The Development of Indonesian Teacher Competence Questionnaire

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Abstract

The enhancement of teacher's quality is crucial, and it remains a challenge in Indonesia. As an effort to achieve a better education quality, a comprehensive reformation of the education system has to be done, especially regarding the aspect of teacher's quality. The cultural uniqueness may impact the different values of competent teachers, make it typical to define a competence teacher from one place to another. Up to the present, there have been wide variations of the instruments used to measure teacher competence, but most are developed with regards to the western culture. Therefore, the aim of this study was to develop a culturally-sensitive instrument to assess teacher competence based on the situation of the targeted country where the teacher resides. High schools students in Jakarta and greater area participated in this study. Validity and reliability testing were performed to confirm the psychometric property of Teacher Competence Questionnaire (TCQ). It is concluded that TCQ is a valid and reliable instrument to measure teacher competence. Several limitations related to this study are discussed.

Keywords: teacher competence questionnaire, teacher evaluation, quality of education

Introduction

The improvement of teacher's quality is crucial in the domain of education. Meanwhile, it remains a challenge in Indonesia. A study in 1999 shows that only 51% out of 1.455.507 elementary school teachers met the national standard requirements (Ramdhani, Ancok, Swasono, & Suryanto, 2012). Another competency test was conducted by Wahyuni (2012), which was given to 98.3% of the 285,884 registered teachers in Indonesia. The overall score was 42 out of 100 suggesting an agreeably low level of teacher competence. The quality of an educational system should not exceed the quality of the teachers (Barber & Marshad, 2007). Therefore, it is only by reforming the educational system can one expect to achieve a better quality of education in Indonesia.

The government has been made aware of this issue and has made an attempt to reform the system. The issue above is the portrayed by the priority of Indonesia's current Minister for Primary and Secondary Education – that is to prioritize parents, infrastructure, teacher's training and quality to reform an education system (Suara Pembaruan, 2015). All of the mentioned priorities are important aspects in an educational reformation (United Nations Educational, Scientific, and Cultural Organization [UNESCO], 2000). However, teacher's quality should take precedence over the other priorities, because teacher's quality has a significant and direct impact on student's reception of the knowledge materials being taught (Ugbe & Agim, 2009). As a response, the Indonesian government has launched series of programs focusing on teacher's quality (UNESCO, 2014).

The quality of a teacher can be reflected through their competence. Markova (1990) defined teacher competence as a balance between the necessary knowledge, skills and psychological qualities of a teacher. The characteristics of teacher competence were specified by Akhmetova, Omarova, Kuznetsova, and Sheveleva (2013), which is as follows: 1) capability to carry out activities, 2) combination of knowledge, skills, and personal characteristics that are related to the education, 3) skills and experience that determines productivity, 4) evaluation category or standard of teacher appraisal, and 5) integral characteristic of individual. The basis for teacher competence includes former education and experiences (Myrberg & Rosén, 2004).

To have an objective depiction regarding teacher competence, the construction of a comprehensive tool to assess it is necessary. In this present study, we decided to develop a teacher competence questionnaire to address several issues. Firstly, teacher competence is a complex concept, and there is no universally accepted teacher competence questionnaire (Akhmetova, Omarova, Kuznetsova, & Sheveleva, 2013). Ferchen (2011) argues that a competent teacher shall meet the requirement from three different settings: educational, legal, and practical. Several studies have been conducted to find the significance of teacher competence to other particular variables such as students achievement (Myrberg & Rosén, 2004), quality of education (Marinković, Bjekić, & Zlatić, 2010), students' strategy of handling conflicts (Malm & Löfgren, 2006), and job satisfaction and performance (Arifin, 2015). However, after reviewing those studies, we found that there is a vast array of instruments that are used to measure teacher competence. Besides confirming the complex nature of teacher competency, the variation also suggests an urge to develop a measurement of teacher competence to evaluate teachers' performance in both research and practical settings.

In addition to that, a teacher competence questionnaire with a degree of psychometric soundness is needed to measure teachers' quality compared to the general population. Despite the challenges to formulate comprehensive theoretical construct of teacher competence, it is important to find commonality and a more widely acceptable concept that is valid and reliable to describe the actual condition of the teacher's competency. However, it is indisputable that cultural context may also play important roles in defining teacher competence. We believe that the difficulties to formulate a accepted teacher competence are mainly caused by the plurality of the world's culture. Every culture demands certain characteristics and values and thus will have a different framework of a competent teacher. These assumptions lead to need to develop teacher competence questionnaire that

is culturally sensitive to the Indonesian population.

In this present study, we develop a teacher questionnaire that is addressed to the middle school and high school population in Jakarta and surrounding areas. Since the questionnaire relies on the attitude scale in a self-report format, the participants were required to have a cognitive ability than that of a healthy middle school or high school aged students to be able to complete the survey.

Aspect of Teacher Competence

The different extent of definition and understanding regarding teacher competence resulted in an also various theoretical concept. According to Ugbe and Agim (2009), teacher competence shall consist of teacher's resourcefulness, classroom management, varying teaching methods, classroom attendance, as well as evaluation process and materials.

From a different angle, teacher competence can also be outlined in six broad paradigms (Paquay & Wagner, 2001). They proposed that the nature of teaching has some common ground across different cultures and the following six dimensions well summarize the aspects of the profession: 1) the teacher as a reflective agent, 2) the teacher as a knowledgeable expert, the teacher as a skillful expert, the teacher as a classroom actor, 4,) the teacher as a social agent, and 5) the teacher as a lifelong learner.

With respect to the need of formulating teacher competency questionnaire that is culturally specific, several aspects of teacher competence are adapted from the indicators formulated by South East Asian Ministers of Education Organization [SEAMEO] (2010), as follows: 1)

professional knowledge (mastery of content and teaching methodology), 2) professional skills (pedagogies, classroom management, and learner assessment), 3) personal characteristics (personal traits such as being responsible, punctual, etc.), 4) professional or personal ethical standards and values (resulting in teachers being good role models in the school and the community), and 5) professional development and lifelong learning (such as participation in professional teacher organizations and activities, and other elements that demonstrate a desire to enhance the teaching profession). These aspects of teacher competence have been used to assess the general competence of teacher in eleven South East Asian countries. Moreover, this construct has also fit the standard of teacher competence stated by the Indonesian government, namely: 1) pedagogical competence, 2) personal competence, 3) social competence, and 4) professional competence (Departemen Pendidikan Nasional, 2007).

Method

Population and Sample

The population area of this study was private and public schools in Jakarta and surrounding areas. Another targeted criteria are that the schools must adapt the Indonesian national curriculum and must use Bahasa Indonesia as the first language. Convenience sampling was performed to find the schools for the samples being measured. As much as 282 high schools students that attend private school in Jakarta participated in this study.

Procedures

As a first step, we constructed Teacher Competence Questionnaire (TCQ) after carefully learning several relevant studies and instruments. The dimensions of TCQ were adapted from the indicators developed by South East Asian Ministers of Education Organization (2010). Based on the dimensions, we formulated items that refer to the operational definition of the corresponding dimension. After collecting all the items, the instrument was reviewed by professional experts to ensure the face validity. The initial version of TCQ is as followed.

Table 1.
Blueprint of Teacher Competence Questionnaire

Dimension	Item number
Professional Knowledge	1, 2, 3, 4, 5*
Professional Skill	
a. Pedagogies	6*, 7, 8, 9, 10, 11
b. Classroom management	12, 13, 14, 15*, 16
c. Learner assessment	17, 18, 19, 20, 21, 22
Personal Characteristics	23, 24, 25, 26*, 27, 28, 29*, 30
Ethical Standards and Values	31, 32, 33, 34, 35, 36, 37
Professional Development and Lifelong Learning	38, 40, 41, 42, 43

* = *reversed items*

Table 2.
TCQ Items

Dimension	Item
Professional Knowledge	1. Guru menguasai materi yang diajarkan. [*Teacher shows mastery of the teaching materials.*] 2. Tidak membutuhkan waktu lama bagi guru untuk memberikan jawaban yang tepat atas pertanyaan saya. [*It does not take a long time for the teacher to answer my questions.*] 3. Pengetahuan guru lebih luas atau lebih mendalam daripada sekadar yang tertulis di buku pegangan. [*Teacher shows wider and deeper knowledge than the one written in the textbooks.*] 4. Guru mampu menjawab sebagian besar pertanyaan siswa. [*Teacher is competent to answer most of students' question.*] 5. Guru kurang dapat memberikan jawaban yang memuaskan ketika ditanya. [*Teacher cannot give satisfactory answer when students ask.*]
Professional Skill a. Pedagogies	6*. Guru cenderung mengandalkan satu cara setiap kali mengajar (misal: hanya presentasi siswa, hanya mengajar di depan kelas, dsb.). [*Teacher tends to rely on one particular way of teaching (e.g.: students' presentation, lecture, etc.*] 7. Guru sering mengajukan pertanyaan terbuka. [*Teacher often asks open-ended questions.*] 8. Cara mengajar guru bervariasi. [*Teacher has various way of teaching.*] 9. Saya jarang merasa bosan di kelas yang dibawakan guru ini.

	[*I often feel bored in the classes taught by this teacher.*]
	10. Guru selalu mempunyai cara untuk membuat saya dan teman-teman memperhatikan pelajaran.
	[*Teacher always has some ways to make the students pay attention to the lessons taught.*]
	11. Saya diperbolehkan melakukan tindakan di luar kebiasaan (misal: belajar dengan cara saya yang berbeda dengan kebanyakan orang) sepanjang mendukung proses belajar.
	[*I am allowed to do something unusual (e.g.: to learn with the different ways than most people do) as long as it gains better learning experience.*]
	12. Di awal pelajaran, guru memberitahu bagaimana saya harus bersikap selama pelajaran.
b. Classroom management (12)	[*In the first meeting, teacher tells me how I should do during the class.*]
	13. Sebelum pelajaran, guru memberitahu tujuan pelajaran.
	[*Before teaching, teacher informs the learning objective.*]
	14. Guru jarang keluar kelas untuk mengambil materi yang tertinggal saat pelajaran.
	[*Teacher often gets out of the class to take any left teaching materials while teaching.*]
	15*. Ketika terlibat masalah di kelas, saya memecahkannya tanpa bantuan guru.
	[*When I have problems in class, I solve it independently, without teachers' intervention.*]
	16. Guru memantau berkeliling saat siswa bekerja kelompok.
	[*Teacher moves around the class when the students are working in group.*]
	17. Guru memberitahukan apa saja yang akan dinilai dari tugas-tugas saya.
	[*Teacher informs the grading aspects of my assignments.*]
	18. Guru memberikan kuis dan tes.
c. Learner assessment	[*Teacher gives quizzes and tests.*]
	19. Guru mengembalikan tugas-tugas yang sudah dinilai.
	[*Teacher returns students' assignments that have been graded.*]
	20. Di awal kelas, guru terlebih dahulu me-*review* pelajaran sebelumnya.
	[*In the beginning of the class, teacher reviews the materials taught in the last meeting].*
	21. Guru memberi informasi tertulis yang berisi hal-hal yang akan dinilai dari tugas saya.
	[*Teacher presents written information about grading rubrics of my assignments.*]
	22. Guru memberi komentar, baik tertulis maupun lisan, atas tugas-tugas saya.
	[*Teacher gives comments or feedbacks, either in written or oral form, of my assignments.*]
Personal Characteristics	23. Guru mengistimewakan siswa favoritnya.
	[*Teacher has special treatment to his or her favorite student(s).*]
	24. Perilaku guru dapat diteladani.
	[*Teacher demonstrates a good behavior to be a role model.*]
	25. Guru tidak keberatan mengulang penjelasan bagi siswa yang lambat memahami materi.

	[*Teacher does not reluctant to repeat explaining the materials for some students who are slow learners.*]
	26*. Perilaku guru saya berbeda di dalam dan di luar kelas. [*Teacher shows different behavior when he/she is inside and outside the class.*]
	27. Guru memperlakukan semua siswa dengan adil.
	[*Teacher practices fair treatment for the students.*]
	28. Guru memuji rekan sekerja di depan kelas.
	[*Teacher give compliments to other teahers in front of the students.*]
	29*. Guru berbicara negatif di depan kelas.
	[*Teacher talks negative things during the class.*]
	30. Guru semangat dalam mengajar.
	[*Teacher shows enthusiasm while teaching.*]
Ethical Standards and Values	31. Saya mengetahui nomor ponsel dan alamat surel (*email*) guru.
	[*I am informed of teacher's email and phone number.*]
	32. Guru memberitahu siswa tentang kebijakan plagiarisme.
	[*Teacher informs the students about plagiarism policy.*]
	33. Saya diajarkan untuk menghormati guru dan pekerja lainnya di sekolah.
	[*Teacher encourages me to show respect to the teachers and staffs in school.*]
	34. Guru mengajar saya untuk menghargai teman-teman.
	[*Teacher encourages me to appreciate my friends.*]
	35. Guru menghargai pendapat siswa yang berbeda dengannya.
	[*Teacher appreciates students whose opinions are different with him/her.*]
	36. Guru tak keberatan dihubungi di luar jam pelajaran.
	[*Teacher does not hesitate to be contacted after the class.*]
	37. Guru mendorong terjadinya diskusi di kelas.
	[*Teacher stimulates class discussion.*]
Professional Development and Lifelong Learning	38. Guru memiliki banyak pengetahuan tentang hal di luar mata pelajaran yang diajarkan di kelas.
	[*Teacher shows wide knowledge about many things more than the subjects taught in his/her class(es).*]
	39**. Berikan tanda silang pada kolom "TS" di nomor ini.
	[*Please put an X in the TS [SD / Somewhat Disagree] column for this item.*]
	40. Guru mendorong saya untuk mengembangkan diri.
	[*Teacher enccourages me to keep improving my self.*]
	41. Guru mendorong saya untuk memperluas wawasan dengan berbagai cara.
	[*Teacher encourages me to widen my horizon through various ways.*]
	42. Guru mendorong saya untuk kuliah setinggi-tingginya, tak masalah apapun profesi saya nanti.
	[*Teacher encourages me to study as high as I can, no matter what my career will be.*]

*: reverse items.   **: consistency item.

Participants were asked to give responses according to a 5-point Likert Scale. All the responses will be coded accordingly, from 1 (absolutely disagree) until 5 (absolutely agree). We utilized several reversed items to ensure the participants' consistency level in

responding to the items. The reversed scoring system will be applied for reversed items.

To ensure the accuracy of the participants' response, we included a question (item number 39) that instructs the participants to put a checkmark inside the *"somewhat disagree"* column. If the participant gave any other responses than what was instructed, we eliminated the data to make sure all data that is analyzed in this study is valid.

We also included two indexes to measure the respect and mastery level of the students toward the teachers being evaluated. These indexes were used to analyze the validity of the TCQ. For the respected index, participants were asked about how much they respect their teacher. Meanwhile, the participants were asked to indicate how much they understand the materials being taught by that particular teacher for the mastery index. For these indexes, participants' response was recorded based on a 5-points Likert scale, in which the higher scale represents a more favorable answer.

As the first step of expert judgment, two Bahasa Indonesia lecturers were asked to review the readability and layout of the instrument. The TCQ was then reviewed by educational psychologists to guarantee the face validity even further. Several modifications were made accordingly based on the qualitative feedbacks. A quantitative judgment was made by each expert to rate the appropriateness of each item using a rating scale (appropriate = 1; neutral = 0; not appropriate = -1). The scores were analyzed to yield a content validity ratio.

A pilot test was performed for reliability and validity measure and to make sure that the form has a clear instruction and understandable phrases for the respondents. The final form of an instrument was then distributed to the targeted respondents. To measure the stability power of TCQ, the same respondents were asked to complete the instruments again two weeks after completing the TCQ. The scores were then correlated to produce a test-retest reliability index.

Statistical Analysis

The statistical procedures were conducted through SPSS software. For reliability testing, we performed a test-retest reliability testing within one to three weeks period. We also calculated an Alpha Cronbach's coefficient and corrected item-total correlation to measure the internal consistency of the instrument. The scores in each period will be correlated through Spearman's rho correlation technique.

Results

Demographic Characteristics

The initial, unfiltered participants consisted of 282 individuals. After going through two processes of filtering that includes data completion and item distractor (item 39), 18 data were removed. Thus, creating the final total of 264 participants.

Amongst the total, 39.02% of the participants are male while the rest of 60.23% are female. Since participants were high school pupils, the average age of the participants were 15 years old (SD = 2.3 years old) at the time of the data collection.

During the data collection, the distribution of the participants regarding the subject they were studying is mainly distributed in Social studies (33.33%), Mathematics (11.36%), Chemistry and Arts (9.09%). Three subjects that have the least participants are Religion Studies, ICT and Biology with only 4.16%, 4.54%, and 6.06% participants studying the mentioned subject respectively at the time of the data collection. Some other subjects include Physics and Historical Studies with 7.95% participants, as well as Bahasa Indonesia with 6.44% participants.

Face Validity

Qualitative analysis was done to ensure the readability and appropriateness of each item of TCQ in measuring and defining a competence teacher based on Indonesian culture. The panel consisted of two Bahasa Indonesia lecturers and two educational psychologists. The analysis and feedback also covered the use of language (and its relevance for high school students and teachers), clarity of the instruction, and layout of the questionnaire. Some modifications of the items were made accordingly. A panel also gave a quantitative analysis that was used to provide the content validity index.

Content Validity

To ensure the content validity of the instruments, both the Index of Item-Objective Congruence by Rovinelli and Hambleton (1977) as well as the Content Validity Coefficient by Aiken (1985) was used. There are four experts that were selected to evaluate each item from both instruments. Each expert was approached to evaluate both instruments; one to be given to the teachers and one to the students. The content validity for the former is satisfactory from both methods of assessing content validity, while the content validity for the latter is also satisfactory. Further elaboration of the results will be described below.

The Item-Objective Congruence was calculated by setting a predetermined cut-off point for both instruments. A minimum of two experts for each item was then established as the cut-off point for an item to be classified as valid regarding content. Also, an item could not have more than one expert deem it unfit for it to pass the criteria. Both the result of the Item-Objective Congruence for the teacher and student's instrument are satisfactory.

The calculation of the Item-Objective Congruence for the TCQ instrument shows that two out of forty-one items fell under the cut-off point criteria. These items are item number 9 and 15. Although item number 9 shares the same congruence index with several other items, only one of the expert agreed that it represents the construct being measured while the other three experts were neutral thus failing to pass the criteria for Item-Objective Congruence content validity. Item number 15 stood the lowest regarding its congruence index by having an index of -0.561 with two experts judging it unfit as an item, one expert being neutral and only one expert judging it fit as an item. Twenty-six items with an index of 0.0765, indicating an agreement from all experts, hold the highest congruence index.

The next and the key method for assessing the content validity is Aiken's Content Validity Coefficient or CVC. The CVC is

used as a key method for this study since the criteria were already determined. That will reduce possible biases in creating our cut-off point. Another reason is in comparison to the Item-Congruence Coefficient formula; the CVC formula allows an instrument with larger numbers of items to be calculated while still having the same result as an instrument with a smaller amount of items. Therefore, it is far simpler to use CVC as a model to compare one instrument to another, since the number of items for the teacher and student's instruments differs by one item.

In parallel with the Item-Objective congruence, the CVC result for the TCQ shows twenty-six items having the highest coefficient of 1, validating the result from Item-Objective Congruence. Item number 15 is again proven to hold the lowest index

by having a 0.375 CVC. Combining from both methods of assessing content validity, TCQ has been proven to be valid regarding content.

Concurrent Validity

The concurrent validity was calculated by looking at two indexes, where the correlation of each of the indexes with TCQ was calculated. The two indexes are respect and mastery index. Gathered from the results, TCQ shows a moderate capability in predicting student's respect to a teacher (r= .487, p= .000). The results also suggest a moderate correlation between TCQ and mastery, suggesting it can also moderately predict student's mastery to a particular subject being taught by that corresponding teacher (r= .508, p= .000).

Table 3.
The Concurrent Validity Evidence of Teacher Competence Questionnaire

		TCQ	Mastery index	Respect Index
TCQ	Pearson r	1	.508**	.487**
	Sig. (2-tailed)		.000	.000
	N		261	261
Mastery Index	Pearson r		1	432**
	Sig. (2-tailed)			.000
	N			261
Respect Index	Pearson r			1
	Sig. (2-tailed)			
	N			

**. Correlation is significant at the 0.01 level (2-tailed).

Test-retest Reliability

The first attempt to ensure reliability is by measuring the test-retest reliability by providing one to three weeks between each

test. Sixty-seven participants were absent during retest, leaving the retest with only 197 participants out of the 264 valid participants. The result shows that the coefficient of stability is .830 (p =.000),

indicating a notable stability of individual differences between the first and second data collection.

Internal Consistency Reliability

The reliability measure of this study was divided into the reliability of each dimension as well as the reliability of the measurement as a whole structure. The standard was .2 for the corrected item-total correlation and = .6

for the Cronbach reliability measure. Two items (item number 15 and 28) must be eliminated because both were falling below the intended standard. These items are item number 15 and 28.

As a unit, the reliability of the data was high with the score of = .90, suggesting a high degree of reliability. As separate components, the reliability of each dimension is as illustrated below.

Table 4.
The numbers and names for each dimension, the Cronbach alpha value, and the range of the items illustrating the reliability measures for each, separate dimension

Dimension	N of Items	α	Range
1. Professional Knowledge	5	.704	.286-.572
2. Professional Skills	17	.794	.244-.580
3. Personal Characteristics	8	.792	.354-.602
4. Personal Ethical Standards and Values	7	.662	.310-.483
5. Professional Development and Lifelong Learning	5	.711	.330-.669

Discussion

Our analysis has indicated that TCQ has a good psychometric quality. After conducting validity and reliability testing, we conclude that TCQ is a good instrument to measure the competence of a teacher, especially within the Indonesian population. TCQ is also proven to be a fitting construct to define a competent teacher in Indonesia looking from the constructs and the five dimensions of TCQ that was adopted from the SEAMEO study (2010).

As an effort to have a valid instrument in measuring teacher competence, TCQ has been equipped with two strategies to ensure

that the participants are giving appropriate and accurate responses. The first strategy is by providing an item that is particularly designed to filter whether or not the participants give their response attentively (item number 39). Through this item, bias data will be easily identified. The second strategy includes utilizing several unfavorable items. The use of unfavorable items, in which we have to reverse the scores prior calculating the response, was believed to be an effective strategy to measure participants' level of consistency in responding to the questionnaire, and therefore would increase the accuracy of the response. Although several evidences suggest the ineffectiveness of reverse items

(i.e.: van Sonderen, Sanderman, & Coyne, 2013; Friedman, Herskovitz, & Pollack, 1993), the use of unfavorable items in this study was proven to be quiet effective, referring to the fact that there was only one out of five unfavorable items were eliminated in this instrument. Therefore, through the employment of these strategies, we believe that TCQ provides a more powerful and accurate depiction of students' perception regarding the performance of their teacher.

We highlighted several items that were eliminated due to inadequate item-total correlation score. Two eliminated items were from Professional Skills (item number 15) and Personal Characteristic (item number 28) dimension.

The participants' response to *"When I have problems in class, I solve it independently, without the teacher's intervention"* (item number 15) is not consistently related to their overall perception of the teachers' competence. Culturally, Indonesians live in a harmonious coexistence and helping each other is one of the most basic ethical codes in society. This cultural custom is reflected in the field of education because one's experiences in the society influence the teaching-learning practices and that education is inexplicably linked to civic life (Longo, 2007). The values learned in society are transferred to classrooms because school is considered as the preparation for upcoming life events. Socialization, a lifelong interactive process of cultural learning, involves different types of social actors and school is considered as one out of four socialization agents (Sunarto & Kamanto, 2004).
Interestingly, however, this study indicates that students tend to solve their problems in

the classrooms independently. This finding can be interpreted in several ways. The relatively low score on this item might indicate that respect for older individuals, a societal standard of living in Indonesia, makes students less receptive to the support given by teachers and more reluctant to ask for help. Another possibility is that the teachers have employed a teacher-centered instructional method for a long period. This instructional method clearly hampers the teacher's initiative to interact with the students thus rarely provides the students with extra help or assistance. This matter was not explored thoroughly due to the time constraint and will be further discussed in the Recommendation Section.

Furthermore, the elimination of item number 28 which is *"Teachers give compliments to other teachers in front of the students"* can also be connected to the Indonesian cultural aspect. Giving compliments publicly to personal attributes is sometimes considered as a false and artificial act, leading it to be frowned upon in some ethnic groups in Indonesia. Gu (1990) and Chen (1993) stated that compliments are accepted and appreciated in Western culture, yet, it is the exact opposite in Eastern culture.

Although those two items are not consistently related to their perception of the teacher's competence, the TCQ total item analysis showed that the respect the teacher earned from the students is significantly correlated to the students' academic comprehension in the subjects being taught by that teacher. This means that when students perceive their teacher to be competent, they show a certain degree of respect for that teacher. A good teacher-student relationship has important, positive and long-lasting implications for the

student's academic improvement and social development (Rimm-Kauffmann & Chiu, 2007). On the other hand, negative relationship between students and teachers can be detrimental to the students' academic and social-emotional development (O'Connor, Collins, & Supplee, 2012). These findings suggest a logical connection that an increasing level of teacher competence will improve the student's respect for the teacher. Another similar correlation is also found between the teacher competence and the student's perception of their own comprehension regarding the teaching materials. When students perceive their teachers to be competent, they gain more understanding of the materials taught by their teachers.

Our further analysis shows that for research purposes, a teacher whose TCQ score is 140 can be classified as a competent teacher, where those whose score is 157 are considered to be highly competent. However, considering the participants are only from certain areas in Jakarta, this interpretation shall be made with the precaution of its generalization.

This study is not without limitations. Firstly, we are aware of the relatively small number of participants in this study, especially considering the purpose of this study is to develop an instrument. Limited access and permission from the targeted schools are believed to be the main challenges that caused the small number of participants. Regardless, our study has met the minimum number of participants needed to validate an instrument as stated by Cohen and Swerdlik (2010). They determined that for an instrument to be well developed, a minimum number of participants needed are five times the number of instruments' items. Therefore,

in this study, the minimum number required is 205 participants. Secondly, the limited number of schools that participated in this study also suggests our limited ability to generalize the results of this study. The school population in this study was only within the parameter of South Jakarta and Tangerang. Nevertheless, we have successfully obtained data from various subjects or courses. As a result, TCQ can be used to measure the competency of a teacher specializing in different school subjects.

Conclusion

After conducting several statistical techniques, TCQ has been proven to be a valid and reliable instrument to measure teacher competence, especially in Indonesia. The five distinctive dimensions within the TCQ makes it able to produce a more detail analysis by identifying areas of strength and weakness of the teacher. However, considering the limited number of participants in this study, the cutoff point of TCQ score that is provided still needs to be interpreted with more caution.

Recommendation

The main challenge of this study was to have access and permission from the schools to participate in this study. Several schools were reluctant to participate in this study because they tend to think that the data collected from the students will reveal teachers quality of those schools, and will, in turn, threaten the school reputation. The schools' reluctance also occurred eventhough we have explicitly explained about the confidentiality of the data as well as the purpose of this study in the written consent and formal letter. This fact reflects

not only the low research knowledge but also very minimum research awareness and culture, even in the academic society. Therefore, some efforts to increase research awareness are urgently needed as a way to improve education quality in Indonesia. As a practical recommendation, future researchers should consider having approval or recommendation from relevant authorities prior asking schools to participate.

Considering that TCQ has a good psychometric quality, we recommend the schools to distribute the TCQ on a regular basis to evaluate teachers quality to improve the better learning experience. The recommended period to distribute the TCQ is at the end of each new teacher's first year of teaching. This is important since Azra (2002) found that teacher-centered pedagogy is the most common instructional method applied in Indonesia while the teachers are still having a lack of competence at the same time. Thus, the distribution of TCQ may encourage other studies as well as influence policy, programs, and methods to encourage better teaching and learning the process.

Acknowledgement

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