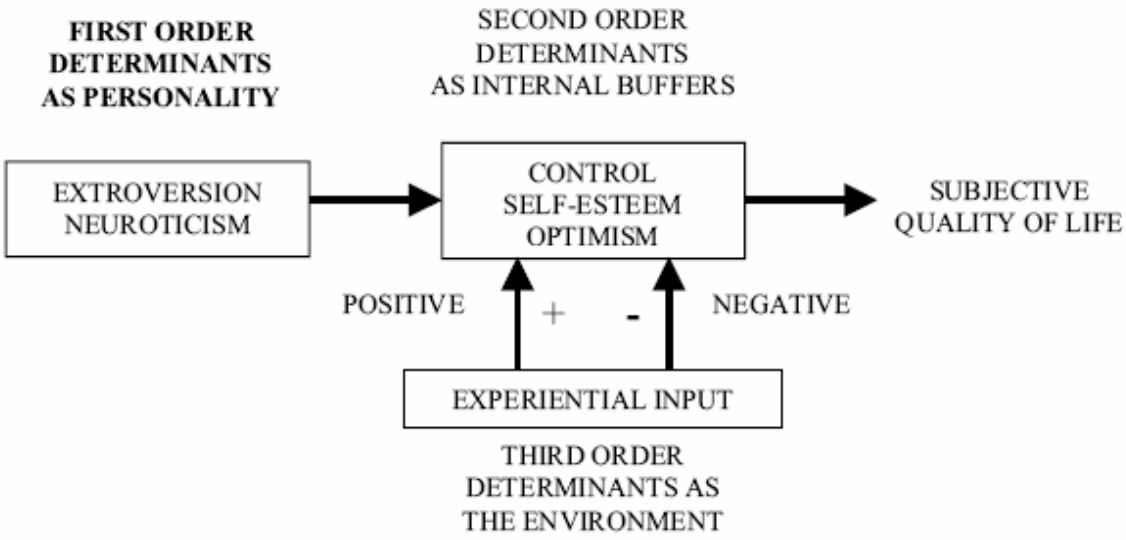

Figure 1. A model of subjective quality of life homeostasis (adopted from Mellor et al., 2003)

Hypothesis 2. Controlling for predictors of the homeostatic model of SWB, job- and organization- related factors (job satisfaction and organizational culture) significantly predict the SWB of teachers of MTU.

Job- and organization- related factors (job satisfaction and organizational culture) could be considered as additional aspects of experiential inputs (besides major life events) within the homeostatic model of SWB. And, in this study, it is hypothesized that they would add to the variance accounted for by the homeostatic model predictors of SWB.

RESEARCH METHODOLOGY

Research Design

This study used a cross-sectional survey design. Data for this study were collected from November 2015 up to February 2016.

Study Area

This study was conducted in Mizan – Tepi University. Mizan – Tepi University is one of the 34 public universities in Ethiopia. According to MTU's official website, Mizan – Tepi University was established in the year 2006 in Mizan - Aman and Tepi towns of the Southern Nations, Nationalities, and People's Region of Ethiopia. The university has two campuses, i.e., Mizan campus and Tepi campus. Each campus has different colleges and departments. The Mizan campus includes college of business and economics (CBE), college of agriculture

and natural resources (CANR), college of humanities and social sciences (CHSS), college of health science (CHS) and school of law (SL). The Tepi campus also has college of engineering and technology (CET), college of natural and computational sciences (CNCS), and school of computing and informatics (SCI) (MTU, 2016).

Currently, according to MTU's human resource office, Mizan – Tepi University had some 1065 academic staff members (personal communication (16/02/2015) and a total of 8, 802 regular students (MTU, 2016). It is also noted that some of the academic staff members of the university are pursuing their second and third degrees, being sponsored by the university. According to MTU's human resource office, there were 214 (males = 195 and females = 19) teachers on study leave (personal communication, 16/02/2015). The proportion of female teachers in the university is around 11% (MTU, 2016).

Participants of the Study

The population of this study was all Ethiopian teachers of MTU who had first degree and above educational qualification and who were teaching at the university at the time of data collection. Those who were studying their second and third degree outside of MTU were excluded from the study because the study emphasized the role of job-and organization related factors on subjective wellbeing. The total number of these teachers, according to MTU's Human Resource Office, was 617 (Personal communication, 16/02/2015).

Sample Size and Sampling Procedure

This study was mainly concerned with investigating factors that affect the SWB of University teachers using hierarchical multiple regressions. Cohen (1992), a frequently cited author in the field of power analysis, asserts that sample size for studies which test hypotheses (like multiple regressions) should be determined on the basis of power analysis. Doing so enables researchers to acquire sufficient sample size and to minimize statistical errors. He also argues that though power analysis is very crucial in statistical studies, it is "neglected" mainly because of "the inaccessibility of a meager and mathematically difficult literature" (p. 155). In order to deal with this problem, Cohen (1992) presents a handbook that has a calculated sample size table indicating sufficient sample size for different statistical tests, by specifying particular values for α (.01, .05 and .10), power (.80), and effect size (small, medium and large). Besides, in the case of multiple regressions, the number of independent variables is taken into consideration.

The sample size for this study was determined based on Cohen's (1992) advice and expectation of some dropout/attrition rate. Hence, the following specifications were made in this study. The sufficient/minimum sample size required for this study was known by specifying a two-tailed test with the conventional α (.05), power (.80), effect size for multiple regression (medium, .15), and number of independent variables (8). Accordingly, the minimum sample size required for the study was 107. In the case of attrition rate, since no

previous study was available, the researcher subjectively expected a 50% attrition rate. Hence, the final sample size for this study was determined by computing the expected attrition rate (.5) with that of the minimum sample size determined by the power analysis (107), using the following formula: 107/ (1 - .50) = 214. This means, if 50% of the final sample size (214) dropped out or failed to give adequate data for the study, 107 participants would remain in the study providing sufficient amount of data.

Study participants were selected using proportionate stratified sampling technique from eight colleges in the University. The researcher assumed that these colleges could have unique characteristics as they were found in different campuses located in different towns. Accordingly, the eight colleges/schools were considered as strata from which respondents were selected randomly. Out of the planned 214 participants, data is obtained from 162 of them. This represented 75.7% return rate.

Among the 162 respondents, while 146 (90.1%) were males, the rest 16 (9.9%) were females. In terms of academic rank, 35 (21.9%) were Graduate Assistants & Assistant Lecturers, 122 (76.3%) were lecturers, and 3 (1.9%) were Assistant Professors. Two participants did not report their rank. The age range of the participants was between 21 and 48 years with mean age of 28.24. In terms of years of teaching experience the range is between one month and nine years with mean of 3.79 years. Regarding the participants marital status, 54 (34%) are married, 104 (65.4%) are single, 1 (0.6%) is separated and the remaining 3 (1.8%) did not report.

Data Collection Tools

The main source of data for this study was primary data. Accordingly, Self-administered questionnaire was used as a tool of data collection. This questionnaire had both close- and open-ended forms. It included, among others, questions on background information of respondents and measures of SWB, personality, internal buffers, major life events, job satisfaction, and organizational culture. The questionnaire was prepared and administered in the English language. Before the main study was conducted, the questionnaire and the measures in it were Pilot tested on 54 teachers found in other colleges outside of MTU (Aman Health Science College and Mizan Agriculture College). Overall, the questionnaire and the measures were found to be good. In addition, based on the pilot test, improvements were also made on the questionnaire.

Variables and Measurement

The major focus of this study was examining factors that affect the SWB of university teachers. In this case, there were one dependent variable and eight independent variables.

Dependent Variable: SWB of Teachers

SWB could be defined as "a normally positive state of mind that involves the whole life experience" (Tomyn et al., 2011a, para. 2). In this study, teachers' SWB was measured using a scale called the Personal Well-being Index-Adult (PWI-A) originated in Australia. The scale has eight items of satisfaction or domains of quality of life that include standard of living, health, achieving in life, relationships, safety, community-connectedness, future security and spirituality. The eight domains are thought to be theoretically embedded, as representing the first level deconstruction of the global question: 'How satisfied are you with your life as a whole?' (International Wellbeing Group (IWbG), 2013).

The PWI-A asks respondents how satisfied they are with the different domains of their quality of life on an 11- point satisfaction scale ranging from "no satisfaction at all" (0) to "completely satisfied" (10). The PWI-A can be scored and analyzed by summing and averaging the scores of all the eight domains to get a score of SWB or PWI-A. (All the other scales in this study were scored and analyzed the same way). In this case, some standardization of the scores should be performed by converting the scores that ranged from 0-10 into scores that range from 0-100. This can be done easily by bringing the decimal point to the right. For example, a score of 6 is converted into 60 points and a mean score of 6.95 is changed into 69.5 points (IWbG, 2013). This kind of standardization was also used for all of the independent variables discussed in the subsequent sub-sections so that direct comparisons can be made.

The scale has demonstrated good psychometric properties. The reliability record of the scale was good. According to Lau and Cummins (2005) cited in IWbG (2013), a Cronbach's alpha of 0.70 – 0.85 was found in Australia and other countries. In addition, a moderate inter-domain correlation (0.30 - 0.55) as well as item-total correlation (0.50) were found. Test-retest reliability (1-2 week interval) was also found to be satisfactory (0.84 intra-class correlation coefficient). In this study a Cronbach's alpha of .85 was found for this scale.

Regarding construct validity, 40 – 60% of the variance in 'Satisfaction with Life as a Whole' was explained by the combination of both unique and shared variance of the domains. Besides, the domains were found to have formed a single stable factor consistently, accounting for about 50% of the variance, in Australia and other countries (IWbG, 2013). This was also confirmed in this study.
When it comes to convergent validity, this scale was found to have a strong correlation with satisfaction with life scale. In this case, a correlation of 0.78 was found (Thomas, 2005, cited in IWbG, 2013).

Homeostatic Model Predictors

Personality. Personality could be defined as stable patterns of thoughts, attitudes and behavior that, with the exception of minor changes over time, are relatively stable throughout

adulthood (Costa & McCrae, 1992). This study focused on two personality dimensions, i.e., extraversion and neuroticism (emotional stability), as prescribed in the homeostatic model of SWB. Each dimension was measured using a positively-worded single item from the Ten Item Personality Inventory (Gosling, Rentfrow and Swann, 2003) which was designed to measure the Big Five personality dimensions. In the case of extraversion, the item used was "I see myself as extraverted and enthusiastic." And, for emotional stability, the item selected was: "I see myself as calm and emotionally stable." This measure was adapted to an 11 point end-defined scale ranging from "strongly disagree" (0) to "strongly agree" (10).

Cognitive Buffers. There are three cognitive/internal buffer factors according to the Homeostatic Model of SWB, i.e., perceived control, self-esteem and optimism. All these variables were measured on separate scales with an 11 point end-defined scale ranging from 'Disagree Completely' (0) to 'Agree Completely' (10).

Perceived control. Control could be conceptually understood as an individual's overall belief that he/she can influence important outcomes in his/her life (Wallston, 2005). Control was measured in this study by using the Perceived Control Scale (Chambers et al., 2003). The scale has three dimensions, i.e., primary, secondary and relinquished control, each dimension having three items. For the purpose of this study, only items of primary and secondary control were used. According to Davern (2005) cited in O'Connor (2005) and O'Connor (2005) it is advisable to omit the relinquished control subscale as it did not load onto the perceived control factor. Participants were told to rate how much they agree or disagree with statements about their way of coping when something bad happens to them. For instance, the item "I ask others for help or advice" indicates primary control, while the item "I remember that the situation will improve if I am patient" shows secondary control. In this study, all the six items were used together to form the perceived control scale and a Cronbach's alpha of .77 was found.

Self-esteem. Self-esteem can be conceptually defined as a favorable or unfavorable attitude toward the self (Rosenberg, 1965, 1989). Self-esteem was measured using the Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1979). Though the scale has ten items, only five of the positively-worded items were used in this study. Previous studies based on five-point scales demonstrated reliabilities that ranged from .72 to .90 for adult samples (Gary-Little, Williams & Hancock, 1997; Robins, Henden & Trzesniewski, 2001). In this study the scale was adopted to an 11- point end-defined scale. Participants were asked to rate how much they agree or disagree with statements such as "I take a positive attitude toward myself". This study also found a Cronbach's alpha of .79 for the scale.

Optimism. Optimism could be conceptualized as an individual's expectation that the future will be advantageous or beneficial, and a belief that contingencies in life can be successfully dealt with (Peterson, 2000). Optimism was measured using the Life Orientation Test-Revised (LOT-R). Three positively-worded items from the LOT-R scale (Scheier, Carver, & Bridges, 1994) were used in this study. Example of items include: "In uncertain times I usually expect

the best". In this case, participants rated their level of agreement or disagreement on an 11-point end defined scale. A Cronbach's alpha of .68 was found in this study for the scale.

Experiential input* Life event *(LE). *Experiential input* life event *(LE)* was measured in this study by using the item: "Has anything happened to you recently causing you to feel happier or sadder than normal?" This item was rated using an 11 point end-defined scale ranging from 'Yes Happier' (0) to 'Yes, Sadder' (10). Reverse scoring was done in this case.

Job-and Organization- Related Factors

Job satisfaction. Job satisfaction could be defined as employees' pleasurable or positive emotional state resulting from the evaluation of their job or job experience (Lock, 1976). Job satisfaction in this study was measured using the three-item Job Satisfaction Subscale (JSS) of the Michigan Organizational Assessment Questionnaire (MOAQ) (Cammann, Fichman, Jenkins, & Klesh, 1983). Though the original version of the MOAQ-JSS used a 7-point agree–disagree scale, for the purpose of this study, an 11 point end-defined scale ranging from "Disagree Completely" (0) to "Agree Completely" (10) was used. An example of the items include: ''In general, I don't like my job". This item was the only reverse-scored item of the scale. In this study, a Cronbach's alpha of .66 was found for the scale.

Organizational Culture. Organizational culture could be defined as systems of value and assumptions that guide the way an organization runs its business (Schhneider & Reicher, 1983). Organizational culture was measured in this study using 21 items that have been adapted from Yang (2003) by Sabri, Ilyas and Amjad (2011), in Pakistan. In this case, organizational culture has two components i.e. organizational culture related to managers and leaders (OCM), with 16 items and organizational culture related to employees (OCE), with five items. An example of OCM items is: "My organization supports employees who take calculated risks." An example of OCE is: "In my organization, people give open and honest feedback to each other". For the purpose of this study, all the 21 items were used to get the organizational culture score. In addition, this scale was adapted to an 11-point end-defined scale ranging from "Disagree Completely" (0) to "Agree Completely". A Cronbach's alpha of .96 was found for the scale in this study.

Data Analysis

After the data were collected through questionnaires, data cleaning and management was carried out. Every questionnaire was checked for problems such as inappropriate responses, response sets and no response. Such problems were found in some of the questionnaires and treated as missing values. The next step was data entry into SPSS Version 20 and checking that the data were properly entered. In this case, descriptive statistics were used to see the plausibility of means, standard deviations and ranges of values.

Then, the data were checked using SPSS for meeting/violating fundamental assumptions relevant for regression analysis including miss-specification, normality, outliers, multicollinearity, independent errors, homoscedasticity, and linearity. Other assumptions such as random samples and interval/ratio level of variables were also met. One of the eight independent variables, i.e., major life event/ experiential input (single item), was excluded from the model after preliminary analysis showed that its T-statistic was not significant at the 10% level. This might be attributed to error in measurement (Gupta, 1999). The researcher is convinced that the way the variable was rated confused many of the respondents.

After checking the assumptions, descriptive statistics were used to summarize the samples characteristics and results on different variables. Then, estimation of teachers' level of SWB was done. Both point and interval estimations were done at 95% confidence level. In this case, all the eight domains of SWB as measured by the PWI-A were included. Finally, hierarchical linear regressions were carried out to examine the contribution of different factors (successive regression models) in predicting the SWB of teachers at MTU.

Ethical Considerations

In this research, the researcher made sure that the ethics of professional research was maintained. In this case, the following essential ethical considerations were emphasized: informed consent and permission, anonymity of participants, confidentiality of information given by participants, and avoidance of possible harm to participants as a result of participating in the study. Permission and consent to carry out this research was sought at different levels. Firstly, MTU's Research and Community Development Support Directorate gave its permission to conduct the study after reviewing the proposal of the study. Secondly, each respondent of the study gave his/her informed consent during data collection.

RESULTS

Teachers' Level of SWB

In this section, results of the study concerned with determining the SWB level of teachers at MTU are presented. In this case, both mean point and interval estimations were done at 95% confidence level for the variable SWB (as measured by PWI-A) and its eight domains, i.e., satisfaction with standard of living, satisfaction with health, satisfaction with achievement in life, satisfaction with personal relationship, satisfaction with safety feeling, satisfaction with community connectedness, satisfaction with future security, and satisfaction with spirituality/religion. In addition, some normative ranges of the PWI-A that are calculated from survey mean scores (30 surveys conducted between April 2001 and August 2013) (Australian Center on Quality of Life, 2016) are provided here for the purpose of comparison.

Table 1

Point and Interval Estimation of Teachers' Level of SWB (Mean Points of PWI-A) (N=146)

Variable/Domain	M	SD	95% Confidence Interval for Mean		Normative Ranges (M)
			Lower Bound	Upper Bound	
PWI-A (SWB)	61.66	18.80	58.57	64.74	75.27
Standard of living	45.68	26.02	41.43	49.94	77.84
Health	74.93	29.83	70.05	79.81	74.58
Achieving in life	54.86	26.58	50.51	59.21	73.58
Personal relationships	72.19	26.41	67.87	76.51	79.46
Safety	58.08	28.29	53.45	62.71	79.06
Community connectedness	55.61	29.92	50.72	60.51	71.04
Future security	49.66	28.85	44.94	54.38	71.07
Spirituality/religion	78.84	25.26	74.70	82.97	73.82

As indicated in Table 1, teachers of MTU had a low level (mean points) of SWB as measured by the PWI-A, i.e., 61.66 (95% CI: 58.57 to 64.74). In addition, their mean points on most of the different domains (five of the eight) of the scale were very low. These domains include: standard of living = 45.68 (95% CI: 41.43 to 49.94); future security = 49.66 (95% CI: 44.94 to 54.38); achieving in life = 54.86 (95% CI: 50.51 to 59.21); community connectedness = 55.61(95% CI: 50.72 to 60.51); and safety = 58.08 (95% CI: 53.45 to 62.71).

Yet, high mean points were also observed on the following three other domains: spirituality/religion =78.84 (95% CI: 74.70 to 82.97); health = 74.93 (95% CI: 70.05 to 79.81); and personal relationships = 72.19 (95% CI: 67.87 to 76.51). Here it is important to note that teachers' mean point on spirituality/religiosity is the highest and even greater than the normative range. Besides, their score on health is comparable with that of the normative range while their scores on the rest of the domains are lower than the corresponding normative ranges.

Predictors of Teachers' SWB: Homeostatic Model Factors and Job- and Organization-Related Factors

This study had two major hypotheses. The first was concerning the role of homeostatic model of SWB as a predictor of SWB of teachers at MTU. And, the second was about the role of job- and organization- related factors in predicting the SWB of teachers at MTU.

The homeostatic model of SWB has five predictor variables which include: major/recent life event; extraversion; neuroticism/emotional stability; perceived control; self-esteem; and optimism (Mellor, Cummins, Karlinski & Storer, 2003). In this study, as discussed earlier, there was no significant correlation between the dependent variable (SWB) and one of the independent variables, i.e., major/recent life event ($p = .858$). Therefore, this variable was removed from further analysis.

Job- and organization- related factors also include two variables, i.e., job satisfaction and organizational culture. Descriptive statistics, bivariate correlation, and hierarchical regressions results are provided in this section.

Table 2

Intercorrelations, Means, and Standard Deviations among Variables in the Study

	SWB	Ex	ES	SE	Op	PC	JS	OC
SWB	1.00							
Ex	.194*	1.00						
ES	.287***	.290***	1.00					
SE	.429***	.314***	.456***	1.00				
Op	.426***	.250**	.221**	.533***	1.00			
PC	.464***	.107	.228**	.506***	.411***	1.00		
JS	.494***	.106	.101	.242**	.256**	.323***	1.00	
OC	.478***	.054	.121	.122	.149	.265**	.581***	1.00
Mean	61.66	60.19	65.66	82.05	77.13	73.90	59.37	40.59
SD	18.80	26.54	28.02	15.62	19.14	16.64	24.79	20.24

*p<.05, **p<.01, p<.001

Ex=Extraversion, ES=Emotional Stability, SE=Self Esteem, OP=Optimism, PC=Personal Control, JS=Job satisfaction, OC=Organizational Culture

Table 2 shows means and standard deviations for each variable in the models. Accordingly, teachers' level of SWB was found to be low (M= 61.66, SD = 18.8).Teachers' scores on organizational culture (M= 40.59, SD= 20.24) and job satisfaction (M= 59.37, SD= 24.79) were also found to be low. Scores on extraversion (M= 60.19, SD = 26.54) was low, too. Scores on the rest of the homeostatic predictors were higher: emotional stability (M=65.66, SD= 28.02); perceived control (M= 73.90, SD= 16.64); optimism (M= 77.13, SD= 19.14); and self-esteem (M= 82.05, SD= 15.62).

Table 2 also presents bivariate correlations between variables of the study, with significance levels. As expected, the dependent variable, i.e., SWB (PWI-A) had significant positive correlations with all the seven independent variables. These correlations, in their order of strength, are with: job satisfaction (r= .494, P< .001); organizational culture (r= .478, P< .001); perceived control (r= .464, P< .001); Self-esteem (r= .429, P< .001); optimism (r= .426, P< .001); emotional Stability (r= .287, P< .001); and extraversion (r= .194, p< .05).

Other interesting correlations were also observed between job- and organization- related factors and some of the homeostatic predictors. In this case, job satisfaction was correlated with: organizational culture (r= .581, P< .001), perceived control (r= .323, P< .001), optimism (r= .256, p< .01), and Self-esteem (r= .242, P< .01). AS it can be seen, there was a

stronger correlation between job satisfaction and organizational culture. Organizational culture also had significant correlation with perceived control (r= .265, p<.01).

Table 3

Hierarchical Regression Analyses for Factors of Homeostatic Model and Job- and Organization- related Factors on SWB of Teachers

Variable	M	SD	N	r	B	β	s_r^2	R	R^2	ΔR^2
Model 1								.559	.313***	
Ex					.031	.044	.002			
ES					.077	.115	.01			
SE					.119	.099	.005			
Op					.213*	.216	.032			
PC					.333**	.295	.062			
Model 2								.680	.462***	.150***
Ex	60.19	26.54	142	.194*	.023	.033	.001			
ES	65.66	28.02	143	.287***	.064	.096	.007			
SE	82.05	15.62	138	.429***	.136	.113	.006			
Op	77.13	19.14	144	.426***	.171*	.174	.020			
PC	73.90	16.64	136	.464***	.199*	.176	.021			
JS	59.37	24.79	143	.494***	.152*	.200	.024			
OC	40.59	20.24	132	.478***	.243**	.262	.045			
PWI-A (SWB)	61.66	18.80	145							

Model 1: Total explained unique variance = .111 ; Total explained shared variance = .202

Model 2: Total explained unique variance = .124 ; Total explained shared variance = .338

* p< .05. ** p< .01. *** p< .001; s_r^2 = amount of unique variance contributed

Ex=Extraversion, ES=Emotional Stability, SE=Self Esteem, OP=Optimism, PC=Personal Control, JS=Job satisfaction, OC=Organizational Culture

As presented in Table 3, a hierarchical regression was carried out with SWB (PWI-SC) as a dependent variable. The homeostatic model factors of extraversion, emotional stability, self-esteem, optimism, and perceived control were entered into model one while job- and organization- related factors, i.e., job satisfaction and organizational culture, were entered into model two.

Model one demonstrated that the homeostatic model factors accounted for a significant 31.3 % of the variance in SWB (PWI-A), $F(5, 126) = 11.47$, p< .001, with optimism (β= .216) and Perceived Control (β= .295) being the strongest predictors, accounting for significant unique variability (sr^2 =.032 (3.2%) and .062 (6.2%), respectively). In this model, the total explained unique variance is 11.1 % while the total explained shared variance is 20.2 %. The variables, extraversion, emotional stability and self-esteem, did not make significant unique variance, but shared variance.

The addition of job- and organization- related factors (job satisfaction and organizational culture) in model two added significant prediction to the variance in SWB (PWI-A); an additional 15% of the variance was accounted for (R^2 change = .150), $F(2, 124) = 17.25$, $p < .001$. Here, both variables added significant unique variance (job satisfaction = 2.4% and organizational culture = 4.5%). Of the homeostatic model factors, optimism and Perceived control continued to provide unique variance (2% (with a reduction of 1.2%) and 2.1% (with a reduction of 4.1%), respectively). In model two, the total explained unique variance is 12.4% while the total explained shared variance is 33.8%.

According to these results, the four strongest and significant predictors of SWB (PWI-A) of teachers at MTU are: organizational culture (β= .262); job satisfaction (β= .200); Perceived control (β=.176); and optimism (β= .174). These results provide support for the two major hypotheses of this study.

DISCUSSION

This study examined factors that affect the SWB of teachers of MTU. In so doing, the study determined teachers' level of SWB and investigated the role of various variables (homeostatic model factors and job - and organization - related factors) in predicting the SWB of teachers.

Teachers' Level of SWB

The results of the study showed that teachers of MTU had a low level of SWB as measured by the PWI-A, i.e., 61.66 (95%CI: 58.57 to 64.74). This conclusion is reached by comparing the current result with normative data/ranges for different groups in different parts of the world. According to IWbG (2013), a group's mean scores of the PWI-A (and other parallel forms) can be interpreted and referenced by comparing it with the normal distribution of group means. In this case, the normative range of Western means is between 70-80 points and Australian mean is between 73.4 and 76.4 points. Lau (2013) also reported that the normal distribution of group means of non-Western countries, specifically, Asians (China and East Asia) has a mean of 65 points.

In addition, within the Ethiopian context, there is one study that examined adolescents' SWB in Addis Ababa. This study used the Personal Wellbeing Index – School Children (PWI-SC), one of the parallel forms of PWI-A. Results of this study showed two different scores for two different groups, i.e., adolescents who practiced taekwondo (81.95) and adolescents who did not practice taekwondo (71.64) (Tadesse, 2015). Based on such comparisons, it can be said that MTU's teachers' level of SWB was low.

Similarly, MTU's teachers' mean points on most of the different domains of the PWI-A scale were very low, when compared to the normative ranges (Australian Center on Quality of

Life, 2016): standard of living (45.68 vs 77.84); future security (49.66 vs 71.07); achieving in life (54.86 vs 73.58); community connectedness (55.61 vs 71.04); and safety (58.08 vs 79.06). Meanwhile, some high mean points of teachers were observed on three other domains: spirituality/religion (78.84 vs 73.82); health (74.93 vs 74.58); and personal relationships (72.19 vs 79.46).

From the above comparisons, two interesting but unsurprising findings can be noted. Teachers' level of satisfaction with their standard of living was the lowest while their score on spirituality/ religion was the highest (even greater than the mean of the normative range). These results could be explained by linking them to the economic and religious nature of the country where the teachers lived. Economically, according to United Nations Statistics Division (2015), Ethiopia is one of the least developed countries in the world having Gross Domestic Product (GDP) Value of $46.17 billion and a GDP per capita of $489. As a result, seeing low level of satisfaction with standard of living among teachers can be expected. In the case of religion, according to a recent study by Pew Research Center (n.d.), most of the population in Ethiopia can be described as highly religious, Christianity and Islam being the dominant religions. Therefore, it may not be surprising to observe high level of satisfaction with spirituality/ religion among teachers of MTU.

Predictors of Teachers' SWB: Homeostatic Model Factors and Job- and Organization-Related Factors

This study tested two major hypotheses using the homeostatic model of SWB as a theoretical framework/model. The first hypothesis was that the homeostatic model of SWB significantly predicts the SWB of teachers of MTU. According to this model, SWB of people is determined by the interplay among personality factors (extraversion and neuroticism/emotional stability); cognitive buffer factors (perceived control, self-esteem, and optimism); and experiential inputs (major life event) (Mellor, Cummins, Karlinski & Storer, 2003). The second hypothesis is that job- and organization- related factors (job satisfaction and organizational culture) add significant prediction to the SWB of teachers of MTU, above and beyond the homeostatic model factors. Here, job - and organization - related factors (job satisfaction and organizational culture), are integrated into the homeostatic model of SWB, as additional aspects of experiential inputs (besides major life events). In this case, according to Cummins, Gullone and Lau (2002), the cognitive buffers are supposed to mediate the relationships between personality factors and SWB, as well as experiential inputs (including job- and organization- related factors) and SWB. It is also believed that each of the cognitive buffers moderates the effects of personality factors and experiential inputs (including job- and organization- related factors) on SWB.

Results of this study supported both hypotheses, indicating that there is a room in the homeostatic model of SWB for another dimension of experiential input, i.e., job-and organization related factors (job satisfaction and organizational culture).

The correlation analysis, as expected, showed significant positive correlations between the dependent variable (SWB) and the seven independent variables, i.e., job satisfaction, organizational culture, perceived control, self-esteem, optimism, emotional stability, and extraversion. Similarly, there was a strong positive correlation between the two job- and organization- related factors, i.e. job satisfaction and organizational culture ($r = .581$, $P < .001$), indicating that these two variables are indeed related to each other and can be grouped together. In addition, a significant positive correlation was observed between the three cognitive buffer factors (ranging from $r = .411$ to $r = .533$). This result is consistent with the idea that cognitive buffer factors form a combined buffering system for the purpose of SWB output (Cummins, Gullone & Lau, 2002).

Results from the hierarchical regression also showed that the homeostatic model factors accounted for a significant 31.3 % of the variance in SWB. In the same vein, job- and organization- related factors (job satisfaction and organizational culture) added a significant prediction to the variance in SWB, by 15%. This means, 46.3% of the variance in teachers' SWB was explained by the combination of both groups of factors. Of the homeostatic model factors, optimism and perceived control provided significant unique variance while the rest of them (extraversion, emotional stability and self-esteem) contributed only shared variance to the prediction of teachers' SWB. Both of the job- and organization- related factors, i.e., job satisfaction and organizational culture, also provided unique variance. Accordingly, the four strongest and significant predictors of teachers' SWB were found to be: organizational culture ($\beta = .262$); job satisfaction ($\beta = .200$); Perceived control ($\beta = .176$); and optimism ($\beta = .174$).

The findings of this study demonstrated that job - and organization- related factors (job satisfaction and organizational culture), as environmental experiences, interact with homeostatic model factors to regulate teachers' level of SWB. This means that if a teacher experiences poor organizational culture and/or low level of job satisfaction, his/her level of SWB will be negatively affected (lowered), depending on the severity of the experience. Similarly, Lai and Cummins (2013) found in their study that job satisfaction can have effect on people's level of SWB.

The low levels of SWB, job satisfaction, and organizational culture in MTU could be attributed to the various problems that existed in the University. Findings of a recent investigation by MTU's quality audit team, for instance, highlighted the severity of the situation at the university. The quality audit identified problems with regard to (1) good governance (e.g., accountability problems, problem with decision making and fairness, poor human/ financial/ material resource management, problem with implementation of policies/ guidelines); (2) infrastructure (e.g., lack of office and office appliances, poor toilet facilities, lack of recreational facilities, poor transportation service, sever ICT-related problems); and (3) treatment of academic staff (e.g., lack of incentive mechanisms and problems with recruitment/ promotion/ transfer). This report also underlined the fact that there was a very high rate of academic staff turnover and absence of staff retention mechanisms (MTU, 2016).

LIMITATIONS AND CONCLUSION

Limitations of the Study

This study made effort to investigate factors that affect the SWB of teachers of MTU. In so doing, two limitations were observed. The first limitation was associated with the model of SWB used in this study. This study used the original homeostatic model of SWB. However, this model was recently revised after three studies demonstrated that the model could be more effective if personality factors were replaced by HPMood (Core Affect). HPMood (Core Affect) is measured by three affective adjectives as 'Happy', 'Content' and 'Alert'. In this study, HPMood (Core Affect) was not used because the researcher noticed a possible language and/or cultural barrier for respondents to understand and differentiate terms/concepts like 'happy', 'content' and 'satisfaction.' For most Ethiopians (study participants), these three words mean the same thing. Only, psychologists and few other professionals (such as psychiatrists and social workers) could tell the difference between these concepts.

The other limitation was related to a possible measurement error that led to the exclusion of one of the homeostatic model variables from analysis. As previously discussed, this variable is called major life event/ experiential input. The researcher believes that the proper measurement and inclusion of this variable might have improved the prediction power of the model.

In spite of the abovementioned limitations, the researcher believes that the findings of the current study could make important contributions in terms of testing the homeostatic model of SWB and highlighting the role of job- and organization- related factors in affecting SWB of teachers.

Conclusion

This study examined the SWB of teachers of MTU in relation to factors that affect their SWB. In this case, the homeostatic model of SWB was employed and especial attention was given to Job- and organization- related factors (job satisfaction and organizational culture) as predictors of SWB. It was found that teachers of MTU had not only low level of SWB but also low level of job satisfaction as well as poor rating of their organization's culture. It was also found, as hypothesized, that job- and organization- related factors (job satisfaction and organizational culture) joined forces with homeostatic model factors in affecting the SWB of teachers of MTU.

Based on the results of this study, the researcher urges MTU and other concerned government bodies (such as the Ministry of Education and the regional government) to strive for improving the organizational culture of the university and the job satisfaction of teachers. Doing so will help to improve the SWB of the teachers.

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Revisiting Teacher Educators' Training in Ethiopia: Implications for a New Approach to Curriculum Development

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Abstract: This study was a needs assessment study for developing MED curricula in Educational Sciences (teaching of mathematics and science subjects). It was aimed at understanding the current status of science and mathematics teaching particularly in Amhara Regional State, Ethiopia so as to identify the existing gaps in the preparation of primary school science and mathematics teachers and teacher educators for Colleges of Teacher Education (CTE). The study was qualitative in its design. A total of 37 participants (10 deans and vice-deans, 10 department heads, 6 teacher educators, 2 experts, 2 policy makers, 7 previous graduates) were purposely selected from five CTEs, two universities and from the Science and Mathematics Subjects Improvement Center at the Ministry of Education (MoE). Data were collected using semi-structured interview and focus group discussion. Furthermore, secondary data sources such as the National Learning Assessment results (MoE, 2000–2016), Education Sector Development Program documents (2010–2015), Growth and Transformation Plan I (GTP I) (MoFED, 2010) and GTP II (National Plan Commission, 2016), previous MEd curricular documents in science and mathematics education, as well as existing research outputs were examined. Results indicated very low student performance in mathematics and science disciplines, CTE teacher educators' lack of sufficient and relevant pedagogical background as they did not pass through relevant training programs. They reported they have sufficient subject matter knowledge but in pure disciplines that are not very much relevant for someone who pursues a career as a teacher educator. Furthermore, traditional nature of content delivery, use of assessment merely for grading purposes, and deviation of assessment from the Minimum Learning Competencies (MLC) designated for the level are depicted as problems. The obtained results in general show a clear gap in the general pedagogical knowledge and skills, pedagogical content knowledge, and instructional technology that demanded the need of following the framework that integrates technology, pedagogy, and content knowledge for the development of new curricula.

Keywords: Teacher educator; Curriculum development; TPCK; Ethiopia

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INTRODUCTION

In a world that is becoming increasingly complex, science and mathematics are seen as key components of schooling, and higher education in science and mathematics subjects is usually considered of major importance for meeting societal needs such as ensuring the supply of scientists, engineers and other professionals working in scientific fields and ensuring sustainable economic development. Learning science and mathematics in schools is important to help students develop problem-solving skills, become better aware about technology, and better know and manage their surrounding environment.

In order for students to get the best out of their learning experiences, it is strongly assumed that well-trained school teachers and teacher educators are essential. In particular, science and mathematics education have become major fields of study by their own with the focus of developing knowledge about the learning and the teaching of science and mathematics. Such knowledge is assumed to help school teachers and teacher educators better understand why some topics in the areas of science and mathematics are usually considered more difficult than others; why students often misunderstand some concepts in science and mathematics; why some classroom activities undertaken in science and mathematics lessons are more motivating than others; how science and mathematics textbooks influence teaching approaches in some countries; and how teaching models influence students' development and understanding of science and mathematics concepts.

Ethiopia currently reformed the proportion of students who join tertiary education in line with its development priorities. The program mix policy requires universities to implement a 70:30 program mix, where 70% of students are enrolled into science and technology fields and the remaining 30% in the social science fields. This policy change has significant implications to teacher preparation, resource allocation, and student career guidance and orientation. Such implications require revisiting existing teacher training practices and curricula for training teachers. However, there are no studies that show existing practices and the gaps pertaining to science and mathematics teacher education programs.

As one of the oldest institutions, the College of Education and Behavioral Sciences at Bahir Dar University (BDU) has been training science teachers who could teach at secondary schools across Ethiopia. Moreover, the College has been launching graduate programs that aim to produce teacher educators who could teach at various teacher training colleges in the country. As the general focus of the various master's programs have been largely on specific education fields, such as 'educational psychology' and 'curriculum and instruction', there are no studies that show whether such programs are contributing to address the pedagogical content knowledge of the candidates to enable them effectively combine their knowledge of pedagogy with content while teaching. Hence, this study had the aim of revisiting the training of teacher educators with particular emphasis on teaching science and mathematics subjects. The study has specific purposes of:

- understanding the current status of teaching and learning of science and mathematics subjects
- identifying the existing gaps in the preparation of particularly primary school teachers in science and mathematics
- identifying the existing gaps in the preparation of teacher educators for CTEs, and
- showing direction for developing curricula for training teacher educators in science and mathematics teaching and learning

METHODOLOGY

Design of the study

The study was qualitative in its design. It involved examination of national and curricular documents and interviewing of participants from Colleges of Teacher Education (CTEs), Ministry of Education, as well as from Universities.

Sources of data

Both primary and secondary data sources were used for the study. The primary data sources include deans from colleges of teacher education, science and mathematics department heads in CTEs, graduates of previous MED programs in 'Physics Education' and 'Mathematics Education', policy makers and experts at the Ministry of Education, teacher educators at a University. A total of 37 participants (10 deans and vice-deans, 10 department heads, 6 teacher educators, 2 experts, 2 policy makers, 7 previous graduates) were purposely selected from five Colleges of Teacher Education (Debre Markos, Dessie, Finote Selam, Gonder, and Woldiya), two universities (Bahir Dar and Wollo Universities) and from the Science and Mathematics Subjects Improvement Center at the MoE.

The secondary data sources used were National Learning Assessment (NLA) results (MoE, 2000 – 2016), Education Sector Development Program (ESDP) documents (2010 – 2015), Growth and Transformation Plan (GTP) I (MoFED, 2010) and GTP II (NPC, 2016) documents, curricular documents ('Mathematics Education' Curricula of Bahir Dar University), other national and international reports, as well as existing research outputs.

Data collection tools

Data were collected from documents and using semi-structured interview and focus group discussion. The interview and FGD guides were prepared by the researchers. As the study was part of a grand project aimed at improving science and mathematics teaching and learning in primary and lower secondary schools, the researchers used the project launching workshop and the follow up discussion with the partners of the project from Norway as the opportunity to validate the interview and FGD items. Moreover, two experts from the College of Education and Behavioral Sciences, Bahir Dar University were given the questions for

comments. Based on the feedback, the instruments were improved and common understanding was reached among data collectors as to what and how to collect the data. Before conducting the interviews and focus group discussions, consents were obtained from the participants. Six data collectors were involved in collecting the data. The average time for interviews was about 1 hour and 20 minutes and for that of the FGD was 2 hours.

Data analysis

Analysis was conducted separately for data obtained from documents and from interviews and FGDs. Qualitative data analysis was undertaken in the study. The analyses were done taking the purposes of the research as bases for thematic analysis. The status of science and mathematics education in Ethiopia and the quality of school textbooks and master of Education programs in Science disciplines were examined through document analysis. Prevailing conditions in relation to science and mathematics teachers' training were examined from data obtained through interview and FGD.

MAJOR FINDINGS

Results from Document analysis

To assess the prevailing conditions of science and mathematics education in Ethiopia, curricular materials, policy documents, and learning assessment reports were examined. The results of the review are presented below.

The status of science and mathematics learning in Ethiopian schools

The assessment result generally shows that primary and secondary education in Ethiopia is low in its quality. For example, students' achievement in five subsequent NLAs at grade 4, 8 and 10 was generally below 50% indicating that most students are not reaching to the minimum required standard of achievement set by the MoE. For instance, the extent of underachievement in the NLAs, particularly in science subjects, conducted at grade 8 from 2000 to 2016 is indicated in Table 1. The results show that the mean scores of the students in the subjects is below 50%.

Table 1

Academic Performances of Grade 8 Students in Various Subjects and Trends across Years

	Years				
Subjects	2000	2004	2008	2012	2016
Biology	47.16	41.34	38.3	42.10	46.26
Chemistry	40.27	40.10	34.7	36.44	41.29
Mathematics	38.23	40.93	34.1	25.53	35.20
Physics	-	35.32	32.2	34.45	42.58
Composite	31.42	39.42	34.83	34.63	41.33

Source: National Educational Assessment and Examinations Agency (NEAEA, 2000, 2016)

One major reason for the poor performance of the students in the various subjects is the presence of low quality primary teachers. Teachers were poorly prepared and lack subject matter mastery and pedagogical content knowledge to ensure teaching effectiveness at the levels they are teaching (MoE, 2003; Joshi & Verspoor, 2013). Due to the teachers' lack of adequate preparation and relevant background, classroom environment are found to be primarily teacher-centered, limited active student learning and engagement in inquiry processes which contributed for lesser metacognitive skills development and creativity (Joshi & Verspoor, 2013). The low impact of school-based continuous professional development on teachers' classroom practices is also an additional reason for low quality education (Haftu & Yalew, 2013).

Quality of textbooks

Another possible reason for the low performance of students in the national learning assessments is the difficulty and the bulkiness of contents of the textbooks used in schools. For instance, according to the World Bank report (Joshi & Verspoor, 2013), the secondary education curriculum in Ethiopia is academically demanding. The report further indicated that the Ethiopian secondary curriculum is "difficult and highly academic compared to most other countries, even those where teaching is in students' mother tongue" (Joshi & Verspoor, 2013, p. 62). When the length of the undergraduate studies was made to be three years rather than four in 2002, curriculum contents which were part of first year undergraduate studies are moved down to be taught at preparatory school level. The moving down of contents is also done to subsequent lower grades which resulted in increased overall difficulty of contents at lower grade levels.

In response to the challenges faced with regard to teacher professional development, school leadership and management, and textbook quality, the MoE introduced the GEQIP in 2007, under which existing teacher education curricula were revised, new textbooks were developed, and teachers and school leaders were trained. The revision of teacher education curricula considered the promotion of active learning and student-centered approaches. Special emphasis was also given to promote pedagogical content knowledge with a focus on producing reflective teachers that can adapt their approaches based on content and context. This comprehensive reform requires not only better qualified teachers but also teacher educators that can effectively translate the initiative into quality teacher preparation programs. However, the documents (previous MED curricula and curricula for the training of in-service teachers at Master's level in the summer program) reviewed showed that, such existing efforts are not in line with the desired reform in the teacher education system. For instance, in the curricula for MED in Mathematics and Physics programs, there were problems of (a) provision of subject area and pedagogy courses in a separate fashion that left their integration for the trainees; (b) the pedagogy course were very much limited in terms of number and credit points allocated; (c) the teacher educators themselves have no sufficient and relevant background as they did not pass through relevant training. The table below

shows the course number, credits, and organization for an MED program in Mathematics Education at a sample public university.

Table 2

Courses and credit hours allocated to the MED in Mathematics program

Major area courses		
Course title	Course code	Credit hours/week
Algebra I	Math 641	3
Algebra II	Math 642	3
Real Analysis I	Math 631	3
Real Analysis II	Math 632	3
Introduction to topology	Math 652	3
Functional Analysis	Math 731	4
TOTAL		**19**
Professional courses		
Methods of teaching mathematics	Math 601	2
Seminar on teaching mathematics	Math 702	1
Advanced educational research methods and applications	EPsy 627	3
Curriculum design, implementation, and evaluation	Educ 631	3
Thesis	M. Ed 700	3
TOTAL		**12**

Results of field study

Achievements gained in the CTE programs

The participants were asked about the successes of their respective colleges in their effort to produce competent science and mathematics primary school teachers for the region. One of the successes mentioned is the colleges' capacity in producing large number of graduates. A dean from a college of teacher education and a department head of a science section from a college noted that

> …we have been producing many primary school teachers since the establishment of this College, and thus contributed to the achievement of the Region's major vision with respect to promoting "Primary Education for all." At least we have been successful in terms of producing large number of graduates (you may call it "mass graduation") who can teach in primary schools of the Region (Dean)

> The college's success may be explained in terms of helping to expand educational access by way of training more teachers to the growing primary education (Science department head)

Despite the belief that there is better access to education for those who want to be primary school teachers, the participants mentioned that the expansion is not yet sufficient to the extent of fulfilling the demand of teachers. This implies that more work needs to be done. A science section head and a college dean noted that

> Despite all these challenges, the college is striving to fill the existing demand of science and math teachers (Science department head)

> Despite we are training many students every year in all modalities, there is huge teacher demand particularly in science and math (Dean)

In line with expanding access to education, the presence of dedication on the part of the colleges to support the government's emphasis on science and mathematics as key for development was also mentioned as a success. This is noted from the remark by a dean of a college during an FGD.

> The college is working towards achieving the government's priority to improve science and mathematics education because these areas are believed to have key role in speeding up development of the country.

Another issue the participants remarked as strength in the CTE is the continuous improvement of curricula. This has been perceived as a means to make the curricula responsive to the priorities of the country. An excerpt of a remark made by a dean during an FGD supports the idea

> Over the past 10 years, there have been several curricula reforms – improvements one after the other in line with the country's priorities and the advancements of science and technology. I would say the fact that we have been improving the primary school teacher training curricula over the past 6 years is one of the strengths (at a broader level). Over all, I can say that one of the major successes of the College is that we have been trying to optimize the curricula based on the needs of various stakeholders.

Teacher educators' profiles vs their roles in CTEs

During the focus group discussions, participants were asked whether the profiles of the science and mathematics teacher educators in their respective colleges matches with their roles and responsibilities and about the challenges faced by science and mathematics teacher educators in their colleges in terms of training competent primary school teachers (in terms of their training background and their pedagogical skills). There was almost a unanimous

agreement that subject matter knowledge of the teacher educators is unquestionable. This has been reflected in the remarks of deans as well as department heads.

> I believe that there is no subject matter knowledge gap on the part of teacher educators to teach their respective subjects (Dean)

> I agree that teacher educators have sufficient subject matter knowledge to train teacher candidates (Math department head)

An evidence for the fact that most of them do not have problem in subject matter mastery is that many of them have Masters degrees in their respective disciplines. But, the Masters degrees they hold are in pure disciplines that the degrees are not very much relevant for someone who pursues a career as a teacher educator. A science department head from one of the colleges explained the situation very well as follows:

> Overall, I can say that the way our teacher educators are trained in their masters programs is absolutely irrelevant to the College's purpose. When we give the opportunity to our staff to go and attend further education (master's degree), the assumption is that he/she would get sufficient training and experience to become effective teacher educator for math or physics or other disciplines. However, there are no relevant masters programs in Ethiopia that would equip teacher educators to become effective to train primary school science and mathematics teachers (the same is true with other domains). For example, the training of those teacher educators who completed their master's degree is MSc in Space Physics or MSc in Spatial Mathematics or MSc in Inorganic Chemistry. Of course these are good master's degrees, but they are not relevant for someone who is going to be a teacher educator at primary school level. ….when we look at the training background of that teacher educator, it is not relevant to the work he/she is expected to do at the College. I can generally say that our teacher educators in the College don't have the required training to become effective teacher educators for math and science and other disciplines.

In the sample colleges, some teacher educators who attended MED in mathematics and MED in physics programs that existed some years ago (by now the programs are interrupted) in some universities in the country were found and interviewed. These teacher educators confessed that it is difficult to say that the programs they attended for the MED degrees adequately emphasized integration of subject matter and pedagogy.

> In the earlier program, we took two kinds of courses. The first is subject matter courses, and the second is education courses. Unfortunately, we took only two education courses. These are curriculum and advanced educational research. Although the nomenclature of the degree says 'masters of education in mathematics', the education courses were inadequate in helping me to effectively teach mathematics.

> Even these courses were not delivered in organized and no attempt was made by instructors to integrate with the subject matter. For example, the curriculum course focused on general issues than making it related to designing, implementing and evaluating mathematics.

The lack of appropriate training background on the part of teacher educators has in general created a mismatch between what the teacher educators are competent in and what they are expected to do in the colleges as remarked by the vice dean of one of the colleges

> I believe there is mismatch between teacher educators' competence and what they are required to do in training student-teachers. The teacher training program is highly influenced by teaching traditions (teaching in the same way they were trained) than innovative pedagogies. As a result, we teacher educators are not effective to make student teachers skillful, and developed professional identity (student-teachers do not consider themselves as teacher trainees)

> There is a huge gap between the MSc trainings and the job we are expected to accomplish here (Science department head)

As the teachers are responsible for training future primary school teachers, they are expected to have the necessary pedagogical skills so that teacher trainees, as would be teachers, can benefit to learn from them through modeling. However, it was echoed from the participants that most of the teacher educators lack the necessary pedagogical skills

> The problem is on the pedagogical aspect where most teacher educators lack how to represent subject matter concept in a way that can help students understand the content best. For example, teacher educators lack skills to design lesson plans in an innovative way, and hence there are wide disparities amongst us (Math department head)

> Moreover, teachers lack pedagogical skills. Teachers lack to implement various active learning and assessment strategies pertinent to the content. And hence, teachers fail to create a learning environment that motivates students to learn effectively (Dean)

The teacher educators' lack of pedagogical skills may be taken as a reason for the improper handling of courses which are meant to equip pedagogical skills to the colleges' trainees themselves as indicated on the remarks from a dean and a vice dean from the sample colleges

> There are some PCK courses included (subject area method courses), but the major problem is that our teacher educators don't have the required training to teach those courses as per the design. Our teacher educators were not trained in line with the current curriculum (Dean)

> Although there are some subject methodology courses, I assume that those courses are not well-designed and very much theoretical, and I personally don't think that those courses are being taught in the proper way with the right teacher educators (V/Dean)

Furthermore, a vice-dean from a college stated that "teacher educators are not doing enough in developing positive attitude in students towards teaching in general, and do not prepare them to deal with the challenges they will face in the school environment." This shows that the teacher educators' lack of adequate pedagogical skills might have caused them to instill a sense of professionalism among the trainees.

In the colleges, there are efforts in order to fill the gap of pedagogical content knowledge through short-term training programs. But, the participants noted that besides the inadequacy of the trainings, the teacher educators themselves are not very much interested on the trainings

> Teacher educators have substantial gaps particularly in teaching specific content area. What makes things worse is that professional development opportunities to update our previous trainings are not sufficiently available. The existing HDP is inadequate in the sense that it only focuses on general pedagogy rather than being tailored to specific subject matter teaching (Math department head)

> There have been attempts in the College to organize short-term trainings to fill the PCK gap. There is also the Higher Diploma Program, which I think has introduced many of the teacher educators with some of the basic instructional strategies. But, I think I should mention here that our teacher educators may not be fully aware of what they are expected to do as a teacher educator, and they think they are doing the right thing at the moment, and not very much ready to participate in trainings. Even when they know that they lack the proper training to become effective teacher educators, some of them don't have the disposition to reflect on their challenges and seek support form colleagues (V/Dean)

In general during the FGDs, it was reflected from the participants that teacher educators' lesson plans do not meet the standard that science and mathematics learning needs to be. We identified three critical problems of teachers: content mastery, pedagogy, and assessment. The delivery of contents is traditional in the sense that the curriculum contains too much content and teachers also fail to use innovative pedagogies (such as funs and games) in teaching math and sciences. This made students to feel pressured and get frustrated which leads students to develop negative attitude towards math and sciences. This requires teachers to have skills of inquiry learning to relive students' anxiety and promote positive attitude.
Assessment is often used for grading purposes rather than for promoting students' learning and understanding. Assessment for learning is not frequently practiced and hence teachers couldn't make their assessment practices in relation to the Minimum Learning Competence (MLC) designated for the level.

Quality of teacher trainees

The primary objective of the teacher education program is producing quality teacher trainees who can effectively facilitate the learning of students. A number of factors however influence the quality of teacher training including factors related to candidates themselves (e.g. minimum competence to enter the program), the training process (e.g. the quality of instruction), policy and organization related factors (e.g. organization and relevance of the curriculum).

Regarding the quality of candidates joining the teacher education program, participants have mentioned several reasons why the teacher education program is unable to satisfactorily achieve its primary goal. The candidates lack the basic knowledge, skills and dispositions that are necessary to be trained as science and mathematics subject teachers in schools where most of them were reported to lack knowledge of even basic mathematical operations and chemical elements and symbols. The candidates recruited for the teacher education program are grade 10 completers who couldn't pass to higher education preparatory schools, and they often have low scores particularly in science and mathematics. Hence, it is becoming extremely difficult to teach science and mathematics subjects in the teacher education program. When asked about the quality of candidates joining the teacher education program in general and science and mathematics in particular, a science department head disappointedly responded that:

> Students joining the teacher education program are '*leftovers'* from health, TVET and agriculture training programs and have no other options. Even those who joined the program see it as a 'waiting station' ('*batakoyegne'*) and are half-heartedly attending the training, and are ready to leave anytime when they get other opportunities (Science department head)

Moreover, a mathematics teacher educator explains the process of assigning candidates into different departments and how that influences quality of candidates. According to him candidates are assigned into various streams based on their grade 10 achievement results. While those with better achievement prefer to join the social sciences and languages, the low achieving ones are often left for science and mathematics. Candidates who are joining the science and mathematics stream are those with low achievement records and low motivation. They feel frustrated and have negative attitude towards learning science and mathematics.

Participants were also asked to describe the instructional process in CTEs and characterize it using the dimensions of instructional quality (e.g. student engagement, feedback, etc). The respondents acknowledge students their role in the instructional process, however, most of their responses focus on the role of teacher educators in creating a powerful learning environment that can motivate students to learn and achieve better. Asked about the competence of teacher educators, one of the deans of CTEs reflected that:

> There is lack of pedagogical content knowledge among teacher educators for they fail to practically demonstrate to teacher trainees how a specific content can be taught better. As a consequence, primary school teachers who passed through the current training program are also unable to effectively teach and contextualize math and science topics in a way that children understand best (Dean).

According to the respondents, a 'real teacher educator' is someone who has the competence about how to integrate content and pedagogy effectively. Frequent feedback from schools and exit exam results of prospective teachers affirm that this problem is critical and needs immediate action from concerned bodies.

The organization and relevance of the current teacher education curriculum is another theme highlighted by the respondents to have substantial influence on the quality of teacher graduates. The response of a science department head illustrates how much the organization of the teacher education curriculum influences student learning and also teachers' effectiveness in teaching. According to him, the current training modality merges the science courses (physics, chemistry and biology) together to prepare teachers to teach integrated science subject in primary schools. It becomes very difficult to address all the major content areas given the limited amount of time allocated for the course. This has contributed to candidates' low content mastery and teachers' inefficiency in integrating the different science topics together. This is also partly due to the fact that teacher educators were not prepared to deal with courses of such nature which are given much emphasis in the current teacher education program.

The subject area and professional course mix still remains a sticking point in the teacher education system of the country where some argue the current teacher training curriculum does not give sufficient emphasis to content while others argue for pedagogy. Participants therefore emphasized the need to continuously revise the curricula in order to keep balance between content and pedagogy. For example, one of the deans of CTEs explains

> One of the main issues that we couldn't resolve during the curricula reforms has been the balance between subject area and methodology courses that trainees need to go through during the training. There have been complaints among the large majority of the College community that not enough attention is given to subject area courses. At the same time, others complain that not enough methodology courses are included in the curricula.

This response shows widespread conceptualization of separating pedagogy and content knowledge among teacher educators themselves. This in turn indicates the need to move towards integrating content and pedagogy rather than looking for a balance that still keeps them separately conceptualizing pedagogy and content.

IMPLICATIONS FOR CURRICULUM DEVLOPMENT FOR TRAINING TEACHER EDUCATORS

Based on the results obtained from the document analysis and field reports, the following concluding remarks and directions for developing the MED curricula for Educational Sciences (Teaching of Mathematics and Science subjects) are forwarded.

- *Launching masters programs in teaching and learning mathematics and science subjects is timely and relevant*

The country's vision of becoming a middle income country by 2025 is mainly based on science and technology as these fields are seen as key drivers of development. The Ethiopian government has declared a 70:30 program mix for higher education institutions, where 70% of students joining universities shall be assigned to science and technology fields and the remaining 30% to social sciences. To achieve this vision and fulfill the program mix policy, it is important to prepare and make in place the required human resource. This, in turn, requires supporting primary and secondary schools through supplying competent teachers and support inputs, following up and supporting the teaching and learning process, so that students learning could be improved. It is also important to develop dispositions of students towards science, mathematics and technology starting from primary schools. At the heart of these activities are teachers who are equipped with the relevant knowledge, skills and attitudes.

In this regard, as indicated in the report, all the participants unequivocally agreed that the proposed masters programs are timely and highly relevant to improve the existing problems in the teacher training and development of teacher education in Ethiopia particularly in training mathematics and science teacher educators. As voiced by all the participants such masters programs are extremely crucial if we have to do something with regard to the quality of primary and lower secondary education in Ethiopia. In this regard, BDU needs to be exemplary in designing relevant masters programs. Participants appreciated BDU's initiative to open such programs as there are no other similar master's programs in Ethiopia that are designed to train teacher educators integrating pedagogy, content and technology. Moreover, the importance of launching the programs is not only for school teachers and teacher educators, but also for institutions like the Ministry of Education; specifically, the national center for mathematics and science education improvement, where they are expected to provide short term capacity development for teacher educators who in turn are supposed to train key teachers from school clusters throughout the country.

- *Integrate pedagogy, content and technology (tPCK)*

All participants and the documents reviewed are consistent in indicating for the need to move from the current separate provision of content, pedagogy and technology to integrating them. The training of teacher educators thus needs to be reconsidered in a way that can provide opportunity to integrate technology, content and pedagogy. Participants and reviewed

documents indicated that the current separate provision of tPCK is producing unqualified teachers who are unable to teach effectively and meaningfully by bringing the contents down to the level of the students. That is, the teacher educators have limited capacity to equip the teacher trainees pedagogical skills that could help them teach basic primary school science and math contents. The teacher educators don't have the necessary training background on how to support the teacher trainees to become effective primary school teachers. They were also consistent in indicating the need for making the proposed programs practice oriented. Almost all participants contended that the current practice lack integrating theory with practice and the student-teachers are left to do this by themselves after joining the schools. One of the teacher educators remarked that "listing the available active learning strategies and telling trainees to implement in their future classrooms does not suffice to produce competent teacher educators. This has direct impact on the training of competent primary school teachers." When it comes to the content, participants reiterated that teacher educators don't need advanced training, and they suggested the planned MED programs to give proper attention to pedagogical issues. When designing the master's curricula, participants indicated that they need to show how to teach the contents at each grade level. Overall, the MED programs need to take into consideration the challenges that teacher educators are currently facing particularly in terms of equipping them with tPCK. The framework preferred for integrating technology, pedagogy, and content knowledge in the newly developing curricula is indicated in the figure below (From Koehler & Mishra, 2009),

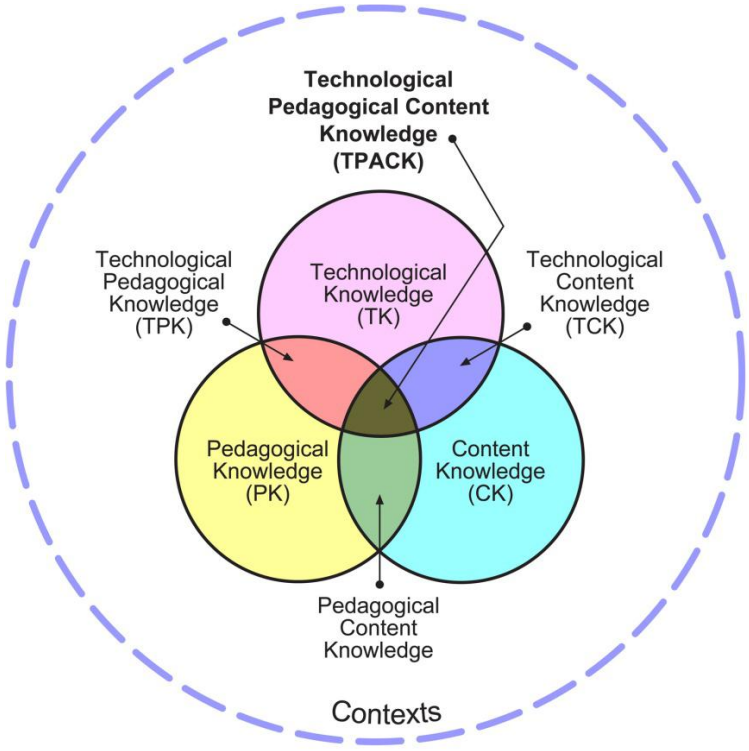

Figure 1. Framework selected for the newly developing MEd curricula

- *Align the responsibilities of teacher educators in CTEs with the competencies acquired at University*

It is also mentioned that the proposed masters programs need to consider the limitations of the previous ones in that serious attention need to be given to aligning the competencies in the curricula at university and the roles and responsibilities they have at CTEs. In the current system of training teacher educators for CTEs, they are trained to specialize in their respective disciplines though the student-teachers curricula or contents do not require sophisticated content mastery as such. For instance, a person with a bachelor degree in mathematics or other science fields is specializing in one of the streams in the disciplines such as MSC in quantum physics, MSC in inorganic chemistry or zoology. In other words, in the participants' words, such system of training is producing graduates to become science experts, not to be real teacher educators. It is advised that the current programs need to fill in such gaps in the training. In other words, we need to make sure that teaching primary school students is a science by itself. The fact that someone who finished an MSc in Math and has an advanced understanding of a certain content of mathematics, for example, doesn't necessarily suggest that the person will be an effective mathematics teacher educator. Properly training teacher trainees who will teach in lower grades and acquainting them with necessary requisites to design effective lessons requires teacher educators to possess these skills themselves. This is not only for teacher educators in CTEs but the professors in the university who are supposed to train the teacher educators for CTEs also need to demonstrate the skill of integrating content and pedagogy. Mere rhetoric, without demonstrating to students that it is working, may not guarantee the potential primary school teachers or teacher educators at CTEs practice it.

- *Design a relevant curriculum*

Many of the participants mentioned that the curriculum design needs to include relevant courses to address the current problems in the training of teacher educators. They cautioned that the constructive alignment among objectives, contents and assessment mechanisms need be crafted carefully so that the curriculum could meet its objectives. They also underscored the need for seamless integration of pedagogy, content and technology. Some of the participants also mentioned the need to include courses that focus on motivating teacher educators to be committed for their work and thereby enable them to instill the disposition into their teacher candidates. Moreover, to make the programs relevant and meet the desired objectives, they should be designed based on the primary and secondary school curriculum contents. That is, the graduates of such a program need to have knowledge and skills of pedagogy that help them design, deliver and assess specific contents in their respective subjects and grade levels or cycles. With this regard, one the teacher educator noted that "teacher educators should pass through a training program that focuses on primary and secondary school curricular contents and that creates opportunities to integrate content and pedagogy. Teacher candidates should be trained on what they will do in primary schools, and how."

- *Promote the MEd programs to all relevant stakeholders and strengthen/establish collaboration*

The need for promoting the MEd programs to all relevant stakeholders was underscored by participants. They mentioned that it needs to be fully recognized by the Ministry of Education, regional education bureaus and most importantly by employers. Some of the participants suggested the need for a framework with regard to those teacher educators who have already an MSc degree in one of the suggested disciplines. Otherwise, it will be a matter of willingness for this people to join such programs. Most importantly, there should be a clear regulation that for someone to teach in teacher training colleges, he/she should have an Educational Sciences (teaching of Science or Math subjects) or have an education-oriented degree. They also mentioned for the need to work towards modifying the civil service procedures which simply allow everyone with master's degree to get hired as a teacher educator. Moreover, collaborative work among stakeholders including schools, CTEs, policy makers, etc. is needed. Teacher educators' training programs should be aligned with how and what to teach in primary and secondary schools (relevance of courses need to be revisited). Hence, it requires understanding current limitations of teacher educators' training programs. Emphasis should be given to practice oriented training of teacher educators. Tailoring the existing CPD for teacher educators into their domain areas (e.g., HDP) is also suggested.

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Internationalization of Higher Education and Research in Ethiopia: Considerations for Institutional Strategy

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Abstract: In Ethiopia, research is not only small in size but also largely set as a component of the higher education system. Therefore, policy and strategic decisions at national level are often developed in blended manner that encompasses both aspects. Internationalization has for the first time emerged as a policy issue in the fifth Education Sector Development Program, in which research also gained attention, though less than deserved. This paper examines the practice of internationalization of higher education at institutional level and the existing loose-defined policy space. Finally, the paper outlines possible institutional strategies for the internationalization of research.

Keywords: higher education; internationalization; Ethiopia

INTRODUCTION

The internationalization of research is embedded within the general concept of internationalization of higher education. This is more so in Ethiopia where research is predominantly done with in higher education institutions. Although a relatively recent phenomenon, the Internationalization of higher education (IoHE) has gained a prominence as a subject of policy formulation. It has attracted the attention of wide range of stakeholders from the individual student or staff who decides to enroll or work with institutions in countries other than their own, to the supra national organs that are committed to the advancement of policy and the promotion of the practice in internationalization. An increasing volume of research is being produced in a continuing attempt to understand the phenomenon. This has resulted in the concept of IoHE taking deeper root and expanding its range of dimensions (de Wit & Hunter, 2015), gradually establishing its place in the field of higher education.

As the involvement of different actors to promote and tap into the advantages of IoHE, continues to grow, there are also skeptics who question its long term benefits, particularly for developing countries. They argue that internationalization is shaped to fit to and to propagate western hegemony in education, and needs to be reconsidered (Patel, 2017). Nonetheless, developing countries around the world are crafting policies for and investing resources into IoHE to make the best out of what it offers. Recently Ethiopia has also introduced IoHE in its grand education plan – the Fifth Education Sector Development Program (ESDP-V).

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This short paper looks into the practices of internationalization in the Ethiopian higher education, and lays down the outline of the current policy framework. It then specifically focuses on possible institutional strategies for improving the international nature of research with in the broader frame of IoHE. But, first an introduction to the general concept.

The concept of Internationalization of higher education

IoHE means different things to different people and carries different implications for specific contexts. This is explained by the multiplicity of dimensions, manifestation and actors in IoHE. As a result, the concept has evolved to be called by, or associated with, a number of different terminologies which, one way or another, address a certain aspect of IoHE.

Table 1
Evolution of International Education Terminology

New terms since 1990s	Existing terms since 1970s	Traditional terms
Generic terms		
Globalization	Internationalization	International education
Borderless education	Multicultural education	International development cooperation
Crossboarder education	Intercultural education	
Transnational education	Global education	Comparative education
Virtual education	Distance education	Correspondence education
Internationalization "abroad"	Offshore (overseas) education	
Internationalization "at home"		
Specific terms		
Education providers	International students	Foreign students
Corporate universities	Study abroad	Student exchange
Liberalization of educational services	Institution agreements	Development project
	Partnership projects	Cultural agreement
Networks	Area studies	Language study
Virtual universities	Double joint degrees	
Branch campuses		
Twinning programs		
Franchise programs		
Networks		
Global education index		

Source: Knight (2008) p. 12

Though universally acceptable definition is not possible, the following general definition, given by one of the prominent scholars in the field, Jane Knight, is commonly used. She proposed that IoHE perceived either at the national/sector or institutional level can be understood as "the process of integrating an international, intercultural or global dimension into the purpose, functions or delivery of postsecondary education" (Knight, 2004, p.11).

This definition encompasses not only the broad categories of the content of internationalization but also common ways of integration. It can be reinterpreted to fit to specific circumstances and needs based on the purpose, function and delivery mechanisms a specific institution or higher education system pursues.

Another possible way to understand the concept of IoHE is in terms of its underpinning rationales. As IoHE takes place at different levels and for different purposes, various actors with specific motives/rationales are involved. The overall rationales for IoHE are summarized into four major categories by deWit (2002,).

1. Political rationales: these include country relations and diplomatic purposes such as foreign policy/strategic alliances, national security, technical assistance, peace and mutual understanding, spreading national identity, and creating/enhancing regional identity
2. Economic rationales – these are more dominant and directly linked with globalization of economy. Economic growth and competitiveness, supplies to the labor market/national educational demands, and the financial incentives for institutions and governments.
3. Cultural and social rationales- these are concerned with the export of national, cultural and moral values, intercultural understanding, citizenship development (personal growth)
4. Academic rationales – an international dimension of (and productivity in) research and teaching, extension of the academic horizon, institutional capacity building, profile and status enhancement, improving quality and aspiration to international academic standards

THE PRACTICES OF IoHE IN ETHIOPIA

Historically, certain international elements are observable in the Ethiopian education. As Semela and Ayalew (2008) noted, traditional and religious educational institutions were connected with institutions and educational traditions of other countries. The Ethiopian Orthodox Church's connection to the Egyptian Coptic Church and contents of its curriculum from Greece, as well as the use of Arabic in Islamic Schools (Madrasas) can be considered as the earliest signals of internationalization in Ethiopian education. Over the years the arrival of missionaries and the return of foreign educated Ethiopians brought more content and form of educational delivery from abroad (Zewde, 2002).

In higher education in particular, the establishment of the first institution – University College of Addis Ababa – by Canadian missionaries, and the consequent role of foreigners in administrative positions, as well as the teaching and administrative contributions of foreign educated Ethiopians (Wagaw, 1990) established the international dimension. During the Derg era higher education was influenced by the global political dynamics of the Cold War. Not only educational curriculum was influenced by socialist ideology but the impact of

development aid and technical assistance from socialist countries, along with government sponsored scholarships to those countries played considerable role (Bishaw & Melesse, 2017).

Since the 1991 change of government, the liberalization of the higher education system created space not only for private providers but also for the substantial influence of donor countries and international organizations (Martin, Oksanen & Takala, 2000; Woldegiyorgis, 2014). Although currently there is no well-developed strategy and/or proper coordination for activities of internationalization, at institutional level Semela and Ayalew (2008) have identified different efforts that can fit in the domain of internationalization. These include:
Collaborative research and joint programs - Many of the senior universities have linkages with counterparts in Europe and North America. Conducting collaborative research and offering joint/sandwich academic programs (at graduate level) are among the common elements of such linkages.

Student and staff mobility - Although Ethiopia has a long way to go in becoming a favored destination for mobile students, some universities have student exchange initiatives. Refugee students from neighboring countries account for the largest share of degree seeking foreign students in the country. Besides the US and Western European countries India, South Africa and Saudi Arabia are among the common destinations for Ethiopian students, according to UNESCO. Staff mobility happens in two main ways: academic staff traveling abroad for further study, and short term trainings and/or learning and experience sharing trips as part of institutional partnerships in capacity building. Also, in addition to the expatriates who account for a substantial share of the academic staff in public universities, volunteers and visiting professors and researchers under schemes like the Fulbright represent the other facet of staff mobility.

Language of instruction - English has been the language of instruction for secondary and higher education since the beginning of modern education in the country. This has also been reaffirmed in the 1994 Education and Training Policy. Although the use of English as a medium of instruction is not necessarily equivalent to internationalization, it contributes in many ways (in curriculum, mobility, partnership, etc.) to the easier interaction of the higher education system with the rest of the world.

Collaborative cross border (distance) programs - programs by foreign institutions which are offered in some form of collaboration with local institution constitute another major international aspect of the Ethiopian higher education. Several such programs are offered in a form of distance and online education, at graduate level.

Current policy framework

The key role attributed to higher education and vocational institutions in the poverty reduction and development plan of the country provides the overarching policy framework.

Post-secondary institutions are responsible for the national capacity building agenda whereby enhancing their own capacity, among other things by creating international collaborations, is a priority. While Ethiopia does not yet have a comprehensive higher education internationalization policy/strategy, some important insights can be observed in the various national documents.

The 1994 national Education and Training policy has no clear stipulation pertinent to the dimensions of internationalization. It makes only two references in this regard: "international outlook" of citizens as one of the objectives of education and training; and the use of English as the medium of instruction and the right provided to students to choose one foreign language for the purposes of promoting cultural and international relations.

The 2009 higher education proclamation, which is revised from its 2003 version, makes several references to international good practices as a way of determining the most suitable or up-to-date institutional models and practices in areas such as academic freedom, status of academic staff, employment and promotion guidelines, status and organization of institutions, etc. International competitiveness is also identified as one of objectives of higher education. Although details lack, one can argue that the objective of being internationally competitive calls for international dimensions to be incorporated in the curriculum, practical training, institutional arrangement and practices as well as in extracurricular activities and composition of students and staff.

More to the point of internationalization, the proclamation calls for institutionalized system for universities to conduct joint research with national and international institutions, research centers and industries. Nonetheless, there are no more details regarding the objectives and detail mechanisms of the process, making it difficult to conclude that the proclamation has indeed addressed issues of internationalization in higher education/research.

A breakthrough came with ESDP-V which offered a wider and more relevant view of internationalization. In terms of general objectives and approaches it stipulates that during the implementation of ESDP-V (2015 to 2020) the international competitiveness of graduates and standardization of certification in par with international practices (particularly in vocational training) has been emphasized. As such universities are expected not only to improve their communication with employers (national and international) and the labor market but also to strengthen collaborations with international institutions.
ESDP-V sets out internationalization as a possible strategic focus, articulated in what can be summarized in the following points.

- Institutional collaboration will take place at regional, national and international levels.
- Institutional collaborations are meant to expand "international dialogue and exchange" targeting improved quality and effectiveness in the core function of the university.

- International collaborations in particular have their central aim of promoting the import and export of local and international knowledge, technologies, and social and cultural experiences.
- Mobility of staff and students through joint academic and research programs are envisaged towards attracting international students, with regional focus.

To reach these general ends ESDP-V has outlined specific activities and set targets. In addition to the establishment of a national body to facilitate the development of system level internationalization strategy, institutions are required to focus on specific activities that are pertinent to the internationalization of research (MoE, 2015). The following points are more relevant.

1. Each university will have an international collaboration strategy and will open an international liaison office – since collaboration is a broad term, it can create opportunities for partnerships in research and publication.
2. Percentage of research funds secured from industry and international sources will reach 50% - although no further breakdown is offered, it can be assumed that application for research grants abroad, perhaps in partnership with foreign institutions and researchers, can possibly be among the targeted sources.
3. Share of joint research programs undertaken in collaboration with non-Ethiopian universities will be 20%. This is a direct call for institutions to undertake strategically targeted efforts to form and utilize international collaborations for research.
4. Student mobility through international exchange programs will be encouraged – this, particularly at graduate level enhances the international nature of research.
5. Percentage of foreign staff will increase to 10% (from 8% at the end of ESDP IV). Considering that each academic staff is required to dedicate a certain percentage of his/her time to the undertaking of research, foreign staff can bring in their experiences and capacity in research as they do in teaching.

Strategies for improving the internationalization of research

Mohrman, Ma and Baker (2008) characterize universities focusing on internationalization of their research, among other things, by: global mission that goes beyond boarders; research intensity; changing roles for professors confronted by different kinds of competitions (e.g. for publication, for tenure, for research grant, etc.); diversified funding; worldwide recruitment; increasing complexity as the number of stakeholders increases and their respective demand changes; dynamic relationship with government and industry; and global collaboration with similar institutions. Antelo (2012), who agrees to this characterization, adds that such universities also have the tendency for more involvement of faculty in institutional decision making processes. These characteristics can be understood as manifestations of strategic focus on internationalization of research.

Adapa (2013), on his part, emphasizes the engagement of early career researchers in international collaborations as a strategy to build lasting relationships and research networks.

Further he acknowledges the lack of coordinated strategic approaches in most universities. In recognition of the importance of coordinated approach to internationalization, citing the 1999 internationalization Strategy of the University of Waterloo, Adapa (2013, pp. 8-9) offers a comprehensive list of 13 activities that contribute to strategic internationalization of research in a university. On the other hand, in a 2005 ACE report Green (2005), who took rather a broader approach, identified six major dimensions of internationalization pursued by the more active research-intensive universities. These dimensions in Green's analysis are, however, presented for a comprehensive university where undergraduate programs and general internationalization, than internationalization of research in particular, is emphasized. By combining the two lists, the following seven strategic considerations can be identified for effective internationalization of research:

Clear institutional commitment – internationalization of research shall be articulated in the essential documents of the institution such as in its mission statement, strategic plan, various policies and procedures pertinent to the activities of the main institutional units, university website, prospectus, etc. Internationalization has to be clearly identified as one of the top priorities of the institution. Articulating commitment also requires the institution to undertake a periodic assessment of its internationalization activities examining progresses, shortcomings and potential for improvement.

Institutional mechanisms - Craft proper policies and procedures to provide seed funding and other forms of support for international initiatives; reporting mechanisms to identify and keep track of international research projects in order to consider them in fundraising priorities; and setting guidelines to ensure part of the overhead gains is reinvested in similar initiatives all play important roles. The presence of dedicated human resources, such as offices responsible for the various activities in internationalization or campus wide standing committees, along with the necessary resources, including office space, mechanisms of communication, etc., take another dimension in this regard. However, it needs to be noted that this can be done in many different ways depending on the circumstances of the respective institutions.

Marketing - showcasing research and scholarly strength of the university to other institutions, international researchers, potential donors, alumni, etc. by participating as well as organizing relevant academic conferences, by advertising on journals and other scholarly publication outlets. Universities need to establish, cultivate and maintain relationship with stakeholders who can be potential sources of funding. Marketing also works internally. Effective communication of internationalization agendas and activities, use of the university website, group email, newsletter, bulletin, etc. to reach out to faculty and researchers to keep them informed of internationalization activities and update them on opportunities plays a crucial role.

Support system - Faculty are the ones who will be directly involved in international research, hence, they have to be supported, motivated and rewarded for achievements in this specific area. The professional development of faculty with respect to international engagement has to

be institutionally supported by earmarking resources for this specific purpose. Organizing workshops on how internationalization works and how to engage in international research collaborations, providing technological support, flexibility to accommodate for study abroad or research visits, support in grant writing, etc. constitute the kind of institutional support needed to promote internationalization of research.

Incentive schemes - Establish a reward system in performance review, promotion and tenure of staff that acknowledges participation and excellence in international research. There should also be an institutional mechanism in place that supports and incentivizes faculty and researchers to apply and obtain external funding for research. In light of promoting internationalization of research it is possible to set varying incentives to provide more reward for international grants, or for those done in collaboration with foreign institutions/colleagues, compared to other domestic sources.

Support for young professionals - In addition to making international research engagement as a criterion for promotion and/or other forms of reward, universities should invest in supporting particularly their junior faculty. Creating a system that especially encourages graduate students and early career researchers to be involved in international research projects not only helps to enhance their capacities but also to ensure continuity of international engagement at institutional level.

Overall international environment - institutions have to make sure that there is enough support for attracting international students (more at the graduate level concerning research) and for international activities on campus that generate exposure to global issues. In addition to offering scholarships and other financing schemes for international graduate students, organizing on campus international events, such as speakers series on international issues, communication of international research, integration activities for international students, etc. as well as opportunities for [graduate] students to participate in international events, such as conferences, colloquiums, research visits, study abroad, etc. are some of the mechanisms to support internationalization of research.

FINAL POINTS FOR CONSIDERATION

The Ethiopian higher education has had international dimensions since its inception in its modern form. Though one cannot completely disregard the arguably negative consequences in detaching higher education form local realities, it can also be argued that the Ethiopian higher education has opportunities to a fairly easy readability and interaction with the rest of the world. This is, among other things, due to its language of instruction and the mobility of students and staff.

The recent impetus for the internationalization of higher education in general and for enhancement of research engagement in particular, through institutional collaborations and other mechanisms, needs to be cultivated. It is imperative that Ethiopia needs to develop a

comprehensive strategy for the internationalization of higher education, including research. In the meantime, institutions should effectively use the current policy space that encourages engagement in international partnerships and short term in- and out- bound mobility of students and staff.

To this end, institutions need to have their own internationalization strategies which outline their goals, mechanisms and the possible ways to enhance the in-house capacity and quality of research. It is important to underline that institutions need to frame their strategies from their own point of strength. While it is vital to refer to and learn from the experiences of other institutions, Ethiopian higher education institutions need to look into their own relative advantages to negotiate partnerships. This requires identifying their niche areas of research advantage which can be of interest for potential partner institutions, donors and research funding agencies. However, it is equally important to strike a balance with ensuring that research agenda is locally rooted and focused on addressing issues and problems of the country, and the local environment, vis-à-vis crafting research programs that are merely driven by international aspirations.

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The Role of Community of Practice (CoP) to Ensure Teacher Development and Sense of Professionalism: The Implication for University Teachers

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Abstract: A community of practice (CoP) is a set of people who 'share a concern, a set of problems, or a passion about a topic, who deepen their knowledge and expertise… by interacting on an ongoing basis' (Wenger, McDermott, & Snyder, 2002, p. 4). In the context of this paper, CoP refers to an informal as well as semi-formal aggregation of professionals who have come together to forge collaborative learning situation, which is an important step toward fostering professional effectiveness and improving learners' learning achievement. CoP has long gained importance as a model and strategy for improving teaching quality and for enhancing student learning outcomes. It provides teachers the context to learn and grow together. Studies suggest that there is a positive relationship between CoP, student achievement and teachers' professional satisfaction. CoP involves diverse and interacting professional learning practices and processes. Among the major professional learning practices and processes are collective enquiry and collaborative learning. Membership in CoP is characterized by strong professional and emotional bonds between practitioners and their leaders. This paper discusses the implication of CoP for facilitating professional development and supporting the efforts toward collective capacity building in the university context. The paper addresses institutional, attitudinal and orientational variables that prevent CoP from becoming an effective source of professional growth. Finally, it tries to address what should be done to create and sustain CoP and to enable and empower university teachers to become informed and effective practitioners

Keywords: Teacher Development; Teacher professionalism; Community of Practice

CONCEPTUAL FOUNDATION OF COMMUNITIES OF PRACTICE

The concept 'communities of practice' (CoP) was coined by Jean Lave and Etienne Wenger in 1991. In their original definition, Lave & Wenger (1991) conceptualized communities of practice as:

A community of practice is a set of relations among persons, activity, and world, over time and in relation with other tangential and overlapping communities of practice. A community of practice is an intrinsic condition for the existence of knowledge, not least because it provides the interpretive support necessary for making sense of its heritage. Thus, participation in the cultural practice in which any knowledge exists is an epistemological principle of learning. The social structure of this practice, its power relations, and its

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condition for legitimacy define possibilities for learning (i.e., legitimate peripheral participation). (p. 98)

The other concepts being interchangeably used with communities of practice are *communities of interest, communities of learning, and communities of commitment*. All of them are used to describe the kinds of informal knowledge building and sharing in workplaces. Lave and Wenger coined the concept based on their understanding of learning as a situated, social process that depends on and develops through conscious and goal-oriented interactions with others in their apprenticeship communities (Wenger, 1998).

ELEMENTS OF COMMUNITIES OF PRACTICE

Various scholars have come up with cross-functional elements of communities of practice (Saint-Onge & Wallace, 2003).

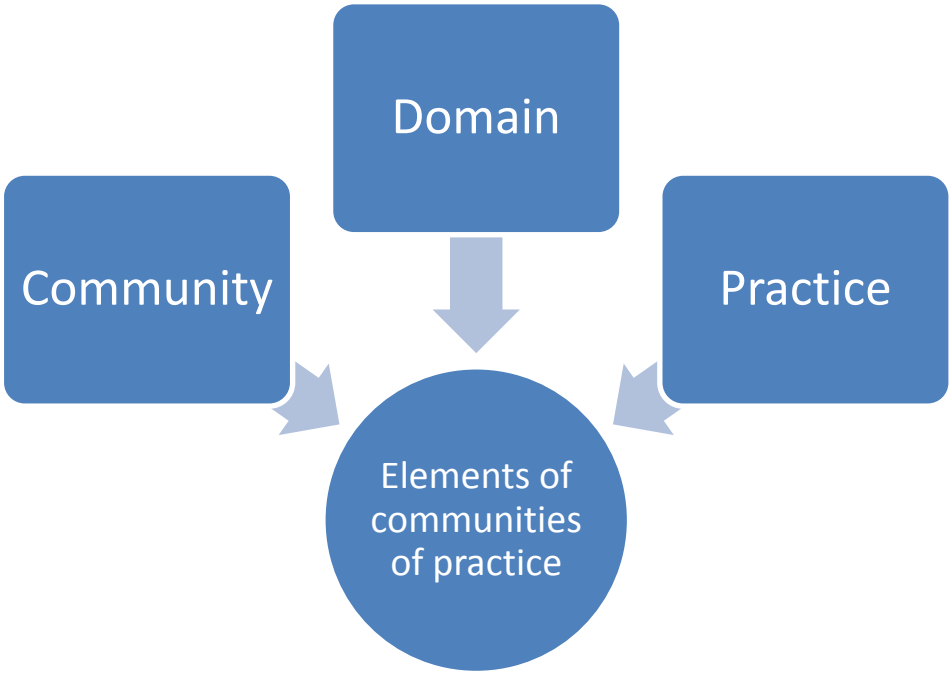

Figure 1. Elements of Community of Practice according to Wenger & Snyder

For Wenger and Snyder, the following constitute the fundamental elements of CoP.

Domain: the community's knowledge base and understanding of the field in which it resides

Community: the collection of people and their corresponding roles that form the community
Practice: the "work" of the community: its actions, learning activities, knowledge repositories, etc.

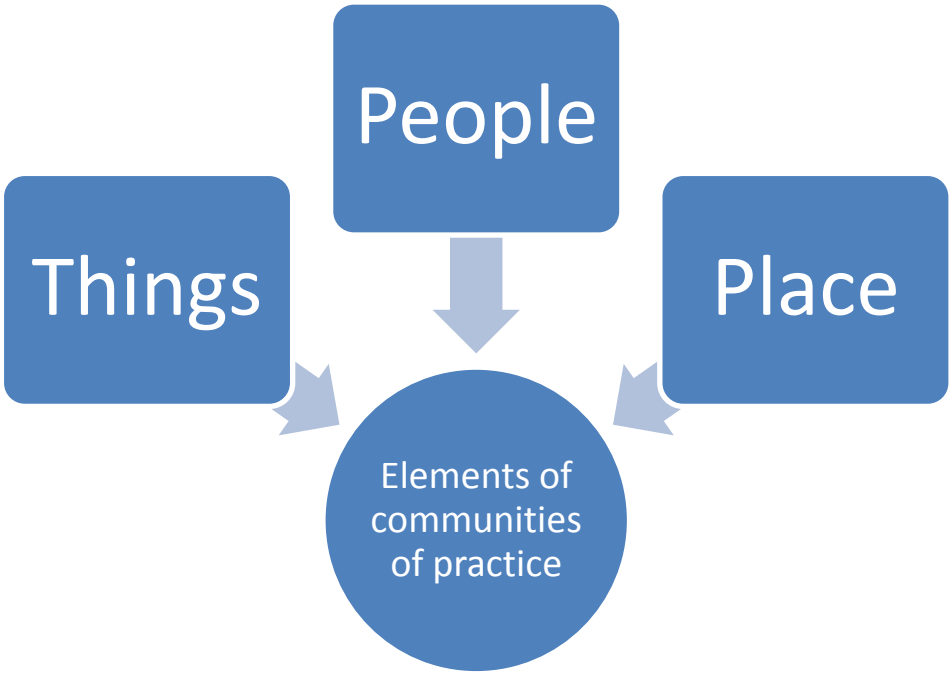

Figure 2. Elements of Community of Practice according to Lesser, Fontaine & Slusher

On their part, Lesser, Fontaine & Slusher identified the following elements:

People: those who interact on a regular basis around a common set of issues, interests, or needs

Places: gathering points, face-to-face or virtual, that provide a meeting ground for the community members

Things: the knowledge objects generated by individuals or collectively by the community

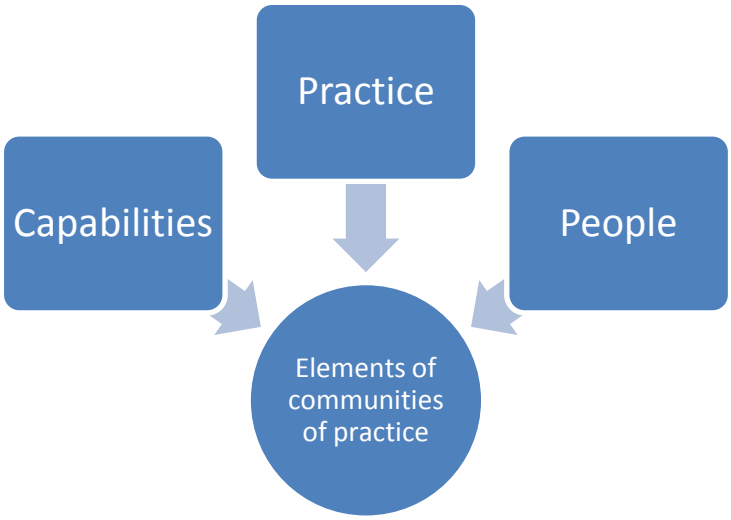

Figure 3. Elements of Community of Practice according to Saint-Onge & Wallace

Saint-Onge & Wallace also emphasized the interactions between the following conditions to build a sustainable CoP.

Practice: the knowledge base, processes, and procedures that inform a collection of actions in the delivery of a product or service

People: the community of practitioners who join together to find ways to rebuild capability required to realize business strategies

Capabilities: the knowledge base, skills, abilities, attitudes, brands, processes, and relationships that result in the ability to undertake actions within the practice. Capabilities imply the "link" between strategy and performance.

THE THEORY BEHIND COMMUNITIES OF PRACTICE

The idea of learning and growth through engagement in communities of practice has been guided by Wenger's (1998) theory of social learning.

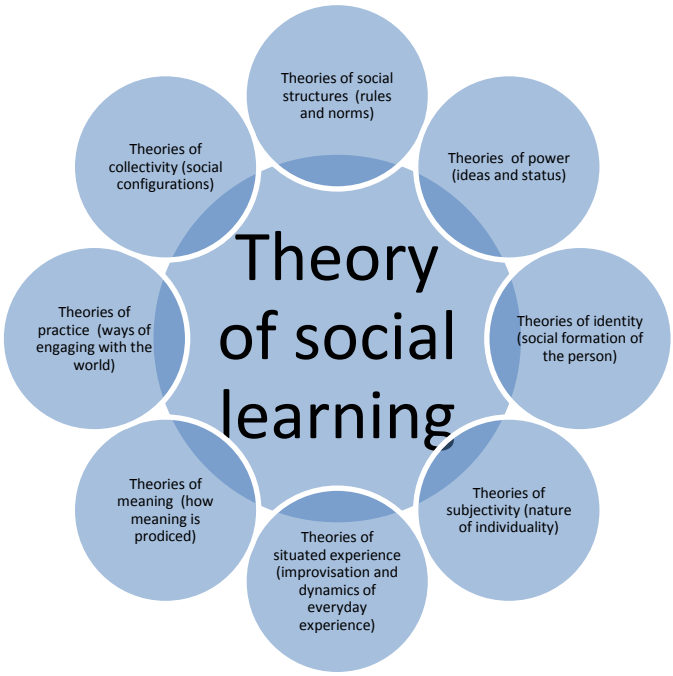

Figure 4. The conceptual underpinnings of Wenger's (1998) theory of social learning in Communities of Practice.

This theory places learning in the context of practitioners' lived experience and their meaningful participation in the world. In the words of Lave and Wenger (1991, p. 47), 'communities of practice are realized in the lived-in world of engagement in everyday activity'. In relation to this, social theory of learning posits that learning in general and professional learning in particular is a fundamentally social phenomenon. This theory emphasizes the integration between meaning, practice, community and identity.

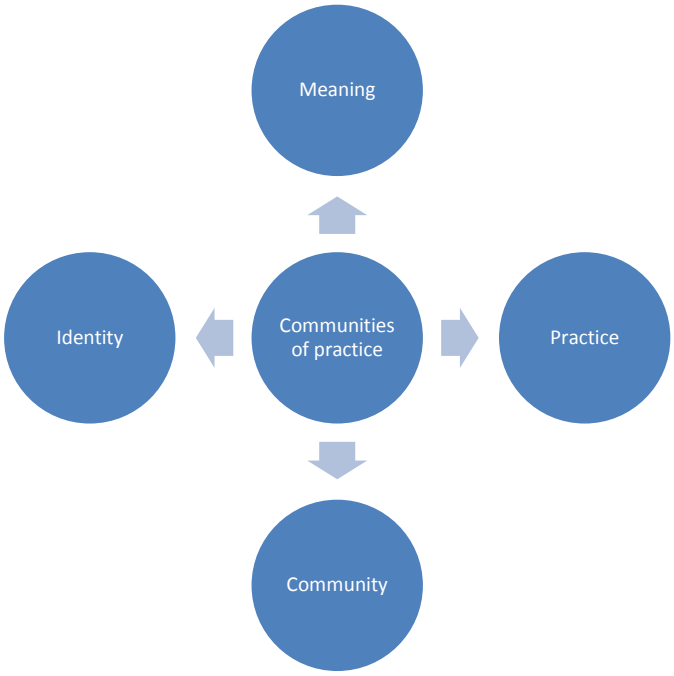

Figure 5. The integration of meaning, practice, community and identity

'*Meaning*: a way of talking about our (changing) ability – individually and collectively – to experience our life and the world as meaningful' (in terms of learning he refers to this as 'learning as experience').

'*Practice*: a way of talking about shared historical and social resources, frameworks, and perspectives that can sustain mutual engagement in action' (in terms of learning he refers to this as 'learning as doing').

'*Community*: a way of talking about the social configurations in which our enterprises are defined as worth pursuing and our participation is recognisable as competence' (in terms of learning he refers to this as 'learning as belonging').

'*Identity*: a way of talking about how learning changes who we are and creates personal histories of becoming in the context of our communities' (in terms of learning he refers to this as 'learning as becoming').

PROFESSIONAL LEARNING AS AN ENGINE OF PRACTICE

Meaningful professional practice and growth is the result of active process of participation, negotiation through continual interaction and the creation of artefacts that show the existence of participation and involvement in professional practice. In relation to this, Wenger (1998), sees learning 'as the engine of practice and practice is the history of that learning.'

Mutual engagement usually results also in the creation of shared histories and identity stemming from a shared repertoire of practice. This in turn becomes a source of coherence

and unity for the community through which identity is created (and transformed) for both individuals and the community.

The role of CoP for Teachers' professional development

1. CoP helps professionals develop shared meaning:
2. CoP helps establish a common ground for ongoing mutual engagement
3. CoP promotes active participation and critical reflection on practices and the theories that underlie them.
4. CoP facilitates conditions for open engagement with differences as well as common grounds
5. CoP creates context for richer learning and for fostering intersecting relationships

Conditions for CoP

It is however important to create conditions under which professionals take the responsibility for their own growth and transformation. Teachers thrive in a context that supports collaborative leaning and promotes the culture of critical inquiry. Professional growth is possible only in a context where practitioners can make conscious and reflective accounts of their experiences and challenges and engage in collaborative inquiry (Blackmore, 2010).

There should also be sense of mutual trust/obligation (mutually acknowledged obligations), shared identity (identification with a well defined domain), close relationships, and belonging. Learning requires an atmosphere of openness that promotes willingness to share ideas, expose one's ignorance, ask difficult questions, and listen carefully (Wenger, McDermott & Snyder (2002). The relationship should allow free communication and the development of a mutual understanding of their roles and expectations (Keppell, 2007).

In this regard, members of a community of practice should establish strong learning partnerships. Wenger (2010) considers a community of practice as a learning partnership and as a place where practitioners explore a social discipline of learning.

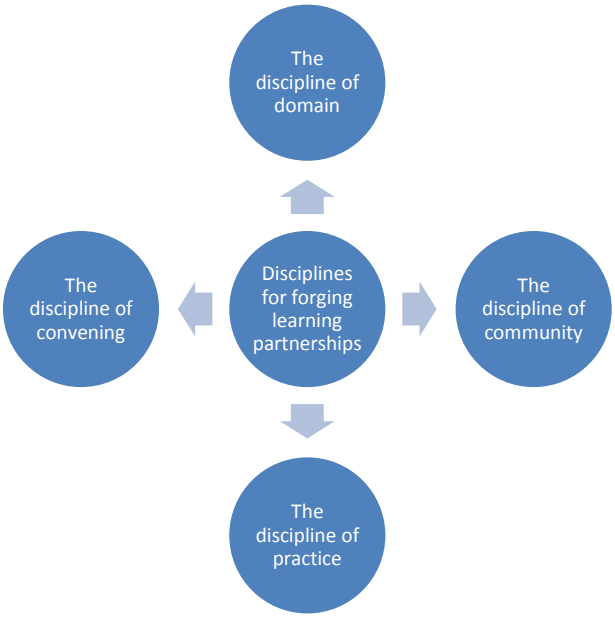

Figure 3. Conditions for Community of Practice

The discipline of domain: What is our partnership about? Why should we care? Are we likely to be useful to each other? What is our learning agenda? What specific set of issues does it entail?

• *The discipline of community*: Who should be at the table so the partnership can make progress? What effects will their participation have on the trust and dynamics of the group? How do we manage the boundaries of the community?

• *The discipline of practice*: How can the practice become the curriculum? How can it be made visible? What should participants do together to learn and benefit from the partnership?

• *The discipline of convening*: Who will take leadership in holding a social learning space for this partnership? How can we make sure that the partnership sustains a productive inquiry? Who are the external stakeholders and what are their roles? What resources are available to support the process?

CONCLUSIONS

The paper tried to indicate the importance of community of practice (CoP) and the fact that it is characterized by strong professional and emotional bonds between practitioners and their leaders. The paper stressed that CoP involves mutually interacting and goal-oriented professional learning practices and processes. Among these are professionals' engagement in collective enquiry and collaborative learning. The paper also discussed the implication of CoP for facilitating meaningful and potentially transformative professional practices. If properly planned and run, CoP can foster the effort to build university instructors professional competence and sense of professionalism. Towards the end, the paper outlined institutional, attitudinal and orientational variables that prevent CoP from becoming an effective source of

professional growth and what should be done to create and sustain CoP and to enable and empower university teachers to become informed and effective practitioners.

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