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## Assessment of Skills Development in Brunei Trainee Teachers: Intervention Implications

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**Abstract:** Teacher education has been innovated in Brunei to support the ongoing inclusive education and curriculum reforms. This survey investigated the development of essential instructional skills in initial Brunei trainee teachers. The sample consisted of 109 student teachers (71 females and 38 males). Significant mean scores (Mean  $\geq 4$ ,  $p < .05$ ) and 95% confidence intervals were used to identify the levels of proficiency and enablers of success in teaching. Participants were proficient on 15 of the 28 skills measured by the Teacher Behaviors Checklist (Approachable; Confident; Effective communicator; Encourages; Enthusiastic; Flexible; Good listener; Humble; Prepared; Professional; Rapport; Respectful; Sensitive; Striving to be a better teacher; Understanding). From independent groups, T-tests and One-Way ANOVA analyses, other significant trends in participants' performance emerged at  $p < .05$  level of evaluation. Females scored highest on Humble and Realistic expectations while males scored highest on Understanding. Trainee teachers aged 31-35 scored highest on: Promoting critical thinking; and Providing constructive feedback, than counterparts. Participants with higher degrees (e.g. Master of Arts) scored higher on Authoritative skills than those with lower degrees (e.g. Bachelor of Arts). Trainees with teaching experience scored significantly higher on: Accessible; Knowledge about the subject matter; and Technological competence, than those with no experience. The findings suggest the need to help pre-service teachers to gain proficiency in all teacher skills to improve the quality of education in the country. Further research was recommended.

**Keywords:** *Skills development, assessment and evaluation, trainee teachers, Brunei teacher standards, Brunei.*

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### Introduction

Education is considered as a significant aspect of a person's life and the challenges manifested in the individual's learning (Lupascu et al., 2014). Like elsewhere, education in the Brunei classroom context entails quality instruction that positively impacts the learning process. The quality of instructions in the classroom is made up of five components, namely: teachers; teaching materials; context; students; and assessment (Yamtim et al., 2014). Teachers have been considered as the main elements in the students' learning process. Most advances in learning have been made possible by effective teachers (Yamtim et al., 2014). Effective teaching and learning determine the ability of students to understand and assimilate the information received particularly in the sciences (Lupascu et al., 2014; Sagala et al., 2019). Effective learning in educational institutions requires effective teachers and good teaching methods (Ates & Kadioglu, 2017).

Similarly, good teaching needs value judgments from professionals in educating their students (Lupascu et al., 2014). The teachers make decisions through instructional designs and assessments to ensure an effective learning process is met. Kudryashova et al. (2015) indicated that teachers play a major role in students' active learning. As constructivists in the learning process, teachers play many roles such as motivating and facilitating learning in the classroom (Kudryashova et al., 2015). Teachers have also played an active role in education and learning by being key assessors. The concept of student's support in the classroom through assessment has received significant attention over the last decades (Looney et al., 2017).

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*Problem statement*

Learning is viewed as an important predictor of quality education. Teachers are trained to improve their teaching techniques and to influence students towards academic excellence. In the Southeast Asian nations and communities, there is an ongoing challenge to train effective teachers (Ulla, 2017). Keengwe et al. (2016) indicated that there was a gap between the program of study provided to trainee teachers and the reality existing in schools such as inadequate teaching skills and learning materials. Boakye and Ampiah (2017) indicated that newly qualified teachers had low self-efficacy and inadequate knowledge and skills. Such a deficit needs to be addressed (Ulla, 2017). This research, therefore, focused on assessing the skills development in Brunei trainee teachers using the teacher behaviors checklist questionnaire (Buskist et al., 2002; Stigall & Blincoe, 2015) which is described in detail below under the section on instruments.

*Theoretical framework*

The transmission of relevant and salient teacher skills to student teachers in the Brunei teacher education program is underpinned and influenced by the social learning theory in which the trainee teacher learns mainly by observing, imitating and modeling the behaviors of the expert or master teacher (Bandura, 1965; 1971; 1977). In this Brunei teacher education context, several experts demonstrate and scaffold the requisite skills to trainee initial teachers. Each student teacher is assigned to a school two days a week to observe experienced serving teachers and make reflective reports of the observed skills. The subject specialist takes care of the trainee's micro or peer teaching skills within the University as well as during teaching practice in the student's specialist content area and assigned school. A clinical specialist is assigned to each trainee teacher to observe and provide feedback to the trainee on teaching methods she or he uses during school teaching practice. In the school, each trainee teacher is attached and apprenticed to a school mentor (a regular experienced teacher in the trainee's specialist subject area). The school mentor observes the student teacher's instructional practices and provides feedback by demonstrating the correct skills when and where necessary.

Overall, all the trainee's assessments and evaluations are grounded in the Brunei Teacher Standards, BTS (Ministry of Education, 2013). The BTS is used as a tool for assessing and evaluating both in-service and pre-service teachers in Brunei. In the BTS, a wide range of teacher skills, attributes, traits, and behaviors that support and sustain quality teacher education practices are emphasized.

The conceptualization of effective teacher professional development can be based on many factors that impact higher education such as adequate funding, resource availability, the curriculum, teaching, and assessments (Hammerness, 2014; National Research Council, 2001). The present study focused on theories that were particularly related to the development and evaluation of skills for initial teachers.

Several previous studies suggested that effective teacher preparation should be linked to viable and productive classroom practices (Guskey, 1986, 1997; Guskey & Sparks, 1996; Darling-Hammond *et al.*, 2005; Hammerness, 2012a, 2012b; Klette & Hammerness, 2016). Previous research also indicated that trainee teachers who graduated from teacher education programs without a clear vision of good teaching were less equipped to be effective instructors compared to peers from institutions with well-specified and detailed visions of teaching (Klette & Hammerness, 2016). Some aspects of this theoretical framework that emphasize the assessment and evaluation of teacher skills development are further explored and elaborated below.

*Trainee teachers' skills*

Many studies have been carried out to examine the skills required by teachers for educational development (e.g. Gao & Liu, 2013). Teachers need to have personality characteristics such as adaptability, humour, enthusiasm, fairness, agreeableness, patience, caring, and expectations (Gao & Liu, 2013). The teachers must effectively communicate and interact with students, reward students equally for their behaviours, challenge students to achieve high scores, make classes enjoyable, and show passion in teaching students (Gao & Liu, 2013). Ida (2017) observed that the traits of an effective teacher were linked to their personality traits, teacher's abilities and skills, and professional competencies. An effective teacher is one who is fair, friendly, patient, confident, joyful, objective, and knowledgeable (Ida, 2017).

Moreover, quality-teachers pay attention to students and encourage them. The findings from studies by Lupascu et al. (2014) and Akareem and Hossain (2016) indicated that the different traits of effective teachers included being tolerant, calm, friendly, and ability to control emotions. Furthermore, the findings by Blazar and Kraft (2016) demonstrated that high-quality teachers are characterized by the ability to deliver accurate content, support critical thinking, manage classroom behaviours, and contribute to students' social and emotional development. High-quality teachers contribute to students' happiness in class.

*Teachers' professional development*

The desirable teachers' instructional practices can be improved through professional development (Looney et al., 2017). Various methods have been suggested that contribute to an increase in teachers' development of salient skills

including online and face-to-face support programs, teaching practice, mentoring and training, individual research, and classroom assessment (Alkhaldeh, 2017). Professional development has helped teachers to broaden their subject-matter and pedagogical knowledge (Caddle et al., 2016). Teachers' professional development is achieved through various ways including teaching practice (Yildiz & Gokcek, 2017). The teaching practice program has been viewed as a method for preparing teachers to develop and grow the necessary skills (Nkambule & Mukeredzi, 2017). The concept of teaching practice has its roots in the development of competent leaders.

Teachers' skills development is receiving much attention among scholars in higher education. Most teacher skills are obtained from both pre-service and in-service training programs (Golsteyn et al., 2016). While teachers perform with basic skills, they are also required to engage in training that adds value and increase the skills level (Golsteyn et al., 2016). The teacher quality defined by effectiveness in decision-making requires teachers to acquire new skills such as reflective thinking, conducting research, problem-solving, and critical thinking (Alkhaldeh, 2017). The transferring of knowledge and skills to teachers is linked to training (Toman, 2017).

#### *Teachers' professional evaluation*

Teacher evaluation is done in many ways by students, school administrators, inspectors of schools, and other stakeholders such as parents of school children. One way the evaluation is done is via formal summative assessments such as end-of-semester student evaluations of teaching (Stigall & Blincoe, 2015). Teachers' professional evaluation is also carried out via informal assessments and classroom visits by colleagues. A potential research assessment tool for teachers is the Teacher Behaviour Checklist (TBC) that debates on what to make a master teacher (Buskist et al., 2002; Stigall & Blincoe, 2015). The TBC compiles the list of behaviors and activities performed by teachers. The strengthening of soft skills among teacher trainees is considered as normal in higher institutions. Due to the globalization of the workforce, teachers are expected to possess competitive skills (Ngang et al., 2017).

#### *Teachers' traits and gender*

Research studies have been conducted to examine gender differences in the various traits of effective teachers. The study conducted by Gao and Liu (2013) showed that there was a gender difference in personality traits and teachers' expectations whereby female teachers showed significantly greater concerns than male teachers. However, Islahi and Nasreen (2013) did not find a significant difference in teacher effectiveness across genders. Male and female teachers have similar perceptions of teacher effectiveness. A study conducted by Mahmoud and Thabet (2013) observed that quality teachers were characterized by traits of being helpful, fair, loving, encouraging, and kind.

#### *Teachers' age, experience, and qualifications*

The study by Koc (2013) found that quality teachers were indiscriminate, patient, kind, engaging, entertaining, and communicative. The findings demonstrated that there is a significant difference in teacher quality traits across teaching experience in elementary and high schools (Koc, 2013). The study conducted by Letitia and Cornel (2016) indicated a significant difference in teacher quality traits across age whereby most of the traits were manifested as the age increased. There was no significant difference according to age in teachers' traits across experience (Letitia & Cornel, 2016). The study by Akareem and Hossain (2016) indicated that teachers' qualifications were significant factors influencing perceptions about the quality of education.

#### *Effects of cultural differences in teaching and learning*

Researchers such as Hofstede (1980; 1986) had noted the influence of culture on teaching and learning as far back as the early 1980s. In western developed countries, student-centered teaching, discovery learning, openness, and critical thinking are encouraged. Confrontation and challenge in teaching and learning are entertained. The dominant social values are achievement and success. Teachers use the best (more-able) students as the norm. Students' selection of school subjects is based on their career interests. Students are comfortable in unstructured learning contexts. Intellectual disagreement is considered to be stimulating. Creativity and innovativeness are valued.

The opposite is true for high power distance countries – a mixture of developed, developing and underdeveloped countries - that are mainly collectivist societies (e.g. Russia, Japan, South Korea, Malaysia, Singapore, and Indonesia). In these countries, teacher-centered teaching, reception or expository learning, obedience, agreeableness, and conformity are encouraged. Confrontation and challenge in teaching and learning are not entertained. The dominant social values are consensus-seeking and caring for others. Teachers use average students as the norm. Career preferences do not heavily influence the students' selection of school subjects. Students are comfortable in structured learning environments. Intellectual disagreement is viewed as disloyalty. Accuracy and consistency are valued. Various studies (such as Nicholson, 1989; Ramburuth & Tani, 2009) supported Hofstede's (1980; 1986) findings. However, cultural differences in teaching and learning and all other issues explained here were not measured in the present study and need to be confirmed by future related studies.

*Multicultural education in teaching and learning*

Banks (1995) was the first main proponent of the multicultural education (ME) concept. The knowledge construction process concerns the way teachers try to help understand the complex concept of multicultural education. Equity pedagogy raises the issue of teachers ensuring that all students experience success in one way or another. Prejudice reduction is about modifying students' ethnic attitudes to be more accommodative. According to the ME theory, an empowering school culture should foster the integration of students from diverse ethnic and cultural backgrounds (see Burgess, 2016). Although interesting, and like cultural differences in teaching and learning, ME was also not measured in the present study and remains as a plausible factor to be confirmed by future related studies.

*Cultural responsive practices in teaching and learning*

Building on the earlier works by Hofstede (1980; 1986) and Banks (1995), recent research on the notion of cultural responsive practices (CRP) in teaching and learning, has brought new insights and perspectives on the effects of culture in education. For instance, preservice teachers' culturally responsive teaching outcome expectations were highest when a positive teacher-student relationship was based on trust between the parties concerned (Oginga & Siwatu, 2006). Teachers who were observed to be more culturally responsive also showed elaborative patterns of self-reflection in their teaching (Civitillo et al., 2018). With regard to teacher training, efforts are now being made to modify the teacher education curriculum by infusing elements of culturally responsive teaching, CRT (Chou et al., 2018). The importance of CRT is further underpinned in a case study by Coffey and Farinde-Wu (2016). The case study reports on how a Black trainee teacher, with White-middle class values teaching Black students, was forced to evaluate the perspectives of culturally responsive teaching (CRT) to fit and be effective in her class. According to Bottiani et al. (2018), not all teachers can address culturally responsive teaching issues effectively. This suggests a need for in-service training in CRP and CRT interventions. Other examples of cultural influences on teaching and learning include studies by Kukari (2004) and Kwok-wai et al. (2007). Cultural and religious practices influenced teaching and learning in various ways (Kukari, 2004). The two dimensions of teaching in Singaporean student teachers are traditional and constructivist with an emphasis on the constructivist model (Kwok-wai et al., 2007). Significant differences in the conceptions of the two teaching strategies were partly attributed to cultural differences. Despite the relevance of the literature described in this section, culturally responsive practices in teaching and learning were not measured in the current study and are recommended to be investigated in future research.

*Objectives of the study*

The current research aimed at assessing the skills developed by Brunei student teachers during training using the Teachers' Behaviour Checklist (Buskist et al., 2002; Stigall & Blincoe, 2015). The goal was to shed light on how initial teachers develop and acquire professional skills in the Brunei Teacher education program. The study was also intended to evaluate the continuing professional learning needs of Brunei preservice teachers (regarding skills that were not yet mastered). Although the study was based on the Brunei program and sample, the results may be of interest to teacher initial or preservice programs and student teachers in other countries particularly small nations the size of Brunei. The specific research objectives of the present study were:

1. To determine the skill areas in which trainee teachers perceived themselves to be competent;
2. To assess gender differences in skills development;
3. To examine age differences in skills development;
4. To evaluate the influence of qualifications in skills development; and
5. To identify the role of experience in skills development.

**Method***Design*

A quantitative field survey research method was chosen to facilitate the carrying out of this study. The field survey design was chosen because it facilitated the collection of large sets of data from the sample using pre-designed questionnaires (Rahi, 2017). In addition, the field survey approach involves collecting data from a population in designated research sites, developing objectives, measuring the opinions, describing, and interpreting the data (Rahi, 2017). Data collection is usually done by the researcher or trained research assistants and in this way differs from other survey modes (e.g. postal, online, and telephone). Furthermore, the quantitative survey strategy also involves quantifying the data using statistical software (Queiros et al., 2017). Diverse data may be used to explore and describe human behaviors in a large representative sample. Primary data facilitated the addressing of the present study's research objectives.

### Sample

The number of trainee teachers during one of two semesters in the academic year when the data were collected was 136. This was the population and sampling framework to which the results of the current study were generalized. Since the population was small, all the 136 enrolled trainee teachers during the academic year when the study was conducted were invited to participate in the research. Fortunately, all student teachers voluntarily agreed to be included in the study as explained in detail below under the section on procedures. However, 27 trainee teachers were removed and excluded from the study based on one or more of the following exclusion criteria enforced: (1) not being formally registered as a trainee teacher; (2) non-Brunei citizens; and (3) participants whose protocols were contaminated with various measurement errors that are detailed below under the section on common methods bias (CMB).

Table 1 shows the 109 (80% of the population) retained participants used in this research. A sample of this size was considered adequate for computing stable statistics at  $p = 0.05$ , two-tailed (see Krejcie & Morgan, 1970). The females represented the large part of the sample with 65.1% (71) while the males represented 34.9% (38). The age was arbitrarily categorized into three 5-point interval groups: 21-25; 26-30; and 31-35, and was represented by participants at 54.1% (59); 35.8% (39); and 10.1% (11) respectively. The participants' ethnicity was categorized as Malay 75.2% (82), Chinese 18.3% (20), and other 6.4% (7). Religion constituted 74.3% (81) Muslims; 13.8% (15) other religions; and no religion and missing responses 11.9% (13). A majority of the participants (98.2% or 107) were full Brunei citizens while 1.8% (2) were permanent residents. The participants' specialization areas of teaching included primary education 4.6% (5), secondary education 89.9% (98), and tertiary and vocational education 5.5% (6). Participants' educational qualifications included 90 undergraduate degrees (82.6%) and 19 postgraduate degrees (17.4%). Most of the participants (70 or 64.2%) did not have teaching experience while 39 (35.8%) had some experience.

Table 1. Participants' demographic information (N= 109)

Variable	Group	Frequency	Percentage
Gender	Male	38	34.9
	Female	71	65.1
Age	21-25	59	54.1
	26-30	39	35.8
	31-35	11	10.1
Race	Malay	82	75.2
	Chinese	20	18.3
	Other	7	6.4
Religion	Missing	8	7.3
	Muslim	81	74.3
	Other	15	13.8
	No religion	5	4.6
Citizenship	Brunei citizen	107	98.2
	Permanent resident	2	1.8
Specialization	Primary Education	5	4.6
	Secondary education	98	89.9
	Technical and Vocational education	6	5.5
Qualifications	Bachelor degree	90	82.6
	Master degree	19	17.4
Experience	No	70	64.2
	Yes	39	35.8

### Instruments

The Teachers' Behaviour Checklist, TBC (Buskist et al., 2002; Stigall & Blincoe, 2015) was used to facilitate the data collection process. The instrument describes what to make of a master teacher. Items of the TBC and scoring instructions can be obtained from the test developers (Buskist et al., 2002) or previous published studies that used the scale (e.g. Keeley et al., 2006; O'Meara, 2007; Stigall & Blincoe, 2015). This instrument contains a list of common behaviors and activities practiced by most teachers. The TBC is used by researchers, educators, students, and other stakeholders to rate, select, or rank the relevant attributes when describing a good teacher. The instrument contains a variety of attributes or skills self-rated by the participants in the current study. The Teachers' Behaviour Checklist used in the present study had 28 (five-point Likert-type) items listed in Tables 3-4 and scored as: [1] Never; [2] Rarely; [3] Sometimes; [4] Frequently; and [5] Always. All items were positively worded and did not require code reversing when scoring before data entry. The TBC includes attributes such as being accessible, authoritative, confident, creative and interesting, good listener, flexible, professional, respectful, and providing continuous feedback (among others). Since the 28 items of the TBC do not constitute a single unitary scale, internal consistency reliability could not be obtained. Instead, two experienced Brunei teacher educators (one female and one male) rated independently and blindly the suitability of each of the 28 TBC items for assessing and evaluating skill development in Brunei trainee pre-service

teachers. Each item was either rated as “Yes” (coded or scored 1) when suitable, or rated as “No” (coded or scored 0) if unsuitable. Using these binary values (1, 0) from two assessors, Cohen’s Kappa coefficient of 0.897 was computed using the Statistical Package for the Social Sciences, SPSS Version 22 as the TBC’s inter-coder agreement reliability for this study. This showed an almost 90% agreement between the two ratters, further demonstrating that the instrument was reliable. The content validity of the TBC research instrument was achieved through a comparison of the teacher skills embedded in the TBC scale and the Brunei Teacher Standards, BTS (Ministry of Education, 2013). The BTS (used as the criterion standard for teacher competency in the present study) is utilized nationally by the Brunei Ministry of Education for assessing, appraising and evaluating serving teachers in government schools as well as trainee teachers. Employing the technique of content analysis with constant comparison (Lincoln & Guba, 1985; Patton, 1990), two other experienced Brunei teacher educators (one male and one female and different from those who coded the BTC items for reliability purposes) served as expert judges to independently and blindly compare the skills in the TBC and the BTS. Any of the 28 TBC skills that had a matching counterpart in the BTC skills was coded as one (1) while any skill that could not be matched was coded as zero (0). Both judges reported high levels of similarity in skills emphasized by the TBC and the BTS. Using the two judges’ binary codes (1, 0), a correlation coefficient of 0.910 was computed and demonstrated adequate criterion-related content validity of the TBC.

#### *Detecting and controlling common methods bias*

According to Norton (2017), trainee teachers tend to over-praise themselves in self-report research instruments. The quality of the participants’ responses to TBC questionnaire items in the current study was checked using the Common Methods Bias (CMB) techniques recommended by Podsakoff et al. (2003). These included checking for central tendency error, extremity response bias, and missing values. Questionnaire protocols with 30% or more affected items were excluded from data analysis as in previous studies (e.g. Podsakoff et al., 2012). Exploratory factor analysis (EFA) with one solution was also used. Table 2 and Figure 1 show the results obtained from the one-factor solution based on the sample data for the current study. Since the total variance of the extracted single factor was only 28.477% and far less than 50%, it was assumed that CMB was not a major problem. Other researchers such as Fuller et al. (2016) prefer to use confirmatory factor analysis (CFA) when detecting CMB. Also, the participants’ teaching practice observation records were not available although needed to determine the degree to which the participants’ performance on various teaching tasks matched their self-ratings on the TBC (Durgunoglu & Hughes, 2010).

*Table 2. Total variance explained by the one exploratory factor analysis solution (N = 109)<sup>a, b, c, d</sup>*

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.974	28.477	28.477	7.974	28.477	28.477
2	2.217	7.917	36.394			
3	1.779	6.352	42.746			
4	1.512	5.400	48.146			
5	1.242	4.434	52.581			
6	1.150	4.108	56.688			
7	1.052	3.756	60.444			
8	1.009	3.603	64.047			
9	0.958	3.423	67.470			
10	0.853	3.047	70.517			
11	0.815	2.912	73.429			
12	0.754	2.692	76.121			
13	0.685	2.447	78.567			
14	0.673	2.404	80.972			
15	0.633	2.262	83.234			
16	0.595	2.126	85.360			
17	0.543	1.938	87.298			
18	0.484	1.730	89.028			
19	0.468	1.672	90.700			
20	0.415	1.482	92.181			
21	0.401	1.433	93.614			
22	0.374	1.335	94.949			
23	0.295	1.054	96.004			
24	0.289	1.032	97.035			
25	0.278	0.992	98.028			
26	0.219	0.781	98.808			
27	0.170	0.607	99.416			
28	0.164	0.584	100.000			

<sup>a</sup>Extraction method: principal component analysis; <sup>b</sup>Rotation method: varimax; <sup>c</sup>Kaiser-Meyer-Olkin measure of sampling adequacy = 0.808; <sup>d</sup>Bartlett's test of sphericity chi-square (df = 378) = 1162.055, p < .000

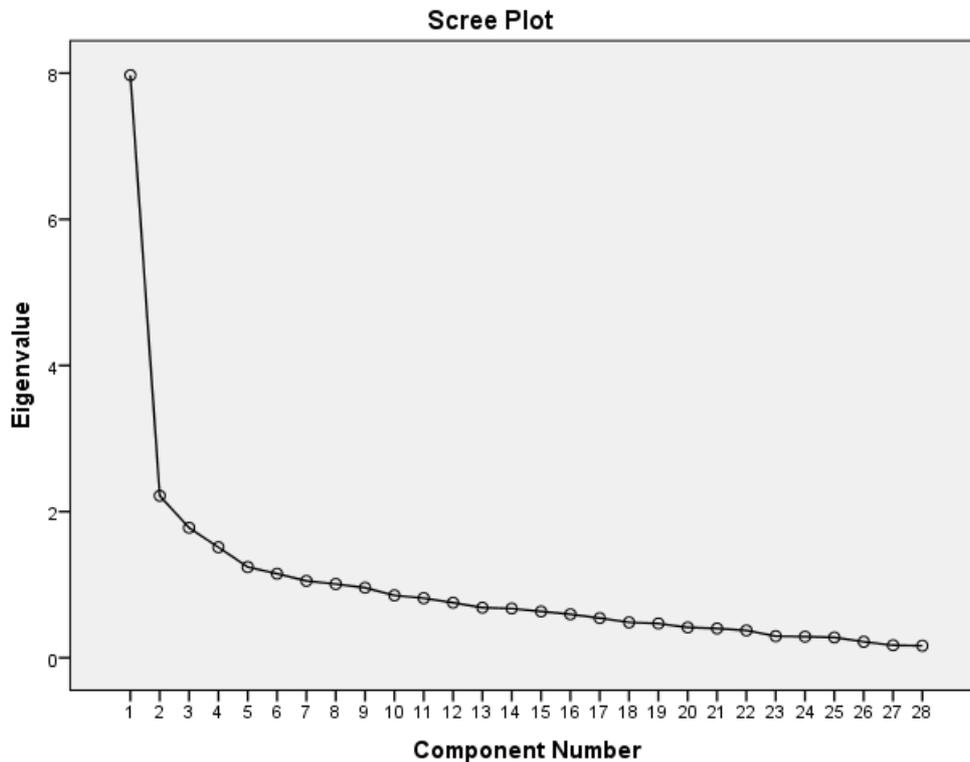


Figure 1: Visual representation of the one-factor solution

### Procedures

The data were collected via the TBC questionnaire. The researcher personally contacted the trainee teachers of the Universiti Brunei Darussalam (UBD) at a pre-arranged meeting to brief them on the purposes of the study, ethical conditions for being involved (such as confidentiality, anonymity, protection from harm and voluntary participation) and invite them to participate in the survey process. During this initial meeting, participants agreed to meet the researcher again on another designated date, time and venue to complete and submit the instruments. The study was funded by the researcher. However, the research was approved by the Universiti Brunei Darussalam Ethics Committee.

### Data analysis

Although the TBC is not a unidimensional scale (see Keeley et al., 2006), it was deliberately analyzed at the item-level in the present study to capture the participants' performance on all the 28 variables similar to what was done in previous research (e.g. O'Meara, 2007). Data were analysed by both descriptive statistics (frequencies, percentages, mean scores, standard error of the mean, standard deviations, and 95% confidence intervals) as well as inferential statistics (independent groups T-tests and One-Way ANOVA F-tests incorporating effect-sizes). A significance level of 5% (two-tailed) was used to make decisions and conclusions regarding the findings. The Statistical Package for Social Sciences, SPSS version 22, was used for the data analysis.

## Results

### Research objective one

The first research objective sought to determine the skills in which Brunei trainee teachers were proficient and deficient according to the 28 items of the Teachers' Behaviour Checklist. Table 3 presents the descriptive statistics based on the 28 items of the Teacher Behaviour Checklist. The findings revealed that the 15 (54%) most developed skills (Mean  $\geq 4.000$ ) in the participating student teachers were: Approachable; Confident; Effective communicator; Encourages; Enthusiastic; Flexible; Good listener; Humble; Prepared; Professional; Rapport; Respectful; Sensitive; Striving to be a better teacher; and Understanding. These were the skills on which the participants self-reported to have had high competence. For each of these teacher attributes, the obtained mean score ( $\geq 4.000$ ) was significantly different at  $p < .05$  from the neutral mean score  $\leq 3.000$  on a 5-point Likert rating scale (1SD, 2D, 3N, 4A, 5SA). The 95% confidence interval (CI) was used to obtain significant differences. For example, the obtained mean score on Approachable or personable personality disposition is 4.284 (SEm = 0.073) in Table 3. The 95% confidence interval (CI) for this obtained mean score was  $4.284 \pm [(1.96)(0.073)]$  or 4.143-4.427, where 1.96 is a z-score. On the other hand, the 95% CI for an obtained mean 3.000 on Approachable or personable variable would be  $3.000 \pm 0.143 = 2.857-3.143$ .

In this instance, the lower limit of the mean score 4.284 did not overlap with the upper limit of the mean score 3.000. Based on this type of analysis and comparison, it can be said that a mean score of 4.284 on the Approachable or personable variable was significantly different from a mean score  $\leq 3.000$  at  $p = 0.05$  level of testing. Similarly, all the other 14 mastered skills listed above had high mean scores ( $\geq 4.000$ ) that were significantly different from lower mean scores ( $\leq 3.000$ ) on their respective 5-point Likert scales. This was because the entire high mean scores ( $\geq 4.000$ ) had relatively low standard errors. The standard error of the mean (SEm) was used in two ways in the present study. First, it was considered to be the reliability of each mean score. The smaller the SEm value, the more reliable the mean score was. Second and as shown above, the SEm was used in constructing the 95% CI for the obtained mean of each variable or item. Theoretically, the unknown "true" mean score or value lay somewhere between the upper and lower limits of the 95% CI.

The four least developed skills were: Accessible (Mean score = 3.027); Presents current information (3.752); Promotes critical thinking/intellectually stimulating (3.779); and Realistic expectations of students/fair testing (3.807). These are the skill areas in which the participants were most deficient or incompetent and need to be enhanced during training. These findings suggest that suitable interventions (both educational and psychological) need to be identified and implemented to help student teachers to become proficient in all the 13 (46%) least developed skills of the Teachers' Behaviour Checklist (with Mean  $\leq 3.99$ ).

Table 3. Scale descriptive statistics ( $N = 109$ )

Item number, description, and response format†	Mean	SEm <sup>a</sup>	SD <sup>b</sup>	Skew <sup>c</sup>	Kurtosis
1. Accessible	3.027	0.126	1.315	-0.076	-0.491
2. Approachable/personable	<b>4.284</b>	0.073	0.770	-0.788	-0.073
3. Authoritative	3.972	0.073	0.763	-0.335	-0.288
4. Confident	<b>4.156</b>	0.072	0.759	-0.529	-0.670
5. Creative and interesting	3.972	0.077	0.810	-0.268	-0.412
6. Effective communicator	<b>4.000</b>	0.074	0.781	-0.355	-0.264
7. Encourages and cares for students	<b>4.275</b>	0.068	0.718	-0.618	-0.678
8. Enthusiastic about teaching and about the topic	<b>4.183</b>	0.075	0.783	-0.454	-0.581
9. Establishes daily and academic term goals	3.825	0.082	0.858	-0.279	-0.179
10. Flexible/open-minded	<b>4.027</b>	0.078	0.821	-0.459	-0.430
11. Good listener	<b>4.128</b>	0.074	0.782	-0.585	-0.149
12. Happy/positive attitude/humorous	3.954	0.087	0.916	-0.569	-0.462
13. Humble	<b>4.238</b>	0.077	0.803	-0.679	-0.471
14. Knowledgeable about the subject matter	3.880	0.069	0.729	-0.249	-0.139
15. Prepared	<b>4.036</b>	0.084	0.881	-0.486	-0.674
16. Presents current information	3.752	0.085	0.893	-0.280	-0.366
17. Professional	<b>4.614</b>	0.058	0.607	-1.337	0.477
18. Promotes class discussion	3.963	0.084	0.881	-0.672	-0.095
19. Promotes critical thinking/intellectually stimulating	3.779	0.077	0.809	-0.216	-0.425
20. Provides constructive feedback	3.880	0.078	0.824	0.025	-0.108
21. Punctuality/manages class time	3.972	0.086	0.907	-1.082	-0.390
22. Rapport / has good rapport with students	<b>4.045</b>	0.078	0.820	-0.393	-0.664
23. Realistic expectations of students/fair testing	3.807	0.079	0.833	-0.602	-0.526
24. Respectful	<b>4.302</b>	0.067	0.700	-0.498	-0.586
25. Sensitive and persistent	<b>4.018</b>	0.075	0.793	-0.373	-0.482
26. Strives to be a better teacher	<b>4.192</b>	0.091	0.957	-1.559	0.357
27. Technologically competent	3.945	0.092	0.970	-0.694	0.111
28. Understanding	<b>4.146</b>	0.075	0.791	-0.840	0.184

† Five-point Likert scale: [1] Never; [2] Rarely; [3] Sometimes; [4] Frequently; [5] Always

<sup>a</sup>SEm = standard error of the mean

<sup>b</sup>SD = standard deviation

<sup>c</sup>Skew = coefficient of skewness

#### Research objective two

The second research objective assessed the effect of gender on skills development in Brunei trainee teachers using the Teacher Behaviors' Checklist. The independent groups T-test was used to assess the significant differences. The results are presented in Table 4. The findings show that there were significant differences by gender at  $p < .05$  on three teacher skills: Humble; Realistic expectations of students / fair testing; and Understanding. Females scored significantly higher on Humbleness and Realistic expectations / fair testing skills than males. On the other hand, males scored significantly higher on Understanding skills than females. However, the three significant mean score differences were associated with small (negligible or non-substantial) effect sizes ranging from 0.014 to 0.021.

Table 4. Participants' differences by gender, age, qualifications and experience (N = 109)

Item number and description	Gender <sup>a</sup>	Age <sup>b</sup>	Qualification <sup>a</sup>	Experience <sup>a</sup>
1. Accessible	0.602	1.801	0.291	<b>-2.808*</b>
2. Approachable/personable	0.831	1.075	0.786	-0.752
3. Authoritative	0.274	1.747	<b>-2.551*</b>	-0.541
4. Confident	1.893	2.460	-1.009	-1.567
5. Creative and interesting	0.506	0.435	-0.162	-0.264
6. Effective communicator	1.029	1.423	-0.644	0.000
7. Encourages and cares for students	1.274	0.108	-0.270	0.759
8. Enthusiastic about teaching and about the topic	1.033	0.765	-0.165	1.580
9. Establishes daily and academic term goals	-0.554	1.618	-0.678	-0.417
10. Flexible/open-minded	1.215	1.210	-0.452	-1.449
11. Good listener	0.030	2.947	-1.812	-1.277
12. Happy/positive attitude/humorous	1.941	0.039	1.139	-0.388
13. Humble	<b>2.012*</b>	1.519	-0.459	-1.170
14. Knowledgeable about the subject matter	1.534	0.769	0.598	<b>-2.423*</b>
15. Prepared	-0.544	0.181	-0.946	-0.128
16. Presents current information	0.316	0.233	-0.763	0.970
17. Professional	-1.450	0.732	-0.965	-0.996
18. Promotes class discussion	-0.821	2.128	-0.771	0.354
19. Promotes critical thinking/intellectually stimulating	-0.157	<b>3.955*</b>	-0.993	-0.390
20. Provides constructive feedback	-1.587	<b>3.354*</b>	-0.386	-0.399
21. Punctuality/manages class time	0.673	1.172	-0.980	0.864
22. Rapport / has good rapport with students	1.291	2.138	-0.039	-1.025
23. Realistic expectations of students/fair testing	<b>2.037*</b>	0.118	-0.805	-1.084
24. Respectful	1.885	2.387	1.357	0.514
25. Sensitive and persistent	0.836	2.864	0.428	0.179
26. Strives to be a better teacher	0.771	0.719	-0.352	0.523
27. Technologically competent	1.477	1.349	1.029	<b>-3.021*</b>
28. Understanding	<b>2.447*</b>	1.317	1.211	0.434

<sup>a</sup>Independent groups t-test values

<sup>b</sup>One-Way ANOVA F-test values

\* $p < .05$  (two-tailed)

#### Research objective three

The third research objective examined the impact of age on skills development in Brunei trainee teachers using the Teacher Behaviour Checklist. This research question was tested via One-Way ANOVA. Table 4 presents the findings. The results show that there were significant differences by age in Brunei trainee teachers on two skills: Promotes critical thinking/intellectually stimulating; and Provides constructive feedback. Again, the two significant mean differences had only small non-exciting effect sizes (0.011 and 0.013, respectively). Tukey HSB comparison tests indicated that older trainee teachers aged 31-35 scored significantly higher on Critical thinking and intellectually stimulating as well as on providing constructive feedback skills than younger peers in age-groups 21-25 and 26-30.

#### Research objective four

The fourth research objective was developed to evaluate the influence of qualifications on skills development in Brunei trainee teachers using the Teacher Behaviour Checklist. To detect the significant differences, the independent sample t-test statistic was used. Table 4 shows the results of the analysis. Only one significant difference was obtained on the Authoritative skill with a tiny effect size (0.011). Student teachers with postgraduate degrees scored significantly higher on the Authoritative skill than counterparts with only undergraduate bachelor degrees. This finding suggests that teacher trainees with master or higher degrees had more knowledge and skills than those with bachelor degrees only.

#### Research objective five

The fifth research objective assessed the effect of experience on skills development in Brunei trainee teachers using the Teacher Behaviour Checklist. To assess this research objective, an independent sample t-test was used. Table 4 depicts the results. The results show that there were significant differences by experience on the following three skill areas: Accessible; Knowledge about the subject matter; and Technological competence. Participants with teaching experience scored significantly higher on all these three skills (accessibility; knowledge of the subject matter; and technical competence) compared to those with no prior teaching experience. The three effect sizes were trivial (0.010, 0.011, and

0.009 respectively in magnitude). This evidence suggested the need to help trainee teachers without teaching experience to develop proficiency in the three skill areas (Accessible; Knowledge about the subject matter; and Technological competence). Knowledge about the subject matter and Technological competence suggested that the student teachers perhaps lack adequate and in-depth knowledge of their teaching subjects and educational technology including not knowing much about how to use them in a classroom teaching setting.

## Discussion

### *Possible reasons for low mean scores of the overall group*

Findings from the present study showed that the participants were proficient on only 15 of the 28 skills measured by the TBC scale. However, it was not clear whether this was due to measurement errors reported above under common methods bias. Norton (2017) found that trainee teachers tended to magnify themselves in past research utilizing self-reports. Thus teaching practice observations are needed in future studies to directly compare the participants' self-ratings on the TBC with their performance on relevant school tasks (Durgunoglu & Hughes, 2010).

For the 13 TBC scale variables on which the participants' overall mean scores were below the criterion value (<4.00), the following are given as the plausible reasons:

- Accessible. Brunei schools are characterized by the high power distance notion with teachers being more powerful than students (Hofstede, 1980; 1986). This makes it difficult and uneasy for a student to access and approach a teacher.
- Authoritative. Many teachers are likely to be still traditional and not student-centric and tend to be less authoritative due to possessing high power (Hofstede, 1980; 1986). This finding or observation needs to be confirmed by future research.
- Creative and interesting. Most of the instructors are probably still teacher-centred and this discourages and stifles students' initiative, creativity, innovativeness, and discovery learning efforts (Hofstede, 1980; 1986). This too needs to be confirmed by future research.
- Establishes daily and academic term goals. In most Brunei secondary schools, both trainee and serving teachers are required to prepare only one lesson plan for all lessons taught within the same week. Daily goals are often not available.
- Happy/positive attitude/humorous. Preparations for teaching practice and teaching itself are time-consuming, tedious and demanding tasks. Experience may facilitate happiness, positive attitudes and humor (Kukari, 2004).
- Knowledgeable about the subject matter. Despite possessing a degree in the subject of specialization, most trainee teachers need to supplement the prior knowledge and skills acquired in the initial degree program with additional knowledge and skills to be effective in teaching.
- Presents current information. Knowledge and skills are not constant or static but changing and increasing all the time. Both trainee teachers and serving teachers need to upgrade and update themselves in various ways. The Brunei Teacher Standards (Ministry of Education, 2013) were introduced to help in assessing the competences of both pre-service and in-service teachers.
- Promotes class discussion. This might happen when traditional or teacher-centred teaching was minimized (Nicholson, 1989; Ramburuth & Tani, 2009). Trainee and serving teachers should be open-minded and pursue a student-centred teaching approach.
- Promotes critical thinking/intellectually stimulating. This can be best achieved when student teachers change their teaching approach from being teacher-centred to student-centred instructors (Kwok-wai et al., 2007).
- Provides constructive feedback. A student-centred teacher who employs culturally responsive practices in teaching would most likely be successful in providing constructive feedback (Banks, 1995; Burgess, 2016).
- Punctuality/manages class time. It is unprofessional and unethical for a teacher to go to class late for no good reason(s). This is something new teachers need to avoid. Managing time well during class is equally important for a teacher to be effective and productive.
- Realistic expectations of students/fair testing. In Brunei, parents have high expectations of teachers to produce good results through students' high achievement. In turn, teachers also expect students to perform well. All these expectations tend to be unrealistic. Teachers need to adopt a student-centred approach to reduce unrealistic expectations (Civitillo et al., 2018; Oginga & Siwatu, 2006).
- Technologically competent. Teachers need to frequently upgrade their information and communication technology (ICT) knowledge and skills and constantly practice them to consolidate the technical know-how.

*Possible reasons for differences by gender*

The results revealed that there were significant differences by gender on three TBC scale items or variables (trainee teacher humble skills; realistic expectations of students/fair testing; and understanding). In general, this finding concurred with the results of previous research (Islahi & Nasreen, 2013; Mahmoud & Thabet, 2013; Gao, 2017). More specifically, three points can be made here to explain the position of Brunei women student teachers. On humbleness, Brunei female teachers were naturally expected to be humbler than males due to low masculinity and high feminine tendencies (Nicholson, 1989; Ramburuth & Tani, 2009). The significant difference between females and males on realistic expectations of students/fair testing may be explained in terms of Hofstede's (1980; 1986) dichotomies (e.g. individualism versus collectivism). As a collectivist society, Brunei people tend to value group success. However, women appear to tolerate individual differences in academic achievement better than males according to the present study. Additionally, in the Brunei culture and collectivist context, women (low in masculinity and high in femininity) would be expected to be more understanding or open-minded than male counterparts (Hofstede, 1980; 1986).

*Possible reasons for differences by age*

There were two significant differences by age, namely on: promoting critical thinking/intellectually stimulating; and providing constructive feedback. On promoting critical thinking/intellectual stimulation, younger teachers seemed to have been less traditional, conservative or teacher-centred and did not demand too much respect, obedience, and conformity from students (Hofstede, 1980; 1986). The results suggested that they could withstand criticism and diverse thinking from students than older colleagues. Being less traditional, conservative or teacher-centred, younger teachers are more able to successfully provide constructive feedback than older teachers (Banks, 1995; Burgess, 2016). On the contrary, however, some previous studies indicated that most of the teacher traits were not significantly different by age except when the age difference increased (Letitia & Cornel, 2016).

*Possible reasons for differences by qualifications*

Moreover, the study findings indicated that there was a significant difference by qualification on the authoritative teacher skill. This was supported by Akareem and Hossain (2016) who indicated that teachers' qualification has been a significant factor in education while integrating the teacher traits. In the context of the present Brunei study, teachers with master degrees were probably more authoritative than those with bachelor degrees due mainly to receiving additional training in people skills.

*Possible reasons for differences by experience*

Above all, the study findings showed that there were significant differences by experience based on three related teacher skills (accessibility; knowledge of the subject matter; and technological competency). These findings were consistent with those of the study by Koc (2013) which revealed that there were significant differences in teacher quality traits across teaching experience. Based on the observations of the researcher and author in the Brunei situation, three statements can be added to supplement Koc's (2013) findings. First, in the present Brunei study, it appears that experienced teachers were more confident being accessible to students than inexperienced ones. Second, taking an untrained teaching job before commencing teacher training was a good decision that enabled prospective teachers to gain more practical knowledge of their specialization subject. Third, the untrained teacher position facilitated experienced trainee teachers to consolidate their technological competency.

*Intervention implications and recommendations*

Two implications may be drawn from the obtained gender differences on teacher trainee's competences. Using appropriate interventions, males need to be helped to acquire proficiency in Humbleness and Realistic expectations/fair testing skills. Similarly, suitable interventions are also required to assist females to attain proficiency in Understanding skills. In the absence of interviews with probes and based solely on the present study's data, it was not clear what caused the significant age differences. Is it because older trainees possessed teaching experience acquired prior to teacher training? This and other problems here should be both identified by future research and addressed through suitable interventions.

**Conclusion**

The application of suitable and effective teacher skills depends largely on the training and experience of the teachers. Besides this, the present study indicated that trainee teachers had mastered only 15 of the 28 skills listed in the Teacher Behaviors Checklist. Significant differences in trainee teacher traits were obtained on age, gender, qualifications, and teaching experience variables. Most trainee teachers were almost at the same level in the development of the necessary professional teaching skills. Vulnerable student teachers at risk of failing the teacher education program will require help to achieve mastery of the skills at satisfactory levels to prevent dropping out and wastage. When providing interventions, attention and priority should be directed generally at the 13 skills in which

trainee teachers were weak and also specifically on skills in which groups of students performed poorly by selected target demographic variables (age, gender, qualifications, and experience).

### Limitations

The main limitation of the current study was that it lacked school observations to determine the extent to which the participants' self-ratings concurred with their performance on actual tasks in a real teaching and learning school context. A replication of the present study and other related future investigations should address this limitation.

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