The Moderating Effect of ICT Skills on Relationship Between HRM Practices and Teacher Educator Development in Bangladesh

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Abstract

Teacher educator development (TED) through human resource management (HRM) practices has received a great deal of attention in the last two decades from the popular information and communication technology (ICT) experts and the human resource management practitioners. The purpose of the present study is to examine the effects of ICT skills as moderator in the relationship between HRM practices and teacher educator development in Bangladesh. Teacher educator development is claimed to be a new human resource development practice through selected human resource management practices (human resource development climate, performance appraisal, training, manpower planning and recruitment & selection) that teacher training college in Bangladesh can use in order to handle with the uncertainty of competitive educational conditions. Therefore, the concept requires rigorous seminal studies to validate it because it's a new idea in educator development. Given that practical use of ICT skills inside HRM practices and TED have outstripped the currently available research evidence, fundamental questions how and why the teacher educator and teacher training college benefited, still require answers. A total of 210-teacher educator from twenty one teacher training college in Bangladesh participated in this study. Data were collected through

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questionnaires. The Partial Least Squires approach to Structural Equation Modeling was the main statistical technique employed in the study. The findings of the study revealed that, as moderating variable ICT skills was found to have a significant effect on the relationship between HRM practices and TED. Consequently teacher training colleges should focus on ICT skills in order to make HRM practices more effective and productive in TED. Based on the findings, the implications as well as limitations and suggestion for further study were also discussed.

Introduction

A well-known teacher educator whose development is attractive to the student teacher is the best guarantee of success for the education field of any country (Ahmmed, Sharma & Deppeler, 2012). Hence, it is of great importance for the teacher training college to build and develop a strong teacher educator. But there continues to be an intense competition among the teacher training college for student admission and infrastructure development not teacher educator improvement, hence the education area becomes increasingly saturated. Human resource management (HRM) has offered a whole range of options for capacity building and training of teacher educators as its main focus is on integrated and holistic, mindful and practical approach to changing teaching related knowledge and behavior (Pounder, 2009 The use of information and communication technology (ICT) in Bangladeshi teacher training college is lagging behind expectation and desire. Redecker and Johannessen (2013) argue that the evaluation of ICT skills is deeply reshaping teacher educator's development, giving rise to new competence needs. The present study attempts to address this crucial gap between teacher educator development through the integration of ICT skills and HRM practices into teacher training college of Bangladesh context. Limited access of ICT tools and the lack of technological support teacher educator face a major problem between learning the approaches of incorporating ICT skills and its implementation in daily teacher training college activities. Human resource management practice has to obtain due significance in the country so that educational, social, economic and cultural cohesion could be generated for the growth of a better country (Chalofsky, 2007). Information and communication technology skills used as a tool to support the educational objectives, which are important for the preparation of student teacher for the knowledge society, including skills for searching and assessing information, cooperation, communication and problem solving. The ICT skills have focused especially on teacher educator development because they are responsible for the education of the student teachers of tomorrow. In teacher training college, ICT skills for teacher educator development distinguished the use of ICT skills as object of study, as aspect of a discipline or profession

and as medium for teaching and learning (Voogt, Knezek, Cox, Knezek & Brummelhuis, 2013). The use of ICT skills in teacher educator development as object refers to learning about information and communication technology, which enables educators to use ICT in their daily teaching and lifelong learning (Hauge, 2014; Livingstone, 2012).

There are about 135 private and public teacher-training colleges throughout the country. Very few initiatives implement for teacher educator's development through HRM practices and ICT skills. In fact, it is realized that the faster track of human resources development (HRD) in the field of education could be through different HRM practices (human resource development climate-HRDC, performance appraisal-PA, training-TR, manpower planning-MP and recruitment & selection-RS) for capacity enhancement of the existing teacher educators through ICT skills (Darling-Hammond, 2010). Even though the community of teacher educators represents a substantial number in the country but as the budgetary support is extremely low, it remains mostly ill organized and hence unable to deliver the expected standards of ICT tools (Iqbal & Sufiana, 2005). The objective of this study is to look at how teacher educators create themselves to utilize these antiquities to comprehend and bolster the development of their new educators as they endeavor to comprehend the complexities of HRM practices and as they take part in articulating their thoughts regarding ICT. Bangladesh has one of the weaker teacher educator development processes in the World. Sparkman (2015) thought that, human resource management is a concept that attracted worldwide attention and acquired a new character in the global education system and business. This has resulted in the call and urge for enhanced HRM practices and ICT skills to teacher training colleges and opened gateway for human resource improvement called HRD, which in fact allows teacher educator to take a role in the education area development in Bangladesh. Although computers have become available in Bangladeshi teacher training colleges, the use of ICT skills for learning purposes by teacher educators is still very limited (Scherer, Siddiq & Teo, 2015). A national survey on the implementation of ICT skills shows that very few number of teacher educator of these institutions are not positive about the value of ICT skills for education (Khan et al., 2012; Buabeng ,2012) and use ICT skills mainly to prepare lessons and to conduct administrational tasks. ICT skills is not just regarded as a skill, which can be added to or used as an important moderator to teacher educator development through HRM practices. Thus, ICT skills are seen as an important moderating variable to develop teacher educator's new ways of teaching and learning. The present research is therefore an attempt to find out the effects ICT skills as moderator inside HRM practices and teacher educator's development at teacher training college area.

Research Problem

The development of teacher educator across the country is the greatest challenge for teacher training colleges through HRM practices and ICT skills. Education institutes of different

developed countries are using many ICT tools to create teacher skills improvement and directly pursue students to receive education (Hauge, 2014; Livingstone, 2012). With the help of ICT skills educators teaching by adding good value. To develop teacher educator, a college can add ICT tools that teacher feel appropriate meaning of teaching and learning. Colleges receive the support of teaching activities like ICT skills into different types of ICT support tools to develop teacher educators (Khan et al., 2012; Buabeng , 2012). In this regard ICT skills is an essential factor for building teacher educator image. In teacher training college area, student teachers get information and learning about their education through ICT into different types of ICT application. From teacher educator development perspective, ICT skills highly contributes to the teacher educator which is the composition of HRDC, PA, TR, MP and RS in the teacher training college area (Livingstone, 2012; Al-Ruz & Khasawneh, 2011). Hence, ICT skills works as supporting moderator tool to strengthen TED by students regarding the appealing benefits and attributes of teacher training college. Empirical studies by Hauge (2014) and Livingstone (2012) found that, ICT plays important role for the development of teacher training college educators and also creates positive image in the mind of student teachers and authority of the college. Therefore, the present study proposes ICT skills as a moderator which is supposed to enhance TED by informing students regarding the benefits and services provided by the college.

Extensive research (Anctil et al., 2012; Vermunt & Endedijk,2011; Okurame, 2012; Zinser, 2003) have identified as a moderator ICT skills increase the effect of various HRM practices to teacher educator development. Yet scarce literature exists about the moderating factors that affect through such skills and planning in teacher training colleges in Bangladesh. This study aims to fill this gap. There is a need to focus on ICT skills as moderating variable in order to fully understand and appreciate the dynamics of HRM practices in enhancing academic knowledge and simultaneously affect teacher educator's teaching behavior (Institute of International Education, 2013). Thus, studying ICT skills as moderating work as an expansion to teacher educator knowledge development will be capable of conferring unique advantages of HRM practices for education diverse (Al-Ruz & Khasawneh, 2011). Catterick (2007) examined moderating factors and its influences on HRM practices towards TED and proposed ICT skills as influencer of determinants of TED to assess its strategic impact. Carpenter and Linton (2016) conducted a research on the importance of identifying, understanding and managing moderating effects of ICT skills in the context of teacher development. They recommended further exploring additional ICT skills as important moderator to enhance its effects in teacher training colleges.

According to Harvey and Knight (1996), there is a need to prove categorically ICT skills is correlated to teacher educator development image so as to convince teacher training colleges about the potential benefits not just for educator but also for the teacher education colleges in the long run. With reference to, the problem statement and literature review the issues and

problems were identified. Khan, Hossain, Hasan and Clement (2012) mention that, most research on ICT skills and HRM practices on teacher education sector in Bangladesh is conducted based on scenario analysis, hypothetical settings or the use of fictitious scenarios. The use of teacher educators samples within the teacher training colleges where the researchers were most likely employed in the same institutes and biased and giving rise to issues of external validity. Khan et al. (2012) revealed that there is a lack of understanding about the ICT skills where HRM affects to teacher educator development. The use of ICT in Bangladeshi teacher training college is lagging behind expectation and desire. Buabeng (2012) argue that, the evaluation of ICT skills is deeply reshaping teacher educator's development, giving rise to new competence needs. The present study attempts to address this crucial gap between teacher educator development through the integration of ICT skills and HRM practices (HRDC, PA, TR, MP and RS) into teacher training college of Bangladesh context. Ahsan, Sharma and Deppeler (2012) told that, very few research of the moderating effect of ICT skills and HRM practices on education sector in Bangladesh have done, but most of HRM related research in Bangladesh suffered from the limitations of samples and being overly concentrated in the capital city only. No study sufficiently covers whole nation. The use of secondary data sources making references from ranking articles, journals, PhD thesis, conference papers from home and abroad. More specifically, this study seeks to answer the following questions:

1. Does ICT skills effect as moderator in human resource development climate and teacher educator development?
2. Does ICT skills effect as moderator in performance appraisal and teacher educator development?
3. Does ICT skills effect as moderator in training and teacher educator development?
4. Does ICT skills effect as moderator in recruitment & selection and teacher educator development?
5. Does ICT skills effect as moderator in manpower planning and teacher educator development?

Literature Review

XInformation and Communication Technology (ICT) skills

The utilization of information and communication technology (ICT) as perspective alludes to the improvement of information and communication technology aptitudes for proficient and professional reasons. The educator colleges need to teach their understudies in the utilization of ICT claims utilized as a part of essential training. The utilization of information and communication technology as intermediate concentrates on the utilization of ICT for the improvement of the learning procedure of understudies. By methods for ICT, understudies can accomplish their studying objectives all the extra adequately. Inside instructor training,

present is cover among the utilization of ICT as viewpoint and as an intermediate. A teacher educator, who utilizes information and communication technology for the upgrade of the knowledge procedure of educator understudies, additionally indicates understudies in the meantime how ICT can be utilized as a part of essential training.In view of the part the colleges are required to satisfy, it is essential so as to an educator gives his understudies (prospect essential plus optional educators) through 'great' illustrations. Information and communication technology is not simply viewed as an instrument, which be able to be additional to or utilized as a substitution of existing teaching techniques. Information and communication technology is viewed as a critical instrument to help better approaches for educating and learning. Information and communication technology ought to be utilized to build up understudy's aptitudes for communications, correspondence, critical thinking and long lasting knowledge (Voogt et al., 2013).

However, just not very few numbers of the teacher utilize ICT tools frequently in their courses. These educators utilize ICT skills for the most part to get ready sessions and to lead administration assignments. A small number of teacher educators acquaint understudies with the instructive programming accessible for essential and optional development. Understudies themselves are grumbling about their absence of information concerning the conceivable outcomes to utilize ICT as a device to help better approaches for learning. The greater part of the teacher training colleges appear to be in a period of the claimed "first request change" (McDougall et al., 2010); educator developing institutes have concentrated principally on top of the organization that is required intended for the alter (usage of ICT) however the education plans and performance methods still stay unaffected.There is assuring crates of ICT skills use with the help of new learning diversion plans (Voogt, Knezek, Knezek & Ten Brummelhuis, 2013). So, why the utilization of information and communication technology by these educators is unmoving exceptionally incomplete, in spite of legislative support, the accessible foundation and inspirational mind of educators? Utilizing the information and communication technology skills, this learns investigates issues and circumstances so as to be vital for the enlightening operation of information and communication technology by Bangladeshi teacher educator. This exploration concentrates particularly on top of the "inventive ICT aptitudes" use by teacher educators. Creative information and communication technology skills imply so as to technology is utilized as an apparatus to help student teachers, that are essential intended for the arrangement of young teachers designed for the learning civilization, as well as skills for looking with evaluating data, participation, correspondence and critical thinking.

In previous twenty years, the usage of ICT skills in teaching has turned into an imperative point in examine on educational change. Majority of the investigation on the usage of communication technology skills in college is focusing on issues, which affect the utilization

of information and communication technology as a rule. It is commonly predictable that the utilize of information and communication technology will prompt modifies in learning plans and showing strategies yet issues impacting creative information and communication technology utilization not specifically examined (Valtonen et al., 2015). The study on top of the execution of information and communication technology, by and large, demonstrates which it includes a substantial figure of impacting issues (Ten Brummelhuis, 2008; Wastiau et al., 2013). A few assessment thinks about having delivered a broad diagram of affecting elements and circumstances for the execution of information and communication technology (Vanderlinde, Aesaert & Van Braak, 2014). In these diagrams, a modification is able to be completed among non-manipulative and manipulative college and educator issues. Non-manipulative elements are issues, which cannot exist affected straightforwardly by the college, similar to period, showing background, (instructive) personal computer skill of the educator or government rule in addition to the accessibility of superficial help for teacher training colleges. Example of manipulative variables is condition of mind of educators in the direction of education and information and communication technology, information and communication technology skills as well as attitudes of educators, the responsibility of the teacher training college on the way to the practice, procedure and accessibility of information and communication technology hold.

Studies on top of the practice of ICT in teacher training colleges have additionally demonstrated that these colleges as well as educator development issues are connected (Wastiau et al., 2013; Ten Brummelhuis, 2008). The accomplishment of the procedure of communication technology is not subject to the accessibility or nonappearance of one individual factor, however, is resolved in an active procedure including an arrangement of interrelated components. Ten Brummelhuis (2008) built up a model in which requirement is completed amongst manipulative and non-manipulative elements. Utilizing basic condition demonstrating, he, not just distinguished elements clarifying the level of personal computer utilizes yet, in addition, their consistent. For instance, he established so as to the execution of ICT in college or any education institute was not exclusively dictated by help exercises on also nationwide stage or college height, however, is best while outside help fortifies college exercises. Inside this model, qualification is completed between exogenous (non-manipulative) features and endogenous (manipulative) features on top of each discipline or the instructor stage. The usage result is the needy variable inside this system and alludes to the original utilization of information and communication technology skills through teachers. An impression of the issues stated within the evaluation study, is presented in following figure. Inside this figure, these features are categorized in exogenous and endogenous features on college or teacher level. In this table, these variables are classified in exogenous and endogenous factors on college and educator level and the innovative use of information and

communication technology. In this investigation, survey thinks about on the employ of information and communication technology skills by instructor teachers were developed for distinguishing evidence of significant variables to be incorporated and prepared in a designed model (figure 1). The model is to an enormous amount enlarge on the arrangement of Ten Brummelhuis.
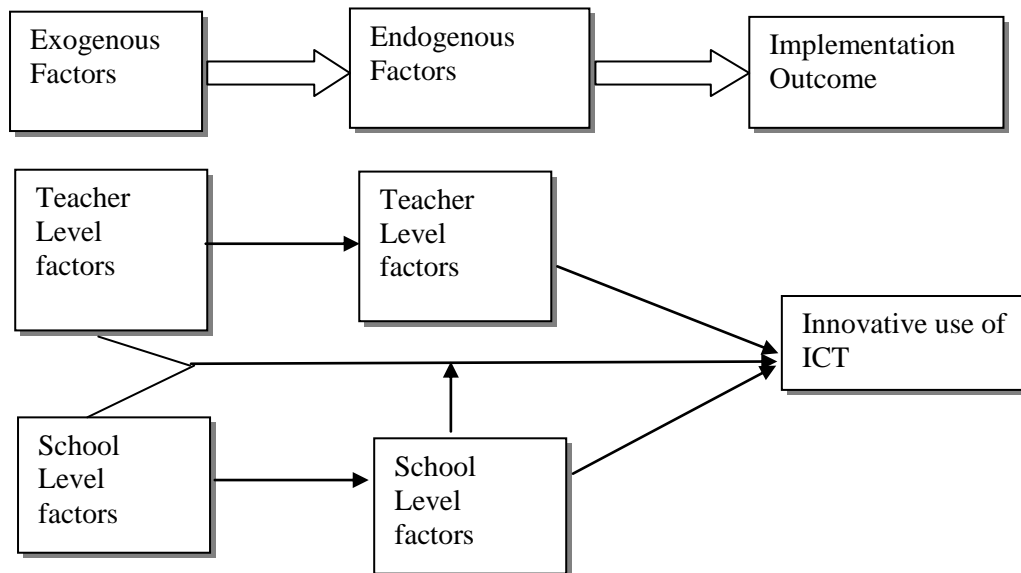

Figure 1: ICT model (adopted by Ten Brummelhuis 2008).

Since the mid-2010s, Bangladesh government has given educator preparing foundations teacher education institutes to assume a spearheading part within the combine of ICT in teaching. The legislatures' arrangements have focused particularly on educators colleges since in charge of the training of the educators of future. Educators must have the capacity on the way to get ready youngsters intended for the learning society during which the capability to use information and communication technology to obtain and procedure data is imperative (Ministry of Education Bangladesh, 2011). Intended for the majority part, three destinations are recognized for the utilization of information and communication technology in education (Virman & Rao, 2011): the operation of ICT as a question of learning, the utilization of communication technology as a division of a teach or profession; and the utilization of ICT as an intermediate for educating and knowledge. The utilization of information and communication technology skills in college since complaint alludes to finding out concerning data and correspondence innovation that empowers student teachers toward utilization of information and communication technology inside everyday existence. Despite the fact that personal computers have turned out to be generally accessible in Bangladesh teacher training organizations, the utilization of information and communication technology for education

reasons by educator is still exceptionally restricted (Ten Brummelhuis, 2001; Virman & Rao, 2011). A nationwide overview on top of the execution of information and communication technology demonstrates that very little number of the educators of these foundations is extremely constructive about the belief of information and communication technology for development in teaching (Ten Brummelhuis, 2001).

ICT skills in Teacher Educator Development and HRM Practices

The existing literature on ICT skills use in teacher training colleges shows the positive impact of ICT skills on teacher educator development practice given the right conditions. Teacher educator can learn from others' experience how to use ICT skills and HRM practices to change and develop their professional life. HRM practices through ICT skills enhance teaching and learning process by increasing educators' development. The use of ICT in teacher training college helps in the explanation of difficult concepts, so educators' are able to easily under-stand those concepts. The integration of HRM practices and ICT skills in teacher training college can takes several forms such as information and computer networks, digital content, internet sites, multimedia and others. Many studies have confirmed the importance of ICT skills in teaching and learning processes in teacher training college of Bangladesh. Crittenden (2009) asserted that the ICT skills use by teacher educators is to transmit, store, create, share or exchange information by various technologies such as radio, television, video, DVD, telephone, satellite systems, computers and the internet. Previous literatures on teacher educators' development and ICT skills in the teacher training college (Cavas et al., 2009; Tezci, 2009; Drent and Meelisen, 2008) have shown that there are significant positive relationships between teacher educators' development and use of ICT skills and HRM practices. Studies (Voogt, 2011; Inan and Lowther, 2010) have shown that ICT skills are especially important for effective development of teacher educators by integration of HRM practices in the teacher training college of Bangladesh.

The direct link between HRM practices, ICT skills and teacher educators' development has been focus of extensive literature during the last two decades. Several studies have tried to explain the role and the added value of these HRM practices and technologies in teacher training college and on teacher educator's development (Kartik and Coban, 2008). Some studies show a real impact of ICT skills on educators' development in teacher training college (Fushs and Wossman, 2004; Talley, 2005; Coates et al., 2004). Wosman (2011) showed that while the bivariate correlation between the HRM practices, ICT skills and educators' development is strongly and significantly positive. The most obvious use of ICT skills in the classroom of teacher training college is to prepare students teacher for the increasingly technological world they will face when they leave teacher training college and the other is to use ICT in teaching and learning activities in other subjects. Davis and Tearle (2006) state that there is a widespread acknowledgement that HRM practices and ICT skills can be used to enhance learning and teaching of teacher educator. As a learning tool, HRM practices and

ICT skills gives some good opportunities in terms of the learning efficiency and quality. It provides opportunities for greater flexibility, interactivity and accessibility for engaging teaching and learning of teacher educators at the individual, community, and societal levels. Many studies shows that ICT skills use for teacher educator development in teacher training college is still insufficient and disappointing. Most of the studies show that there is a vicious circle in the process of integrating ICT skills and HRM practices into teacher training college because of the barriers to this challenging innovation. Some important factors are affect to the implementation process of integrating HRM practices and ICT skills into teacher educator development. Teacher educator development has been slow to respond to the changes in teacher training colleges in relation to the use of new technologies and HRM practices.

However, it is evident that the integration of HRM practices and ICT skills in teacher educator's practice provides development for teacher educator (Brown, 2012). Integrating of HRM practices and ICT skills for teacher educator development is the only option to succeed long run innovation in teacher training college of Bangladesh (Rahman, 2014). The development trend in education call for innovative approach in perfect education delivery as a strategy to gain competitive advantages of teacher educator development over other competing alternatives. Hennessy et al. (2015) identified new approaches as ICT skills concepts which are relatively new in research parlance but have potential to expand and contribute to the perception of HRM practices in teacher educator development. Therefore, there is a need for colleges to understand the factors that contribute to greater vicinity and understanding of what influences educators. Perception about HRM practices they receive and thus able to influence and achieve better experiences and higher development rates among teacher educators . ICT skills appears as emerging concepts that have many opportunities, as it is considered as a potential source of development advantage for teacher training colleges. Peeraer and Van (2011) highlights in their recent publication the importance that the ICT knowledge can have on education as it may be a unique competitive strategy. It is implies that colleges resources only become valuable when access by educator through their service participation with student teachers determine the value rather than the institute (Roeser, Skinner, Beers & Jennings, 2012).

Extent literatures argued that improving and sustaining teacher educator development is a biggest challenge in teacher training colleges (Rousseau & Fried, 2001). To mitigate this challenge studies on attitudes, career planning, ICT skills in an argument is being conducted by Secer (2010). Notwithstanding educator, development is attained when ICT skills crystallized other determinants (Peeraer & Van, 2011). Therefore, among HRM practices and teacher educator development, ICT skills work as innovative strategy which increase educator development and values of the teacher training college? The study conducted by Smith (2010) on human resource modeling of ICT skills and its influence on educator development satisfaction towards teacher training colleges used satisfaction as mediator. Also Tondeur et al. (2012) reported that, ICT skills have strategic impact on the ability to predict teacher

educator development. ICT skills thus reflects active participation, attachments to, identification with and involvement in an institute. In educator development context this active involvements act as a bonding force between HRM practices and teacher educator development. Some controversial results from theories encourage more research on the status of ICT skills in the model. Most studies that found positive relationships established direct link. While other studies that found positive relationship recommended as moderator. Moderator in a relationship has the ability to enhance the weight and direction between exogenous and endogenous variables (Voogt, Knezek, Cox, Knezek & Brummelhuis, 2013).Therefore, ICT skills has included in this research model as moderator between the HRM practices and development of teacher educator to establish its strength and weight in the relationship due to inconsistencies in the previous research.

Based on the extensive literatures reviewed the researcher identified five independent variables (IVs) that are the major HRM practices as it affects teacher educator development. Accordingly these independent variables are: (1) human resource development climate, (2) performance appraisal, (3) training, (4) manpower planning and (5) recruitment & selection. On the other hand, the dependent variable (DV) of the study is teacher educator development (TED) and as moderating variable (MV) ICT skills has proposed to have effects of the relationship between IVs and DV.

In line with the research objectives and literature review, the following research framework and hypotheses were developed for the study.

HRM Practices
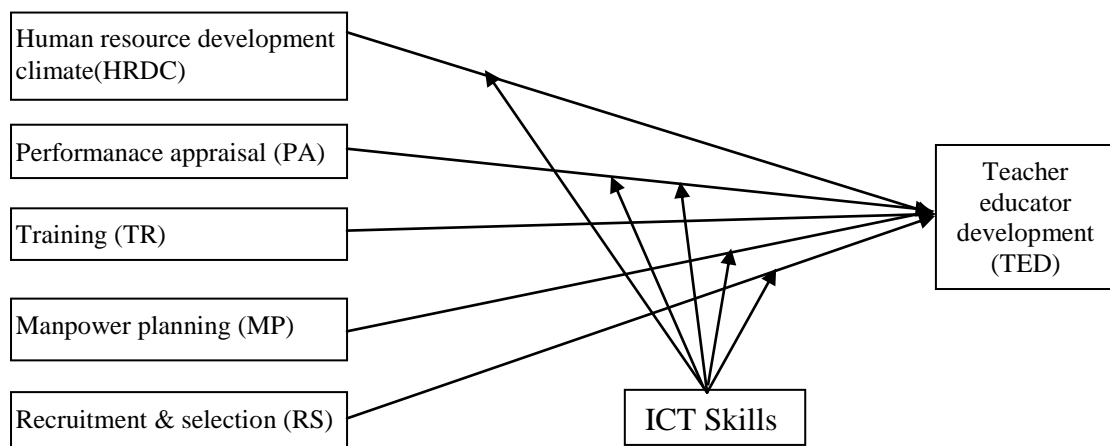
Figure 2: Research Framework of the Study

H1: ICT skills moderate the relationship between HRD climate and teacher educator development.

H2: ICT skills moderate the relationship between performance appraisal and teacher educator development.

H3: ICT skills moderate the relationship between training and teacher educator development.

H4: ICT skills moderate the relationship between manpower planning and teacher educator development.

H5: ICT skills moderate the relationship between recruitment & selection and teacher educator development.

Methods

Population and Sample

According to Sekaran and Bougie (2013), the population of a study refers to an entire group of people or objects of interest that a researcher intends to investigate through the use of its subset commonly known as sample. The population of the study comprises all active teacher educators in 21 private and public teacher-training colleges in thrice-bigger division of Bangladesh. Following table 1 depicts the summery of entire population of this study:

Table 1: Sample size from three divisions

SLN o.	Name of Divisions	No. of Teacher training college	No. of Teacher training college considered	No. of respondents of each total	Total Sample size
1	Dhaka	31	7	10	70
2	Rajshahi	19	7	10	70
3	Chittagong	25	7	10	70

Measures

In this study researcher used quantitative research method and adopted multistage sampling for data collection. The collected data have been measured and analyzed using PLS-SEM technique to investigate the relationships between variables. After analyzing the data, the findings of PLS measurement and structural equation models have been documented sequentially. The measures used to understudy six variables in this study through the descriptive statistics analysis, convergent validity analysis, discriminant validity, coefficient

of determination, structural model assessment for hypotheses testing, reliability and validity analysis. The results measured and obtained from smart PLS-SEM 2.0 software.

Results

Profile of Sample

Table 2 presents profile of respondents. Respondents were comprised of 21 teacher-training colleges of thrice bigger and leading divisions in Bangladesh, bringing the total sample size to 210 respondents to make a valuable and reliable contribution to this study.

Table 2: Profile of Respondents (in detail)

Sl No.	Name of teacher training colleges	Name of Divisions	No. of Teacher Educator	Sample size	Sl No.	Name of teacher training colleges	Name of Divisions	No. of Teacher Educator	Sample size
1	Bangladesh Teacher's Training College	Dhaka	21	10	12	Rajshahi Teacher's Training college	Rajshahi	24	10
2	Biam Teacher's Training College	Dhaka	15	10	13	Uttarbango Teacher Training College	Rajshahi	17	10
3	Sher-E-Bangla Tracher's Training College	Dhaka	16	10	14	Sirajganj Teacher's Training College	Rajshahi	18	10
4	Dhaka Metropolitan Teacher's Training College	Dhaka	15	10	15	REMA Teacher Training College	Chittagong	18	10
5	Faridpur Teacher Training College	Dhaka	23	10	16	Modern Teacher's Training College	Chittagong	19	10
6	Ideal Teacher's Training College	Dhaka	15	10	17	Parash-Pathor Teacher's Training College	Chittagong	16	10
7	Teachers' Training College Dhaka	Dhaka	21	10	18	Bangladesh Institute Of Teacher's Training College	Chittagong	21	10
8	Pabna Government Teacher Training College	Rajshahi	23	10	19	Comilla Teacher Training College	Chittagong	18	10
9	Adorso Teacher's Training College	Rajshahi	17	10	20	Govt. Teacher's Training College	Chittagong	23	10
10	Natore Teacher's Training College	Rajshahi	15	10	21	Mainamoti Teacher's Training College, Comilla	Chittagong	22	10
11	Progressive Teacher's Training College	Rajshahi	19	10				**Total**	**210**

Source: National University report ,2015

The respondents have been included those who teaches to the student teachers in teacher training colleges and have included those teacher educators from 25 years and above 46 years of age without any discriminations in terms of academic education, experience, level of teaching, gender, status of employment. This is so as most teacher educator in this age group would have already started working in the teacher training colleges of Bangladesh.

Descriptive Statistics Analysis

The present study collected all the responses with a five point likert scale ranging from 1 for strongly disagree to 5 for strongly agree. Table 3 shows the descriptive statistics of the variables used in this study. The statistics include minimum and maximum value, mean and

standard deviation of the research variables, which are human resource development climate, performance appraisal, training, manpower planning, recruitment & selection, ICT skills and teacher educator development.

Table 3: Descriptive statistics of variables

Variables	Mean	Standard deviation	Maximum value	Minimum value
Human Resource Development Climate (HRDC)	3.699	0.632	**5**	**1**
Performance Appraisal (PA)	3.858	0.515	5	2
Training (TR)	3.732	0.591	5	1
Manpower Planning (MP)	3.700	0.621	5	2
Recruitment & Selection (RS)	3.762	0.538	5	2
ICT skills	3.355	0.368	5	2
Teacher Educator Development (TED)	3.686	0.504	5	1

The descriptive statistics shown in table 3 represent that all the variables have got a maximum response of 5 and in the case of minimum response, human resource development climate, training, career planning and teacher educator development have got a minimum response of 1; and performance appraisal, manpower planning, recruitment & selection and ICT skills have got a minimum response of 2. The average answer is depicted in the mean column whereby the mean value for human resource development climate (HRDC) is 3.699; performance appraisal (PA) is 3.858; training (TR) is 3.732; manpower planning (MP) is 3.700; recruitment & selection (RS) is 3.762; ICT skills is 3.355 and teacher educator development (TED) is 3.686. So all the means are above 3 and close to 4. Variability on the other hand, can be assessed by examining the values of the standard deviation column whereby it measures the amount of variability in the distribution of a particular variable. From the table 3, the standard deviation for all the variables is below 1. Based on the results obtained, the standard deviations for all the variables are relatively small which further indicates that a great deal of similarity exists between data points.

Reliability Test

Reliability refers to the internal consistency of data (Hair et al., 2014). Cronbach's alpha and Composite reliability values are used to assess reliability of constructs. For reliability, all constructs should have Cronbach alpha values above the threshold of 0.70 (Hair et al., 2014) and the composite reliability values of the all constructs should be greater than the threshold of 0.70 (Bagozzi & Yi, 1988). As shown in table 4, all the Cronbach alpha and composite reliability values are above 0.70 which indicates good internal consistency of data (Hair et al., 2014) and the reliability of all constructs are established in this study.

Table 4: Measurement properties of constructs

Variables	Items	Loadings	Cronbach alpha	Composite Reliability	Average Variance Extracted(AVE)
Human Resource Development Climate (HRDC)	H2	0.738	0.863	0.889	0.503
	H3	0.690			
	H4	0.651			
	H5	0.664			
	H6	0.618			
	H7	0.665			
	H9	0.779			
	H10	0.841			
Performance Appraisal (PA)	PA1	0.715	0.836	0.874	0.568
	PA2	0.749			
	PA3	0.702			
	PA4	0.725			
	PA5	0.695			
	PA6	0.573			
	PA7	0.703			
	PA8	0.591			
Training (TR)	T1	0.612	0.869	0.895	0.589
	T2	0.775			
	T3	0.732			
	T4	0.726			
	T5	0.708			
	T6	0.573			
	T7	0.685			
	T9	0.729			
	T10	0.733			
Manpower Planning (MP)	MP1	0.903	0.843	0.893	0.633
	MP2	0.659			
	MP3	0.579			
	MP4	0.899			
	MP5	0.881			
Recruitment & Selection (RS)	RS1	0.900	0.947	0.950	0.795
	RS2	0.922			
	RS3	0.827			
	RS4	0.902			
	RS5	0.905			
ICT skills	ICT1	0.659	0.832	0.854	0.552
	ICT2	0.704			
	ICT3	0.644			
	ICT4	0.661			
	ICT5	0.607			
Teacher Educator Development (TED)	TED1	0.566	0.824	0.864771	0.517
	TED2	0.744			
	TED3	0.695			
	TED4	0.598			
	TED5	0.606			
	TED6	0.575			
	TED7	0.666			
	TED8	0.657			
	TED9	0.685			
	TED10	0.903			

Convergent Validity

Convergent validity involves the degree to which individual items reflect a construct converging in comparison to items measuring different constructs (Urbach & Ahlemann, 2010). Convergent validity is established when all constructs have an average variance extracted (AVE) value greater than 0.50 (Fornell & Larcker, 1981). As shown in table 4, all the values of AVEs are above 0.50, which confirms the convergent validity of constructs. The absolute standardized outer loadings of items are above 0.50. Chin (1998) believes that, loadings below 0.5 still are acceptable if there exists other indicators in the block for comparison. Hair et al., (2014) suggested that an item loading of 0.40 could be acceptable if the AVE of a particular construct exceeds the cut off value of 0.50. Table 4 shows that all the item loadings are higher than 0.50 and also the items are significant which confirms convergent validity at indicator level. Therefore, 0.50 and above AVE values of all the constructs and, 0.50 and above values of item loading confirm the convergent validity of constructs in this study.

Discriminant Validity

Discriminant validity is established when the indicators loadings on their measured construct are all higher than the cross-loadings on other constructs and the square root of each construct's average variance extracted (AVE) is larger than its correlations with other constructs
(Chin, 1998).

Table 5: Discriminant validity assessment

	HRDC	ICT	MP	PA	RS	TED	TR
HRDC	0.709						
ICT	0.046	0.742					
MP	0.272	0.043	0.795				
PA	0.157	0.004	0.106	0.753			
RS	0.072	0.098	0.080	0.038	0.891		
TED	0.415	0.267	0.604	0.230	0.338	0.719	
TR	0.261	0.047	0.581	0.162	0.332	0.547	0.767

*Square root of the AVE on the diagonal

The square root of the AVE of each construct was compared with the correlation between that construct and the other constructs. As shown in table 5, the square root of the AVEs exceeds the highest correlation between that construct and the other constructs, providing another support of discriminant validity (Chin 1998; Fornell & Larcker, 1981) of the constructs in this study.

Moderating Effect of ICT Skills

A moderator is assumed the third variable that changes the relationships between the independents and dependent variable. The present study is designed to test the moderating effect of ICT skill in the relationship between human resource development practices (human resource development climate, performance appraisal, training, manpower planning and recruitment & selection) and teacher educator development. The next section presents the moderating effect test findings. To test the interaction of ICT Skills, bootstrapping procedure was carried out in smart PLS with a sample of five thousand (5000). The findings are as follows in table 6:

Table 6: Moderating effect of ICT skills

Hypothesized path	Path coefficient	Standard error	T value	P value	Decision
ICT*HRDC->TED	0.734	0.349	3.652	0.000	Supported
ICT*PA->TED	0.228	0.264	0.864	0.388	Not Supported
ICT*TR-> TED	1.039	0.499	2.079	0.038	Supported
ICT*MP-> TED	0.986	0.606	2.627	0.009	Supported
ICT*RS-> TED	0.025	0.440	0.758	0.224	Not Supported

H1: The moderating role of ICT skills on the relationship between human resource development climate and teacher educator development. ICT skill is proposed to positively moderate the relationship between human resource development climate and teacher educator development. To assess this moderation effect, the interaction effect of human resource development climate* ICT skill is added to the model. The path coefficient of interaction effect is 0.734 (Table 6) with a t value of 3.652 (Figure 4) which is significant at 1 percent level (p<0.01). This suggests that ICT skills positively and significantly moderate the relationship between human resource development climate and teacher educator development. Thus, H6a is supported. To confirm this result, a graphical impact of this moderation effect was tasted. Figure 2 illustrated the plotted graph used for analyzing the moderating effect of ICT skills on the relationship between human resource development climate and TED.
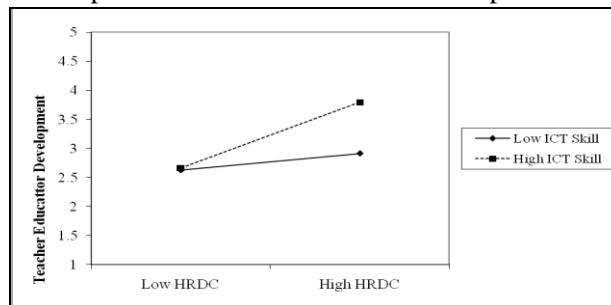

Figure 3: Moderating effect of ICT skills on HRDC-TED relationship

H2: The moderating role of ICT skills on the relationship between performance appraisal and teacher educator development. ICT skill is proposed to moderate the relationship between performance appraisal and teacher educator development. It is seen from the Table 6 that, the path coefficient of the interaction effect of performance appraisal and ICT skills on teacher educator development is 0.228 with t value of 0.864. Here the path coefficient is not significant (p>0.05) and this suggests that ICT skills does not have any moderating effect in the relationship between performance appraisal and teacher educator development. Thus, H6b is not supported.
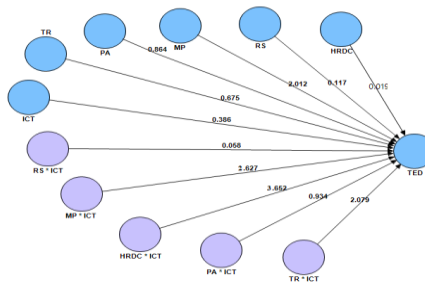

Figure 4: Moderating effect of ICT skills

H3: The moderating role of ICT skills on the relationship between training and teacher educator development. Table 6 shows that the path coefficient of the interaction effect of training and ICT skills on teacher educator development is 1.039 and t value is 2.079; this value is significant at 5 percent level (p<0.05). This suggests that ICT skills positively and significantly moderate the relationship between training and teacher educator development. Thus, H6c is supported. To confirm this result, a graphical impact of this moderation effect was tasted. Figure 5 illustrated the plotted graph used for analyzing the moderating effect of ICT skills on the relationship between training and TED.
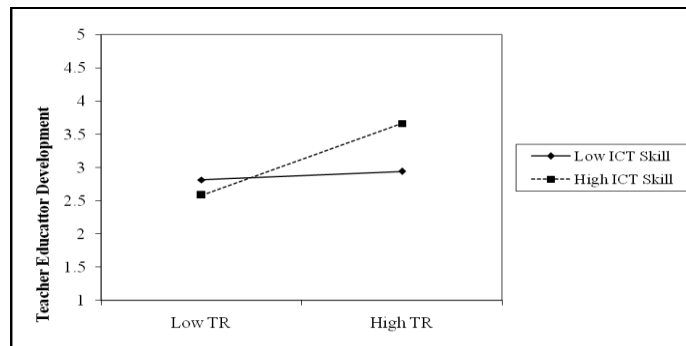

Figure 5: Moderating effect of ICT skills on TR-TED relationship

H4: The moderating role of ICT skills on the relationship between manpower planning and teacher educator development. ICT skills is proposed to moderate the relationship between manpower planning and teacher educator development. To assess this moderation effect, the interaction term manpower planning* ICT skills is added to the model. The path coefficient of interaction term (manpower planning * ICT skill) is 0.986 and the t value is 2.627 which is significant (p<0.01).

Therefore, ICT skills positively and significantly moderate the relationship between manpower planning and teacher educator development. Thus, H6d is supported. To confirm this result, a graphical impact of this moderation effect was tasted. Figure 6 illustrated the plotted graph used for analyzing the moderating effect of ICT skills on the relationship between manpower planning and TED.
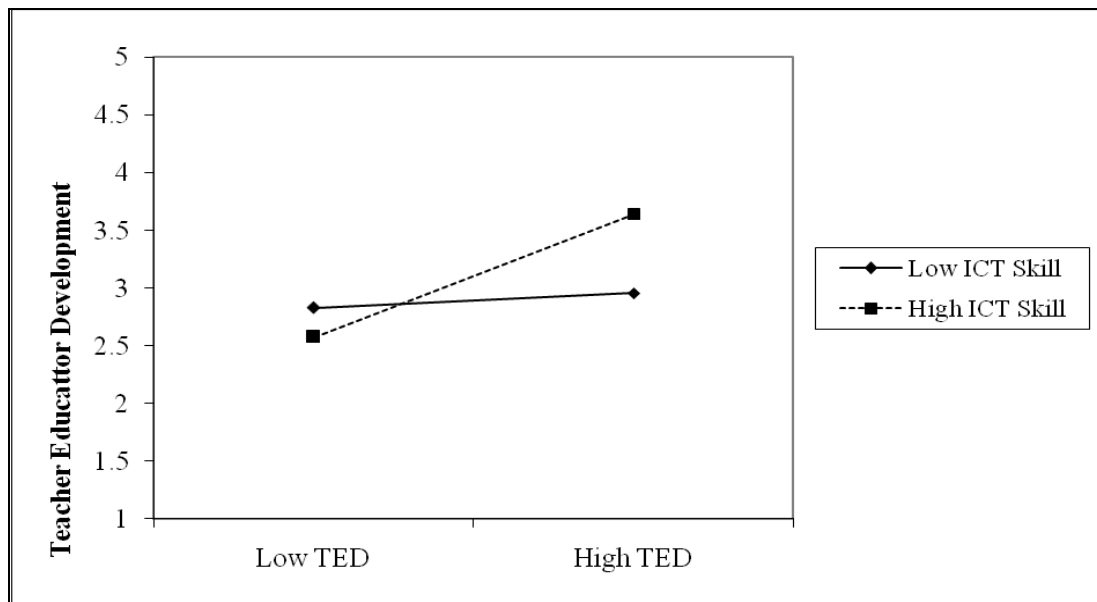

Figure 6: Moderating effect of ICT skills on MP-TED relationship

H5: The moderating role of ICT skills on the relationship between recruitment & selection and teacher educator development. This hypothesis is not supported because the path coefficient of interaction effect of recruitment & selection and ICT skills on teacher educator development is 0.025 with a t value of 0.758 and this value is not significant at 5 percent level (p,>0.05). This suggests that ICT skills do not have significant moderating effect in the relationship between recruitment & selection and teacher educator development. Thus, H6e is not supported.

Having presented all the results including main moderating effects in the earlier sections, the summary of the entire results of all the hypotheses testing is reproduced in Table 7 below:

Table 7: Summary of hypotheses testing findings

Hypotheses	Descriptions	Comments
Hypothesis 1	ICT skills moderate the relationship between HRD climate and teacher educator development.	Supported
Hypothesis 2	ICT skills moderate the relationship between performance appraisal and teacher educator development.	Not Supported
Hypothesis 3	ICT skills moderate the relationship between training and teacher educator development.	Supported
Hypothesis 4	ICT skills moderate the relationship between manpower planning and teacher educator development	Supported
Hypothesis 5	ICT skills moderate the relationship between recruitment & selection and teacher educator development.	Not Supported

Discussion

The findings highlighted earlier leads to several implications. In the earlier part, the results of this study highlighted the impact of ICT skills on the relationship between HRM practices (HRDC, PA,TR,MP and RS) and teacher educator development (TED) in the Bangladeshi teacher training colleges. The study is presented in line with the research questions and hypotheses. The findings of this study have some significant contributions both to the theoretical and practical implications. The discussion on the first part of this section emphasized on the theoretical implications where as the second part of this section discussed the practical implications in detail.This study contributes new knowledge to the body of research primarily with the presence of ICT skills and career planning in the relationship between HRM practices (HRDC, PA, TR, MP and RS) and teacher educator development (TED) which is little known thus far.

Initially comprehensive literature review has guided the development of the research framework of HRM practices and TED and the interacting effect of ICT skills and career planning. This effort has provided some contributions to enhance the literature on TED in the Bangladeshi teacher training colleges and higher educational institutions. Besides this study offers an insight into the teacher training colleges of Bangladesh, where most of the previous

studies on TED were conducted in other educational areas such as universities, general colleges, high schools in western environment (Hoque et al., 2011; Fahmi, 2008). The results obtained have contributed empirical evidence to the research framework and enriched the conceptual model in Bangladeshi teacher training college environment.

Another novelty of this study is that, it has explored significant moderator namely information and communication technology (ICT) skills which has been found to strengthen the relationship between the HRM practices and TED. Through this study, it is established now in the TED literature that ICT skills along with different attributes of teacher educator might play vital roles in building strong TED. Therefore, the value of this study lies in its depth discussion of the relative influence of the indirect experiences generated by ICT skills on TED image. The respondents of this study agreed that proper career planning along with the distinctive attributes of teacher training college contributes to the enhancement of TED. Therefore, this finding from the actual teacher educator of teacher training colleges contributes to the understanding of the teacher educator based development. The proposed framework suggests that ICT skills as a digital communication tool plays vital role in developing teacher educator by informing the teacher and students regarding the benefits of teaching and learning of colleges. On the other hand, better career planning can be an important practice for developing teacher educator for the teacher training college as well as whole education areas.

Finally, this study contributes to both academic and practitioners individuals in the teacher training and education field of Bangladesh. The findings may have some policy implications about the effects of HRM practices on teacher educator development and government policy, teacher educator with increased development will be loyal to the teacher training college and perform their teaching service well.This study implies that, when HRM practices are truly implemented with college rules, the educator development will be sustained. Thus, this improved teacher educator will enhance the structure of TED and consequently lead into an improved education system of the country in the long run.

Limitations of the Study

This study is not without limitations and these limitations must be taken into consideration when explaining its results. Dilon (2012) claimed that, the strength of any study is to recognize its limitations. While this study shows moderating effects of ICT skills between HRM practices and teacher educator development and makes some contributions to the knowledge body of HRM, it has several limitations that need to be addressed. The limitations of the current study could be discussed from few perspectives.Firstly, one of the limitations of the current study is that, it is dependent on some selected HRM practices to examine its

effects on teacher educator development. Second limitation is the use of self- report measure. Self-report measure is beneficial to the researcher as it saves time but this approach raises common source of producing inflated variance among variables of interest (Podsakoff, Mackenzic & Podsakoff, 2003). Thirdly, the generalization of the study may be questioned because of the nature of the selected sample. Samples were obtained from the three divisions of Bangladesh only and did not include teacher training colleges of other divisions.Fourthly, the sample consists of teacher educators only no other staff, management,student teachers and controlling authorities. Fifthly, the current study has designed a questionnaire and employed mainly quantitative method as the main research methodology to validate results.

Suggestions for Future Study

The present study has found that as a moderator ICT skills has significant effects in HRM practices (HRDC, PA, TR, MP and RS) have on teacher educator development (TED). This present study introduced invaluable insights into the HRM practices and effects of ICT skills on TED in the context of teacher training colleges in Bangladesh. This study offered new knowledge relating to ICT skills, HRM practices and TED discipline in teacher training colleges in Bangladesh. Nevertheless, although the results of this study presented a new measurement represented by ICT skills as moderating variable, there is a need for more research to confirm these results in other contexts. Thus, for future research there is a need to examine whether the same results can be achieved by examining these variables in different countries that have different education levels and areas development standards. It is recommended that future studies are undertaken with teacher education institutes in other countries to compare the findings. Nonetheless, although the results of this study presented a reasonable structure for TED, there is need for more research in order to confirm these results in other context of educational areas. Besides this, future scholars may investigate into findings of this study in more detail and explore the salience of college authority and TED by examining to what extent their influence can guide educator development to comply with HRM practices and policies.

It is recommended for future studies to apply qualitative approaches such as, case studies specifically on each of the independent variables, moderator and dependent variable to better understanding teacher educator development in teacher training colleges. Finally, this study found that ICT skills is significant in moderating the relationships between HRM practices (HRDC, PA, TR, MP and RS) and teacher educator development. The consequence variables have an impact towards teacher educator development. This study strongly focused on the role of ICT skills as moderating variable , it is suggested that a field experiment study to be conducted with ICT skills as moderating variable on the relationship between HRM practices (HRDC, PA,TR,MP and RS) and teacher educator development.

Conclusion

Furthermore, it seeks to examine the effect of ICT skills and career planning as moderators of the relationship between HRM practices and TED. The study involved 210 teacher educators from 21 public and private teacher-training colleges in Bangladesh. The results of this study have found that the level of development of teacher educator in teacher training colleges in Bangladesh is generally low. The findings confirmed that there is a positive effect of ICT skills of five related HRM practices on teacher educator development, namely human resource development climate (HRDC), performance appraisal (PA), training (TR), manpower planning (MP) and recruitment & selection (RS) and TED. All of the variables in this study were identified. Seven variables were supported by means of reviews of relevant literatures. The supported variables have been sequentially discussed and reviewed in chapter-two of this dissertation. The study identified i) Five HRM practices of TED were adopted as independent variables of the study, ii) Teacher educator development (TED) was adopted as the dependent variable of the study and iii) ICT skills considered as moderating variable of the study.

The main contribution of the study is it proves that ICT skills significantly moderated the effects of HRM practices on teacher educator development in the public and private Bangladeshi teacher training colleges. The study also provides empirical evidence that the use ICT skills and selected HRM practices can indeed lead to increased teacher educator development. In conclusion, the uses ICT skills with HRM practices have effected to foster teacher educator development in teacher training colleges of Bangladesh. The current results clearly indicated that, ICT skills has partial moderating effects on the relationship between HRM practices (HRDC, PA, TR, MP and RS) with teacher educator development. The results revealed that ICT skills was found to have partial moderating effect on the relationship between the HRM practices (HRDC, TR and MP) with development of teacher educator. Overall, it can be concluded that educator development with the HRM practices will lead to higher teacher educator development when the involvement of ICT skills as moderator. The findings of the study also provided valuable knowledge and information to teacher training colleges regarding the effects of HRM practices on the development of teacher educator.

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