

**Exploring Pre-Service Teachers' Perceived Teaching-Efficacy, Attitudes  
and Concerns About Inclusive Education in Bangladesh**

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### ABSTRACT

This paper reports on pre-service teachers' preparedness for inclusive education in Bangladesh through measuring their perceived teaching-efficacy, concerns and attitudes towards inclusive education and identifying predictor variables that contribute to those three variables. Using two standardized scales with 1,623 pre-service teachers from 16 teachers training institutions, it was found that variables such as length of training, gender, interaction with persons with disabilities, knowledge about local legislation, and level of training involved had significant relationship with participants' perceived teaching-efficacy, attitudes and concerns. In addition, it was also found that pre-service teachers' perceived teaching-efficacy is correlated to their attitudes towards inclusive education. This study also revealed that pre-service teachers having higher perceived teaching-efficacy showed lower level of concerns towards inclusive education. Implications of this study for further improvement of pre-service teacher education program for inclusive education are briefly discussed.

**Keywords:** Pre-service teacher; perceived teaching-efficacy; concerns; attitudes; inclusive education; Bangladesh

## Introduction

“What people think, believe, and feel affects how they behave” (Bandura, 1986, p. 25).

Inclusion of children from diverse backgrounds (i.e., children with disabilities and children from socially disadvantaged backgrounds) in the mainstream regular education is a global trend in recent days to ensure rights to education for all (UNESCO, 2009). Inclusive Education (IE) is considered as an educational reform that aims to wipe out barriers in the education system by bringing all children into regular education, irrespective of their diversity and backgrounds (UNESCO, 1994). The move towards inclusion is focused on improving school systems for all, more than just including disadvantaged groups in the existing settings (Ainscow, 2005). A strong policy framework is necessary to ensure such school improvement for IE.

Like many other countries (i.e. USA, UK, Australia, India, South Africa), Bangladesh has gone through a number of policy reforms to promote IE. Bangladesh made primary education compulsory for all children by legislating the *Compulsory Primary Education Act 1990* (Ministry of Primary and Mass Education [MOPME], 1990). Moreover, Bangladesh enacted the *Bangladesh Persons with Disabilities Welfare Act* (Ministry of Social Welfare [MSW], 2001) in 2001. The act emphasised the need to educate children with disabilities either in mainstream or special schools. More recently, *The Education Policy 2010* recognized IE as a viable strategy to ensure education for all citizens (Ministry of Education [MOE], 2010). More recently, *The Education Policy 2010* recognized IE as a viable strategy to ensure education for all citizens (Ministry of Education [MOE], 2010). The overall goals and objectives (Objective Number 10) section of the Pre-primary and Primary Education Section of the *National Education Policy 2010* further emphasised, “Equal opportunities have to be ensured for all kinds of disabled and underprivileged children” (MOE, 2010, p. 12).

In order to ensure that these policy and legislative mandates are translated into improved teaching practices at the classroom level, reform in teacher education programs as well as in teaching-learning practices are necessary (Forlin, 2008; 2010). Studies have shown that teachers, who go through a teacher education program that promotes values of IE, are willing to include students from diverse backgrounds and are more likely to create successful inclusive classrooms (Martinez, 2003; Romi & Leyser, 2006). Despite having a broader understanding of IE, it is reported that some teachers feel uncomfortable in including children with special needs in their programs (Forlin, Loreman, Sharma, & Earle, 2009; Kim, 2011; Shade & Stewart, 2001). Some authors have suggested that the time of pre-service teacher preparation could be the best time to address educators concerns’ and make them feel more positive towards IE (Bechham & Rouse, 2011; Shade & Stewart, 2001).

Several studies have found that participation in inclusive or special education courses (Lancaster & Bain 2007, 2010; Oh, Rizzo, So, Chung, Park & Lei, 2010; Sari, Çeliköz & Seçer, 2008; Woodcock, 2008) or embedding evidence-based practice in the pre-service teacher education program (Bain, Lancaster, Zundans & Parkes, 2009) have a positive impact on pre-service teachers’ knowledge and skill development to teach in inclusive classrooms as well as developing high teacher -efficacy and positive attitudes towards inclusive education. Studies (Ben-Yehuda, Leyser & Last, 2010; Forlin, Cedillo and Romero-Contreras, 2010; Romi & Leyser 2006; Sharma, Moore, & Sonawane, 2009) have shown that pre-service teachers who participate in training programs about teaching in inclusive classrooms express their readiness by showing high degree of teaching-efficacy and welcoming attitudes towards students with diverse learning needs.

**Self-efficacy, perceived teaching-efficacy of pre-service teachers and inclusive education**

Self-efficacy is defined as a person's belief in his or her own competence to execute required behavior successfully to get expected results (Bandura, 1997). If people do not believe in their own abilities in generating a desired effect through their acts, they will not have enough motivation to conduct the act (Bandura, 1997). High self-efficacy is a predictor of increased motivation to achieve goals and feeling more comfortable in coping with unfavorable environments (Bandura, 1997).

Many studies (Lancaster & Bain, 2007; Main & Hammond, 2008; Romi & Leyser, 2006) have considered the term 'self-efficacy' to represent teachers' self-efficacy for teaching. Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) elaborated the concept of self-efficacy in the teaching context and defined teaching efficacy as teachers' beliefs in their own abilities to accomplish specific tasks related to teaching. In this study the term 'perceived teaching-efficacy' is used as we were interested in measuring specific aspects of teaching efficacy in inclusive classrooms.

It is evident that teachers' perceived teaching-efficacy has a relationship with students' academic achievement (Woolfolk, 2007). Changes in the level of teaching-efficacy beliefs are associated with teachers' performance (Woolfolk, 2007). Teachers who have a high level of perceived teaching-efficacy use a range of behavior management techniques (Woolfolk, Rosoff, & Hoy, 1990), do more practical activities and follow effective teaching learning methods (Guskey, 1988). They also take more initiatives in order to meet learning needs of all students and set higher level of goals to be achieved by themselves and their students (Mergler & Tangen, 2010). Moreover, teachers with high teaching-efficacy tend to show behavioral characteristics such as effort taking, decision making, keeping patience in challenging situations and also improving students' motivation, which results in their students' high achievement (Paneque & Barbeta, 2006).

Pre-service teachers' teaching-efficacy beliefs regarding IE have a significant impact on the successful implementation of the values of inclusion (Moeller & Ishii-Jordan, 1996; Paneque & Barbeta, 2006; Sharma, Loreman & Forlin, 2011). Effective teaching in an inclusive classroom depends on teachers' beliefs about disabilities and their responsibilities for children with special needs (Jordan, Schwartz and McGhie-Richmond, 2009).

Pre-service teachers' perceived teaching-efficacy for IE is dependent on a wide range of variables. Romi and Leyser (2006) conducted a study with 1,155 pre-service teachers in Israel. Their study found that pre-service teachers in the third and fourth year had significantly higher level of perceived teaching-efficacy than those in the first and second year of the teacher education program. However, the third and fourth year pre-service teachers were concerned about their lack of skills required in the inclusive classroom.

Pre-service teacher education curriculum content is found to be significantly related to pre-service teachers' perceived teaching-efficacy for IE. Lancaster and Bain (2007; 2010) in studies with Australian pre-service teachers reported that having IE components in pre-service teacher education course was a predictor of high perceived teaching-efficacy. In addition, embedding special education related instructions in the program also enhanced pre-service teachers' perceived teaching-efficacy (Brown, Welsh, Hill, & Cipko, 2008). Romi and Leyser (2006) conducted a study with three groups of Israeli pre-service teachers. They found that the group who completed special education major during its teacher education program showed a significantly higher level of perceived teaching-efficacy than the groups that lacked such experience.

Gender is also associated with perceived teaching-efficacy of pre-service teachers. Several studies (Erdem & Demirel, 2007; Romi & Leyser, 2006; Woodcock, 2008) have found that female teachers express a higher degree of perceived teaching-efficacy than their

male counterparts. In a study of Mexican pre-service teachers, Forlin et al. (2010) also found that female pre-service teachers showed higher teaching -efficacy beliefs than their male counterparts.

Researchers have also considered the grade level being taught as a variable that predicted pre-service teachers' perceived teaching-*efficacy*. Baker (2005) reported that secondary level pre-service teachers had a lower level of perceived teaching-*efficacy* than primary counterparts. A cross-sectional study (Woodcock, 2011) with 467 Australian pre-service teachers found no significant difference in perceived teaching-*efficacy* between primary and secondary level pre-service teachers who were at the beginning stage of the course. But the primary level pre-service teachers who were at the end of their teacher preparation programs showed a higher level of perceived teaching *efficacy* than their secondary counterparts. In particular, a significant difference was found in managing the most difficult students (i.e. children having behavioral issues). Secondary level pre-service teachers in Mexico (Forlin et al., 2010) also possessed the lowest level of teaching-*efficacy* towards IE than their primary counterparts.

### **Attitudes and concerns of pre-service teachers towards inclusive education**

Pre-service teachers' attitudes and concerns are found to be major factors that influence the success of inclusion (Carpenter et al., 2005; Martinez, 2003; Sharma et al., 2006). Woolfolk and Hoy (1990) reported that there is a significant link between pre-service teachers' perceived teaching-*efficacy* beliefs and their attitudes towards children as well as control over the classroom. Studies conducted by Soodak, Podell and Lehman (1998), Weisel and Dror (2006), Kim (2006) and Savolainen, Engelbrecht, Nel and Malinen (2011) concluded that pre-service teachers' perceived teaching-*efficacy* is a powerful predictor of their attitudes towards IE. These studies found that pre-service teachers' teaching-*efficacy* and attitudes are positively correlated with each other.

Similar to the factors predicting pre-service teachers' perceived teaching-*efficacy*, there are several other variables that could affect pre-service teachers' attitudes towards IE. Shippen, Crites, Houchins, Ramsey and Simon (2005) conducted a study with 326 pre-service teachers from three universities in the United States who participated in a reformed teacher education program. Their study revealed that pre-service teachers were more positive and showed less anxiety towards children with disabilities after the completion of the course. Length of pre-service teacher education course as well as number of courses undertaken on disability and inclusion by the pre-service teachers found to be predictors of their attitudes towards IE. Rademacher, Wilhelm and Hildereth, (1998) examined attitudes of 78 pre-service teachers' towards IE in the United States who were enrolled in three different courses that varied in duration from three-week, one-semester to two-semester. Significantly positive attitudes were found among participants who finished the longest duration program (two-semester course) when compared to those who completed the shorter duration (three-week and one-semester courses) programs.

Previous experience in interaction with children with disabilities is found to be a predictor of positive attitudes towards IE. In a study of 1,155 Israeli pre-service teachers, Romi and Leyser (2006) found that participants who have had enough prior experience with students with disabilities had significantly more positive attitudes than those who did not have any or had less experience. Studies with Australian (Carroll, Forlin & Jobling, 2003) and Mexican (Forlin et al., 2010) pre-service teachers also found that contact with persons with disabilities is a significant predictor of positive attitudes towards IE. Previous educational background also contributes in shaping pre-service teachers' attitudes towards IE. Sharma et al. (2009) conducted a study with 480 pre-service teachers in India, which found that participants with a higher level of previous education had more positive attitudes towards IE

than those who had lower level of education. Previous education/training on IE also contributed in developing positive depositions among pre-service teachers. For example, positive attitudes were observed in pre-service teachers from Ghana and Botswana who received training in inclusive/special education compared to those who did not receive any such training (Kuyini & Mangope, 2011).

Gender is significantly related to pre-service teachers' attitudes towards IE. A study conducted by Loreman, et al. (2005) revealed that female teachers were less concerned and had more positive attitudes towards IE than their male counterparts. Similar results were also found in an Australian study by Woodcock (2008) with both primary and secondary level pre-service teachers. He found that female teachers had more positive attitudes towards inclusive reforms than the male counterparts. Pre-service teachers in Israel (Romi and Leyser, 2006) and in Ghana and Botswana (Kuyini & Mangope, 2011) also reported that female teachers had more positive attitudes towards IE than males. However, no significant relationship was found between pre-service teachers' gender and attitude towards IE in the study of Carroll et al. (2003) with pre-service teachers in Australia.

Despite having positive attitudes and/or high teaching efficacy, pre-service teachers could have their concerns regarding implementing IE. A study by Sharma and Desai (2002) identified that pre-service teachers' were concerned about inadequacy of resources and lack of peer acceptance towards children from diverse backgrounds. In addition they found that pre-service teachers were concerned that classroom academic standards would decline and they need to do more work in an inclusive classroom. Researchers have also found that pre-service teachers are concerned about including specific disability types in inclusive schools. For example, Cook's (2002) study reported that pre-service teachers in the USA showed more positive attitudes towards including children with learning disabilities, but they were concerned about including those children who had behavior disorder or multiple disabilities. Concerns about availability of financial and professional resources were also echoed in other studies conducted in Chile (Fletcher, Allen, Harkins, Mike, Martinich & Todd, 2010) and Ghana (Agbenyega, 2007). Oswald & Swart (2011) also reported that, based on their study with South African pre-service teachers, the participants showed positive attitudes towards IE and had increased level of knowledge and skills to deal with children with disabilities after participating in an IE related course, but they were more concerned about availability of resources and support services. Hence, from the review of literature it has been found that pre-service teachers' attitudes, teaching-efficacy and concerns about IE are predictors of their preparedness. However, pre-service teachers' demographic variables also have impact on their attitudes, teaching-efficacy and concerns towards IE. In addition to that, it has also been found that the interrelationship among these three variables is important. This information is valuable when planning for adequate preparation of pre-service teachers for IE.

### **Context of the study**

Bangladesh, situated in South Asia, is one of the most densely populated countries in the world (population density 962 persons/sq. km.). Its population is estimated to be 160 million. Bangladesh is struggling to achieve education for all, as well as implementing IE. The current adult literacy rate is at 54% and primary school enrolment rate is at 81% (UNICEF 2010). Despite a number of policy initiatives to ensure education for all, 89% of children with disabilities are left out of education in Bangladesh (DPE & CSID 2002). Of those who attend schools, a large majority frequently dropout within first few months or years. In addition, only 22% children from the indigenous communities completed primary education during 2004 (Sarker & Davey 2009).

In Bangladesh, three types of teacher preparation institutions are present that offer pre-service teacher education programs: Primary Teachers' Training Institutes (PTIs),

Government Teachers' Training Colleges (TTCs) and Universities. Primary level pre-service teacher education program in Bangladesh titled Certificate in Education (C-in-Ed) is run by the PTIs. At secondary level Teachers' Training Colleges (TTCs) offer one-year B.Ed and some universities offer four-year B.Ed degree. One of the foremost reasons behind not achieving literacy for all citizens in Bangladesh is inadequate preparation of teachers regarding IE (Ahsan & Burnip 2007; Munir & Islam 2005). The primary level teacher preparation curriculum is not yet revised to incorporate issues of IE (Munir & Islam, 2005). It has been identified as very traditional, rote-learning based and segregation-focused (Ahuja & Ibrahim, 2006). To overcome such barriers, IE issues are covered through additional one-day training under the PEDP II program. On the other hand, IE issues are embedded in different the secondary level pre-service teacher education curriculum (TQI-SEP, 2006). This curriculum is being implemented by all Government Teachers' Training Colleges (TTCs) through their one-year B.Ed program. Besides, some universities also offer 4-year B.Ed degree. However, very limited information about educating children with disabilities in general and to include them in mainstream classrooms is covered in the B.Ed program. Bangladesh developed a working definition of inclusive education through a consultative workshop in 2001, which was organized by the UNESCO-Dhaka with different stakeholders that defines IE as:

Inclusive Education is an approach to improve the education system by limiting and removing barriers to learning and acknowledging individual children's needs and potential. The goal of this approach is to make a significant impact on the educational opportunities of those: who attend school but who for different reasons do not achieve adequately and those who are not attending school but who could attend if families, communities, schools and education systems were more responsive to their requirements (Ahuja & Ibrahim, 2006, p. 6).

In order to explore the effectiveness of how the IE definition is translated into classrooms in Bangladesh, it is important to examine how well pre-service teachers are being prepared for inclusive classrooms through these existing teacher education programs. One way to determine the preparedness of pre-service teachers to teach in the inclusive classroom is to measure their perceived teaching-efficacy beliefs, their attitudes and their level of concerns about IE. Identification of factors that shape pre-service teachers' perceived teaching efficacy beliefs, attitudes and concerns would provide additional information that would be helpful for policy and curriculum reform initiatives for IE. This paper reports demographic differences in pre-service teachers' perceived teaching-efficacy, attitudes and concerns towards IE in Bangladesh.

This study recruited the final year/term pre-service teachers as participants. One reason of choosing this group was for predicting their preparedness just before they are entering into the real world of teaching. This paper aims to answer the following research questions:

- What is the level of perceived teaching-efficacy, attitudes and concerns of pre-service teachers regarding teaching in inclusive schools of Bangladesh?
- Is there any significant relationship between pre-service teachers' perceived teaching-efficacy, attitudes and concerns towards IE and the following variables:
  - a. age;
  - b. gender;
  - c. educational qualification;
  - d. teaching experience;
  - e. length of the pre-service teacher education course;
  - f. level of training involved (primary/secondary);
  - g. experience of teaching children with disabilities; and

- h. contact with persons with disabilities?
- Is there any significant relationship in pre-service teachers' perceived teaching-efficacy, attitudes and concerns towards IE?

### **Methodology**

#### **Participants**

Participants in this study were 1,623 final year/term pre-service teachers from primary ( $n=890$ , 54.8%) and secondary ( $n=733$ , 45.2%) level pre-service teacher education institutions in Bangladesh. Among the participants, 38.9% ( $n=631$ ) were male and 61.1% ( $n=992$ ) were female. Among 890 primary level pre-service teachers, the majority ( $n=638$ , 71.7%) were females. Whereas, among the secondary level pre-service teachers the number of male teachers ( $n=379$ , 51.7%) was slightly higher than the female ( $n=354$ , 48.3%) counterparts. Age range varied from 19 to 54 years. Of the participants, the majority 88% ( $n=1429$ ) were enrolled in one-year and the rest 12% ( $n=194$ ) were in the four-year long program. Regarding previous teaching experience, 11% ( $n=185$ ) had 'no', 39.7% ( $n=645$ ) had 'less than one-year', 12% ( $n=194$ ) had '1-2 years', 11.8% ( $n=191$ ) had 3-4 years, 3.6% ( $n=59$ ) had 5 years teaching experience and 21.5% ( $n=349$ ) had 'more than 5 years' experience. There is a reason behind such experience issue of pre-service teachers. In Bangladesh it is not mandatory for private schools to recruit teachers having pre-service teacher education degree. But, when they are recruited by the Government schools, they have to finish the pre-service teacher education as soon as possible. Among participants, [ $> 40$  hours], 50.4% had significant interaction with people with disabilities. A majority (94.9%) did not have any experience in teaching children with disabilities. A notable number (33.8%,  $n=548$ ) did 'not have any perceived knowledge of local legislations related to disability, another major part (36.8%,  $n=598$ ) had 'poor knowledge', 26.8% ( $n=435$ ) had 'average knowledge', a small number (2.6%,  $n=42$ ) had 'good' and 'very good' knowledge. Regarding confidence in teaching a student with disability only 5.7% ( $n=93$ ) had 'very high' and 15.2% ( $n=246$ ) had 'high' level of confidence. A majority 60.6% ( $n=984$ ) had average confidence. Whereas, 10.4% ( $n=169$ ) had 'low' and 8.1% ( $n=131$ ) had 'very low' confidence level.

#### **Selection procedure**

Bangladesh is divided into six geographical locations (Dhaka, Chittagong, Rajshahi, Sylhet, Barisal and Khulna). To get representation of all six divisions, the Director General (DG) of the Directorate of Primary Education (DPE) was requested to select six PTIs that are situated in six divisions out of 55 PTIs all over Bangladesh. All the pre-service teachers enrolled in the final term/year/semester in those six PTIs were invited to participate in the study and on the basis of voluntary participation the responses were taken. A three-part survey questionnaire was administered to the participants. The questionnaires were distributed in the class by the institution lecturer and the completed questionnaires were collected by the first author in each of the institutions (see Table 1).

Similarly, the DG of the Directorate of Secondary and Higher Education (DSHE) was requested to select six TTCs out of fourteen government TTCs following the same criteria that all six geographical divisions would be covered. A similar procedure as described above was used to collect data from these institutions.

In Bangladesh, two public and two private institutions offer 4-year B.Ed degree. Information about these institutions was collected from the University Grants Commission (UGC) web page. All four institutions were approached for the study and data was collected as described above (see Table 1).



**Table 1***Participants of the Study*

Level of Pre-service Teacher Education Programs	Type of Institutions	Number of Institutions	Number of Participants
Primary	Primary Teachers' Training Institutes (PTIs)	6	890
Secondary	Teachers' Training Colleges	6	539
	Universities that offer 4-year training	4 (2 public and 2 private)	194

**Instruments**

**Part 1: Questionnaire on demographic information.** A series of questions were asked to get pre-service teachers' demographic information such as age, gender, educational qualification, previous teaching experience, presence and type of a disability, experience in teaching children with special needs, experience in dealing persons with disabilities, teaching experience on children with disability, having inclusive/special education related components in the course, length of training, level of training involved, knowledge about local education policies and legislations, previous training on educating students with disabilities, confidence level and in teaching in inclusive settings.

**Part 2: Teacher Efficacy for Inclusive Practice (TEIP) scale.** For this research *the Teacher Efficacy for Inclusive Practice (TEIP)* scale (Sharma, Loreman and Forlin, 2011) was used to measure pre-service teachers' beliefs on their own abilities towards inclusive practices, in other words, their perceived teaching-*efficacy* for IE. The TEIP scale consists of 18 items (e.g. I am able to provide an alternative explanations or example when students are confused) that measure three different aspects of perceived teaching-*efficacy* for IE. These items are distributed across three subscales that measure *Efficacy to use inclusive instructions*, *Efficacy in collaboration* and *Efficacy in managing behavior*. This scale uses a six-point Likert scale of Strongly Disagree (1) to Strongly Agree (6). The TEIP scale yields a total-score, the value of, which can range from 18 to 108. Higher scores indicate high magnitude of perceived teaching-*efficacy* of pre-service teachers for IE. The reliability for the total scale was 0.89 and alpha coefficients for Factors 1, 2 and 3 are 0.93, 0.85 and 0.85 respectively. In this study the Cronbach's alpha for the TEIP scale was 0.85.

**Part 3: Sentiments, Attitudes, Concerns regarding Inclusive Education (SACIE) scale.** For this study the Sentiments, Attitudes, Concerns regarding Inclusive Education (SACIE) scale (Loreman, Earle, Sharma and Forlin, 2007) was used with pre-service teachers. SACIE scale measures three factors that all together indicate the attitudes of pre-service teachers towards IE. These three factors are sentiments, concerns and attitudes towards IE. SACIE scale has 15 items (e.g. I am concerned that my workload will increase if I have students with disabilities in my class) and measures the three factors by using a 4-point Likert scale with the response anchors of Strongly Agree, Agree, Disagree and Strongly Disagree. The SACIE scale yields a Total-score, the value of, which can range from 15 to 60. Cronbach's alpha for those three sub-scales are 0.68, 0.94 and 0.88 respectively.

This study only used the *Concerns* and *Attitudes* subscales as the reliability alpha of the sentiment subscale for this study was low. In this study the Cronbach's alpha for the

attitudes and concern sub-scale were 0.63 and 0.60 accordingly. The items of the concern subscale were reverse coded so that a high score indicates positive attitudes towards IE.

Three-part survey questionnaire was translated in Bangla language by using the conceptual translation procedures (Sperber, 2004). This procedure involved two independent translators for translation and the first author of this manuscript performed the third translator's role to summarize the translations. The study followed a university approved ethical guidelines. A consent form was signed by the head of the teacher education institution on behalf of the pre-service teachers. Identities were kept anonymous.

## Results

### Pre-service teachers' perceived-teaching-efficacy for IE

The overall mean score of the perceived teaching-efficacy of the pre-service teachers on the TEIP scale was 4.84 ( $SD=0.52$ ). A score close to value 5 on the TEIP scale refers to participants "Agree" with the statements that measure their perceived teaching-efficacy towards IE. Thus, pre-service teachers in this study had relatively high level of perceived teaching-efficacy towards IE. Scores of the pre-service teachers in three factors of the TEIP were also analysed. It was revealed that pre-service teachers had highest score ( $M=5.10$ ,  $SD=0.58$ ) in Efficacy in managing behavior factors, followed by ( $M=4.80$ ,  $SD=0.59$ ) Efficacy to use inclusive instructions. Among three factors, the lowest level of teaching-efficacy ( $M=4.59$ ,  $SD=0.75$ ) was found in Efficacy in collaboration factor. A multiple regression analysis has also been conducted to investigate the main effect of the scale on teaching-efficacy of pre-service teachers as well as impact of any predictors in comparison to all other demographic variables on the independent variable 'Perceived teaching-efficacy'. Demographic variables include age, gender, educational qualification, previous teaching experience, presence and type of a disability, experience in teaching children with special needs, experience in dealing persons with disabilities, teaching experience on children with disability, having inclusive/special education related components in the course, length of training, level of training involved, knowledge about local education policies and legislations, previous training on educating students with disabilities, confidence level and in teaching in inclusive settings. Variables were identified through this statistical procedure and their effects were discussed in another section of this article later on and presented in Table 2.

### Pre-service teachers' attitudes towards IE

The overall mean score of the attitude subscale was 2.81 ( $SD=0.54$ ). A score close to value 3 on the attitudes subscale refers to participants "Agree" with the statements that indicate their attitudes about IE. Therefore, pre-service teachers in this study have moderately positive attitudes towards IE. Attitude mean item scores suggested items indicate that pre-service teachers had most positive attitudes towards inclusion of students having problems in verbal expression ( $M=2.98$ ,  $SD=0.78$ ) and attention problems ( $M=2.98$ ,  $SD=0.82$ ) followed by those students who fail ( $M=2.90$ ,  $SD=0.84$ ) in exams. They were less favourable towards including students who need individualized academic programs ( $M=2.65$ ,  $SD=0.90$ ) and the least favourable to inclusion of students who require communicative technology (Braille/sign language) support ( $M=2.52$ ,  $SD=0.90$ ). Same as perceived teaching-efficacy, a multiple regression analysis was applied to determine the main effect of the scale as well as identifying predictor demographic variables on the independent variable 'Attitudes'. The findings of this analysis has been discussed in another section of this article later on and presented in Table 2.

### **Pre-service teachers' concerns about IE**

The overall mean score of the concern subscale was 2.67 ( $SD=0.52$ ). A score more than the value of 2.5 on the concern subscale refers to that participants somewhat 'Agree' with the statements that indicate their concerns about IE. Therefore, pre-service teachers in this study have low level of concerns towards IE. Analysis of 5 items in the concern subscale indicates that pre-service teachers are most concerned to provide appropriate attention to all students ( $M=2.34$ ,  $SD=0.85$ ) and concerned about lack of knowledge and skills ( $M=2.47$ ,  $SD=0.92$ ) followed by concerns about increased workload ( $M=2.61$ ,  $SD=0.90$ ). Pre-service teachers were less concerned about their stress level ( $M=2.90$ ,  $SD=0.82$ ) and least concerned about peer acceptance ( $M=2.99$ ,  $SD=0.72$ ). Same as perceived teaching-efficacy and attitudes, a multiple regression analysis was applied to determine the main effect of the scale as well as identifying predictor demographic variables on the independent variable 'Concerns'. The findings of this analysis has been discussed in another section of this article later on and presented in Table 2.

### **Impact of demographic variables on perceived teaching-efficacy, attitudes and concerns**

This section presents only the impact of those variables that were entered into the regression equation and found to be significantly correlated with three independent variables (perceived teaching-efficacy, attitudes and concerns).

**Determinants of perceived teaching-efficacy scores.** Considering the sample-size, number of dependent and independent variables, the Enter method of Multiple Regression analysis (Morgan, Leech, Gloeckner & Barrett, 2007) was employed to determine which demographic variables contributed in predicting the dependent variable of perceived teaching-efficacy. A significant model emerged ( $F_{14, 1608}=16.859$ ,  $p < 0.0005$ ) for the TEIP scale. Adjusted  $R$  square of the full model was 0.120 (Standard Error- $SE=.494$ ), which indicates that the model explained 12% of the variance in the pre-service teachers perceived teaching-efficacy. However the effect size was small (Cohen, 1988), suggesting that there could be many other variables that were not examined in this study which could further explain the variance in participants' mean efficacy scores. Six variables were found to be the significant predictors of perceived teaching-efficacy out of all the demographic variables (See Table 2).

Length of training ( $\beta=-.158$ ,  $SE=.028$ ) made the strongest contribution among the significant variables in predicting pre-service teachers' perceived teaching-efficacy for IE. In contrast to majority of the past research, a negative correlation was found which suggested that pre-service teachers in four-year long course ( $M=4.65$ ,  $SD=.59$ ) had less perceived teaching-efficacy than the pre-service teachers in one-year long course ( $M=4.86$ ,  $SD=.51$ ). The regression model also identified the knowledge of local legislation on disability ( $\beta=.131$ ,  $SE=.016$ ) as the next powerful significant predictor variable. A very clear trend of increasing mean scores of perceived-teaching efficacy were observed among the pre-service teachers having 'nil' knowledge ( $M=4.72$ ,  $SD=.56$ ) to 'poor' ( $M=4.82$ ,  $SD=.50$ ), 'average' ( $M=4.95$ ,  $SD=.46$ ), 'good' ( $M=5.19$ ,  $SD=.46$ ) and 'very good' ( $M=5.47$ ,  $SD=.46$ ) knowledge (See Table 2). Confidence in teaching a student with disability ( $\beta=.128$ ,  $SE=.015$ ) was found as another significant predictor of perceived teaching-efficacy. A very clear trend of increasing mean scores of perceived-teaching efficacy were observed among the pre-service teachers having 'Very low' confidence level ( $M=4.62$ ,  $SD=.63$ ) to 'low' ( $M=4.67$ ,  $SD=.51$ ), 'average' ( $M=4.84$ ,  $SD=.49$ ), 'high' ( $M=4.94$ ,  $SD=.51$ ) and 'very high' ( $M=5.07$ ,  $SD=.52$ ) level of confidence.

Having significant interaction in dealing with a person with disability was another predictor ( $\beta=.118$ ,  $SE=.027$ ) of perceived teaching-efficacy amongst all six variables. Those participants who had indicated having interacted with people with disabilities were found to have higher perceived teaching-efficacy ( $M=4.93$ ,  $SD=.48$ ) than who did not have any such

interaction ( $M=4.73$ ,  $SD=.54$ ). Level of training involved ( $\beta=.063$ ,  $SE=.033$ ) was also found as a significant predictor variable in the model. Secondary level pre-service teachers ( $M=4.88$ ,  $SD=.53$ ) were found to have higher perceived teaching-efficacy than primary level pre-service teachers ( $M=4.79$ ,  $SD=.51$ ). Gender ( $\beta=-.053$ ,  $SE=.029$ ) was the weakest amongst all six predictor variables. Male pre-service teachers ( $M=4.90$ ,  $SD=.54$ ) had higher level of perceived teaching-efficacy than female counterparts ( $M=4.79$ ,  $SD=.51$ ).

**Determinants of attitude scores.** A significant model emerged ( $F_{14, 1608}=2.463$ ,  $p < 0.0005$ ) for the dependent variable 'attitudes'. Adjusted  $R$  square of the full model was 0.012 ( $SE=.540$ ), which was rather low (Cohen, 1988). Only two variables were found to be the predictors of attitudes (See Table 2).

Level of training involved ( $\beta=.089$ ,  $SE=.036$ ) made the strongest contribution among the significant variables in predicting pre-service teachers' attitudes towards IE. Secondary level pre-service teachers ( $M=2.86$ ,  $SD=.56$ ) had more positive attitudes towards IE than primary level pre-service teachers ( $M=2.77$ ,  $SD=.51$ ). Gender ( $\beta=.056$ ,  $SE=.031$ ) was the other significant predictor variable of attitudes. Female ( $M=2.82$ ,  $SD=.53$ ) pre-service teachers had more positive attitudes towards IE than male ( $M=2.79$ ,  $SD=.55$ ) pre-service teachers (See Table 2).

**Determinants of concern scores.** A significant model emerged ( $F_{14, 1608}=9.025$ ,  $p < 0.0005$ ) in regression analysis for 'concerns'. Adjusted  $R$  square of the full model was .065 ( $SE=.510$ ), which indicated a small effect (Cohen, 1988). Five variables were found to be significant predictors of participants' concerns (See Table 2).

Confidence in teaching students with a disability ( $\beta=.128$ ,  $SE=.015$ ) made the strongest contribution among the significant variables in predicting pre-service teachers' concerns about IE. A very clear trend of decrease of concerns were observed among the pre-service teachers having 'low' ( $M=2.42$ ,  $SD=.49$ ) to 'average' ( $M=2.68$ ,  $SD=.50$ ), 'high' ( $M=2.77$ ,  $SD=.51$ ) and 'very high' ( $M=2.85$ ,  $SD=.59$ ) level of confidence. Interestingly, pre-service teacher having 'Very low' confidence were found to have less concerns ( $M=2.52$ ,  $SD=.57$ ) than those who were in 'low' ( $M=2.42$ ,  $SD=.49$ ) confidence level. Age ( $\beta=.079$ ,  $SE=.004$ ) was the next predictor among the significant variables followed by experience in teaching a student with disability ( $\beta=.078$ ,  $SE=.029$ ) that contributed significantly to the variance of pre-service teachers' concerns about IE. Pre-service teachers aged above 30 years were slightly less concerned ( $M=2.82$ ,  $SD=.55$ ) those who were in the age-group of 30 years and less ( $M=2.80$ ,  $SD=.54$ ). Findings also indicate that the concern level towards IE decreased as the experience level increased from 'nil' ( $M=2.61$ ,  $SD=.52$ ) to 'some' ( $M=2.78$ ,  $SD=.51$ ). However, concerns increased for those who had high level ( $M=2.74$ ,  $SD=.49$ ) of teaching experience in comparison to those who had some experience. But both groups who had some and high level of experience in teaching a student with disability were less concerned than those who had no experience (See Table 2). Significant interaction in dealings with a person with disability ( $\beta=.073$ ,  $SE=.028$ ) was another predictor variable for concerns. Finding reveals that pre-service teachers having 'significant interaction' with persons with disability ( $M=2.75$ ,  $SD=.53$ ) were less concerned than those who did 'not have any interaction' ( $M=2.58$ ,  $SD=.51$ ). Level of training involved ( $\beta=.068$ ,  $SE=.034$ ) was found to be the least powerful significant predictor of concerns in the model. Secondary level pre-service teachers ( $M=2.74$ ,  $SD=.52$ ) were found to be less concerned than primary level pre-service teachers ( $M=2.60$ ,  $SD=.51$ ).

### **Relationships among perceived teaching-efficacy, attitude and concern scores**

In order to explore the relationships between two continuous variables (i.e. teaching-efficacy & attitudes/teaching efficacy and concerns/attitudes and concerns) the Pearson Product-Moment correlations (Morgan, Leech, Gloeckner & Barrett, 2007) were calculated to determine the relationship among the scores of pre-service teachers' perceived teaching-

efficacy, attitudes and concerns. A significant positive correlation was also found ( $r=.196$ ,  $p=0.01$ ) between pre-service teachers' perceived teaching-efficacy and attitude scores. Positive correlation between perceived teaching-efficacy and attitudes indicates that pre-service teachers having high perceived teaching-efficacy show the evidence of positive attitudes towards IE. However, the relationship between two variables was not strong.

A significant positive correlation was found ( $r=0.24$ ,  $p=0.01$ ) between pre-service teachers' perceived teaching-efficacy and concern scores. As the concern scores were reverse coded, the strong positive correlation between perceived teaching-efficacy and concern indicates that pre-service teachers with high level of perceived teaching-efficacy show the evidence of lower level of concerns.

**Table 2**

*Summary of Multiple Regressions for significant variables predicting perceived teaching-efficacy, concerns and attitudes towards inclusive education*

Dependent Variable	Predictor Variables	Standardized Coefficient Beta	Standard Error	t value	Sig.
Perceived Teaching-efficacy for Inclusive education*	Level of training involved	.063	.033	2.050	.041
	Length of training	-.158	.028	-4.593	.000
	Gender	-.053	.029	-1.979	.048
	Significant interaction in dealings with a person with disability	.118	.027	4.611	.000
	Knowledge of the local legislation	.131	.016	4.975	.000
Attitudes towards Inclusive education**	Confidence in teaching a student with disability	.128	.015	5.078	.000
	Level of training involved	.089	.036	2.730	.006
	Gender	.056	.031	1.986	.047
Concerns about Inclusive education***	Level of training involved	.068	.034	2.136	.033
	Age	.079	.004	2.068	.039
	Significant interaction in dealings with a person with disability	.073	.028	2.767	.006
	Confidence in teaching a student with disability	.130	.015	5.029	.000
	Experience teaching a student with disability	.078	.029	2.493	.013

\*Perceived Teaching-efficacy model ( $F_{14, 1608} = 16.859$ ,  $p < 0.0005$ ; Adjusted R square=.120, standard error=.494)

\*\* Attitude model ( $F_{14, 1608} = 2.463$ ,  $p < 0.0005$ ; Adjusted R square=.012, standard error = .540)

\*\*\* Concern model ( $F_{14, 1608} = 9.025$ ,  $p < 0.0005$ ; Adjusted R square = .065, standard error= .510)

### Discussion and conclusion

The purpose of the study was to examine pre-service teachers' perceived teaching-efficacy, attitudes towards and concerns about IE. Findings of this study have some important

policy and practical implications. This section discussed the findings in relation to participants' level of perceived teaching-efficacy, attitudes and concerns of pre-service teachers of Bangladesh towards IE, effect of demographic variables on those dependent variables and relationships among teaching-efficacy, attitudes and concern scores.

Analyzing the mean scores of three scales, pre-service teachers in Bangladesh who participated in this study found to have high level of perceived teaching-efficacy, are not very concerned and have moderately positive attitudes towards IE. Pre-service teachers had more perceived teaching-efficacy about managing behavior in inclusive classrooms, which has often been identified as a challenge by pre-service teachers in other studies (Main & Hammond, 2008; Mergler & Tangen, 2010). They had high level of perceived teaching-efficacy in using inclusive instructions and the lowest level of perceived teaching-efficacy in collaborating with others among all three factors.

Analysis of data shows that pre-service teachers who had a high level of perceived teaching-efficacy, showed less concern and positive attitudes towards IE. This finding supports the conclusion of other studies conducted by Sharma et al. (2006) and Loreman et al. (2005) which reported that as the pre-service teachers become more positive towards inclusion, their concerns decline. Studies conducted by Weisel and Dror (2006) and Kim (2006) also found that perceived teaching-efficacy was the single most important factor that affected attitudes towards inclusion. In addition, Savolainen's et al. (2011) study with Finnish and South African teachers using the same scales as used in this study reported that in both countries perceived teaching-efficacy, attitudes and concerns scores were correlated with each other. Such consistency in the findings of the current and other studies supports a strong policy recommendation that suggests that concerns of pre-service teachers about IE can be identified when they are attending pre-service teacher education course and attempts could be made to minimizing concerns, which probably could contribute to increase pre-service teachers' perceived teaching-efficacy and positive attitudes towards IE.

What is surprising is that pre-service teachers at the secondary level had a higher level of perceived teaching-efficacy, less concerns and more positive attitudes towards IE than their primary level counterparts. These findings are in sharp contrast to the existing studies (Baker, 2005; Forlin et al., 2010; Woodcock, 2011) on similar variables where primary level pre-service teachers were more positive. This finding could be explained to some extent by the nature of curriculums in the primary and secondary programs. Primary level pre-service teacher education curriculum is not revised yet to address the values of IE, whereas, secondary level curriculum was revised in 2006. However, further in-depth study may probably reveal the exact reason behind such contradiction situation in Bangladesh than other country practices.

Pre-service teachers expressed that they were less concerned about peer acceptance towards children with disabilities and about their stress levels. They were 'more' concerned about their increased workload and 'most' concerned about providing appropriate attention to all children in a diverse classroom followed. These findings were validated by other studies (Sharma & Desai, 2002; Sharma, Forlin & Loreman, 2007). In relation to their attitude mean scores in regard to specific items, pre-service teachers showed positive attitudes in including children who had special needs in verbal expression, providing attention to children who failed in examinations. But they were less favorable in including children who require individualized academic programs and support of communicative technologies, such as Braille and Sign Language. These results are similar to those reported by researchers in the USA (Gao, 2011), Mexico (Forlin et al., 2010) and in Ghana (Agbenyega, 2007). They also found that pre-service teachers are less favorable and more concerned about including children with disabilities who have sensory and behavioral challenges.

Several other demographic variables (see Table 2) were found to have a significant impact on pre-service teachers' perceived teaching-efficacy, attitudes and concerns towards IE. For example, length of training was found to be related significantly to higher perceived teaching-efficacy scores. Pre-service teachers in one year long course had higher level of perceived teaching-efficacy than those in four years long course. This finding contradicts, at least in Bangladesh context, the popularly held belief that a longer length of training is better than a shorter training (Carroll et al., 2003; Rademacher et al., 1998; Theaker, 2008). One possible explanation could be that participants in one-year programs are receiving more attention from the government in relation to resource support, teacher educator development and curriculum reform areas than those enrolled in four-year university-based programs.

This study highlights a need to re-examine the curriculum of different teacher education programs in Bangladesh. Considering that some exposure to issues of inclusive education can make pre-service teachers feel more efficacious, less concerned and more willing to teach in inclusive classrooms, it is important that all teacher education programs in Bangladesh cover key aspects of inclusive education. While reforming the pre-service teacher education curriculum to address IE issues, it is vital to consider what should be covered in the revised teacher education program so that the curriculum is not overcrowded, but at the same time deepens understanding of individual differences while addressing student diversity within the Bangladesh context. In this regard, it is important that the new curriculum should build upon what is known to work in Bangladesh context rather than just on what has worked in other countries, particularly in the countries of West (Sharma, 2011). The revised curriculum should also attempt to make sure that the graduates coming out of the program not only have skills and knowledge (head), beliefs and commitment (heart) but also have sufficient experience in teaching (hands) the diverse student population (Sharma, 2011; Shulman, 2004). This argument is supported by Hemmings & Woodcock (2011)'s study with Australian pre-service teachers which reported that pre-service teachers showed evidence of improvement through participating in IE courses. But they felt less confident in teaching in inclusive classrooms due to poor exposure to real inclusive settings. Two recent studies (Ahsan, Sharma & Deppeler, 2011, 2012) conducted in Bangladesh based on data collected from interviews of heads of higher education institution that are providing pre-service teacher education also revealed that the existing curriculums need substantial revision in regard to IE. Therefore, this study also recommended revising the existing curriculum to better address such concerns.

Female pre-service teachers had more positive attitudes towards IE than males. This finding is consistent with other research studies (Loreman et al., 2005; Romi & Leyser, 2006; Woodcock, 2008). A meta-analysis conducted by Avramidis and Norwich (2002) also found females to be more affirmative and tolerant towards inclusion than their male colleagues. However, another interesting finding of this study is that females had lower level of perceived teaching-efficacy than the males. However, it remains unknown why female pre-service teachers in Bangladesh hold more positive attitudes but less perceived teaching-efficacy for IE. Significant interaction with people with disabilities was a strong predictor of high level of perceived teaching-efficacy and indicating lower degree of concerns. However, this variable was not significant in predicting attitudes towards IE in this study. Some studies (Avramidis & Norwich, 2002; Subban and Sharma, 2006) found it as a strong predictor of positive attitudes. Experience in teaching students with disability contributed significantly in minimizing concerns of pre-service teachers about IE. As the level of experience increased, the level of concerns decreased. Only 4.1 percent pre-service teachers had a "high" level of experience in teaching students with disabilities, 29.9 percent had "some" and a majority 66 percent did not have any experience at all. Other studies (Forlin et al., 2009; Oh et al., 2010; Sharma et al., 2007) also supported that teachers having previous experience/contact or

teaching experience with children with special needs had positive attitudes and less concerns towards IE.

Knowledge of local legislations related to disability and IE (e.g., The Bangladesh Persons with Disabilities Welfare Act, 2001) was also a significant predictor of perceived teaching-efficacy of pre-service teachers, though it was not significant for other two dependent variables. This study reveals that as the knowledge level increased, pre-service teachers showed more perceived teaching-efficacy towards IE. Importance of the positive impact of knowledge is mentioned in other study as well, such as; Sharma et al. (2007)'s study found that pre-service teachers were less concerned as they know more about local legislations. Another study in the United States (Brown, Welsh, Hill & Cipko, 2008) found that pre-service teachers' knowledge about inclusion terminology increased their confidence level. This finding supports, therefore, that information of local legislation and policies should be incorporated in the pre-service teacher education curriculum.

One limitation of the study could be identified. Data collected in this study from pre-service teachers could be considered as a snapshot (final semester/year) in their preparation to teach in inclusive classrooms. Perceived teaching-efficacy is a construct that predicts beliefs about teachers' future actions. We did not collect any data about the actual behavior of the participants in real classrooms; neither data was collected from the actual training experiences of the participants. Therefore, participants' self report may not be true reflection of what they would actually do when they are asked to teach in inclusive classrooms. The study might be more informative if practices of these participants could be observed when they entered into regular schools after completion of their degrees. Future studies could be designed in a way to see the longitudinal effect of teacher preparedness for IE in different stages of pre-service teachers' development. Besides, the models emerged through the regression analysis in this study had small-effect (Cohen, 1988) to the model fit (12%, 1.2% and 6.5%). However, it could happen when a model has a restricted range of the independent variables (Norušis, 2005). Nonetheless, significant explainable variables can be obtained through this small-effect model fit as well (Colton & Bower, 2002).

Findings of this study have several implications both internationally and in Bangladesh context. This study also validated other international data that higher perceived teaching-efficacy is correlated with positive attitudes and fewer concerns of pre-service teachers about IE. Besides, this study indicates that what is taught in the pre-service teacher education program is more important than increasing the length of the program. Regarding primary and secondary level pre-service teacher preparedness, this study contradicts with global findings and raise to address more context-based issues related to teacher preparation for IE. Contrasting findings related to gender claim in-depth study focusing gender, equity and pre-service teacher education for IE in developing countries like Bangladesh. This study also validated the importance of including knowledge of local legislations; experience and prior training on children with disability also contribute to better teacher preparation for inclusive classrooms. These findings indicated some teacher education curriculum reforms ideas for Bangladesh. Practical implication of the findings of this study would hopefully be able to create teachers with higher confidence level and positive attitudes who would be able to ensure education for all children through inclusive education.



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