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Teacher interpersonal behaviour of Agricultural Vocational Schools in Indonesia: Profiles and Its Relation with Students' Intrinsic Motivation

Abstract:

This study attempts to describe the profiles of interpersonal behaviour of Indonesian agricultural teachers and to examine associations between students' perceptions of their teachers' interpersonal behavior and their intrinsic learning motivation from two different learning environments: competence-based (CB) and less competence-based setting. This study involved 1469 students from 49 classes in 15 public secondary vocational schools majoring in agribusiness from three provinces in Indonesia. Data were collected through (1) the Questionnaire on Teacher Interaction (QTI) for measuring the two dimensions in the QTI (proximity and influence) and (2) the four subscales of Intrinsic Motivation Inventory (IMI) for assessing the student's intrinsic motivation. The four subscales were *interest, perceive competence, feel pressure* and *effort*. The results show that a variety of interpersonal profiles could be detected, with different frequency of occurrence for CB and less-CB learning environment and the tolerant/authoritative profile was the most frequently reported by students in both learning environments. A one-way MANOVA revealed that the two dimensions of QTI related to the IMI subscales, with proximity has a stronger effect on less-CB than CB. The plausible explanation and practical implications then be discussed.

Keywords: Teacher Interpersonal Behaviour Profile, Competence-Based Education, Agricultural Vocational Schools, Student Intrinsic Motivation, Indonesia

1. Introduction

Researchers in classroom learning environment area have indicated the importance of teacher-students relationship with student's outcome. Healthy teacher-students relationships becomes a prerequisite for engaging students in learning activities (Brekelmans et al, 2000). Studies using the Questionnaire on Teacher Interaction (QTI) showed that students' perception on their teachers' interpersonal behavior relates to student's cognitive (e.g den Brok, 2001) and attitudinal aspect (e.g. den Brok, 2001; den Brok et. al, 2005; Telli et al, 2007b; Henderson & Fisher, 2008). The studies involve students from primary schools (e.g. Fisher, Waldrip & den Brok, 2006), secondary schools (e.g. Rickards, 1998; Lang et al, 2005; Maulana et al, 2011), and higher education (Fraser et al, 2010) as the subject of their studies. Although researchers have indicated the importance of teacher-students relationship, such studies that were conducted in vocational education setting are still limited (e.g. Henderson & Fisher, 2008; Uden et al, 2014).

Studies using QTI in Indonesian context had also been reported of limited number. Frasher et al (2010) reported the validity of QTI for higher education in management and computer classes, while Maulana et al (2012) reported the QTI validity for lower secondary education in Mathematics and English classes. Both studies confirmed the importance of students' perception on their teacher interpersonal behaviour on student's outcome in Indonesia. While the QTI instrument has shown to be valid in Indonesian context, little is known about teacher-student relationships in Indonesian agricultural vocational schools, particularly for competence-based education setting.

Investigating teacher interpersonal behaviour in competence-based education is important since competence-based education (CBE) is currently getting more and more attention from educational researchers and practitioners; has a secured place in vocational education

(Kouwehoven, 2003); and considered as a powerful learning environment (de Bruijn, 2011). For Indonesian context, this country has been using competence-based approach for its education system as it is stipulated on the explanation of Education Act No. 20 year 2003 (MoNE, 2002).

Competence-based learning environments have different characteristics than the traditional one. Competence-based learning environments is typically encourage students to be more self-directed, responsible for his or her own career path and motivating students so that number of student who discontinue their education program due to loss motivation is decreasing (Wesselink, 2010). For realising CBE, researchers recognized that CBE requires different roles of teachers. Besides as a knowledge transmitter, teacher should act as a coach in guiding students' learning (Biemans et al, 2004).

The present study investigates profiles of teacher interpersonal behaviour can be found in Indonesia agricultural education, and examine the associations between students' perception teacher interpersonal behavior and student's motivation in Indonesia competence-based versus less competence-based learning environments. The results of this study are useful for teachers, curriculum developers and policy makers in Indonesia and neighbouring countries sharing similar cultures, by providing empirical evidence into teacher behaviours that are common in Indonesian (and eastern) context.

2. Theoretical Frameworks

Competence Based Learning Environments and the changing roles of teachers

Competence-based education (CBE) has become a dominant trend in vocational education and training (VET) in several countries due to the expected decrease of problems in the transition from school to work (Biemans et. al., 2004; Wesselink et. al, 2007; Biemans et. al 2009). The

concept of competence-based approach has a strong position in VET (Kouwenhoven, 2003), was considered as a powerful learning environment (De Bruijn et al, 2011) and becomes the basis of the (re)design of VET (Wesselink, 2007). While competence-based education becomes a popular development, its operationalization in practice (i.e., what it should look like) remains still unclear. Wesselink et al. (2007) develop a framework to define explicitly what is meant by competence-based learning in Dutch education context. The framework consists of eight principles describing the essential elements that characterise competence-based VET. Sturing and her co-workers (2011) validated this model by looking at teachers' input which resulted on the ten principles of CBE. The ten principles are (1) The study programme is based on core tasks, working processes and competences (the qualification profile); (2) Complex vocational core problems are central; (3) Learning activities take place in different concrete, meaningful vocational situations; (4) Knowledge, skills and attitudes are integrated in learning and assessment; (5) Students are regularly assessed for variously purposes; (6) Students are challenged to reflect on their own learning (7) The study programme is structured in such a way that the students increasingly self-steer their learning; (8) The study programme is flexible; (9) The guidance is adjusted to the learning needs of the students; (10) In the study programme attention is paid to learning, career and citizenship competences (Sturing et al, 2011). These ten principles include of what and how CBE should look alike. This framework is complied with five level of CBE implementation form non-competence based until fully competence-based. This framework provides useful tool to determine to what extent a learning environment is competence-based regarding to the level of implementation CBE principles.

In CBE, teachers' roles become more complex (Biemans, et al, 2004; Seezink and Poell, 2010; Wesselink, 2010). Besides traditional teacher roles like 'knowledge transmitters', teachers

are boosted to act as coaches and as sources of information while interacting with students. Teachers are expected to develop authentic learning tasks for example by also assisting students for apprentices in cooperation with industries. As teachers' roles in CBE differ than the traditional one, different students' perception on teacher-student relationships from competence-based and non competence-based learning environment might be expected.

Teacher-Student Interpersonal Behaviour: Scales, Dimensions and Profiles

Teachers use various communication strategies while teaching their students in the classroom. Some teachers might try to be friendly with their students, but some might keep distant with them. Different strategies used by different teachers created different pattern of relationship between teacher and student. Within educational context, researchers conceptualized this teacher-student relationship in term of teacher interpersonal behaviour. Wubbels et. al (1985) developed a framework for conceptualising teachers' interpersonal behaviour based on the adaption of the work of Leary (1957) on interpersonal relationship and Watzlawick et. al (1967) on systems approach of communication. The adaption became the basis for the Model of Interpersonal Teacher Behaviour (MITB). MITB mapped teacher interpersonal behaviour using two dimensions namely 'proximity' and 'influence'. Proximity refers to the degree of teachers' cooperative/friendly behaviour to students. Influence refers the degree of teachers' control/dominance shown to students. The two dimensions are presented in a two-dimensional coordinate system that can be further sub-divided into eight sectors as leadership behaviour, helpful/friendly behaviour, understanding behaviour, giving students freedom and responsibility, uncertain, dissatisfied, admonishing and strict behaviour. Figure 1 shows a graphic representation of the Model for Interpersonal Teacher Behaviour.

- Insert figure 1 here -

With the eight sectors in the MITB, Wubbels et al (1989) introduced an instrument namely Questionnaire on Teacher Interaction (QTI) that consisted of 77 items for mapping teacher interpersonal behaviour. The QTI described teacher interpersonal behaviour on eight scales of Leadership (DC), Helpful/Friendly (CD), Understanding (CS), Student Freedom (SC), Uncertain (SO), Dissatisfied (OS), Admonishing (OD) and Strict (DO). Several studies had reported the reliability and validity of this instrument (e.g. Rickards et.al, 1996; Rickards, 1998; Kim et. al, 2000; Fisher, et.al, 2006). The QTI is also reported to be reliable and valid instrument for Indonesian context (Maulana et al, 2011).

While interacting with their teacher, students might view a teacher exhibiting those eight scales in different score. For example, teacher might be perceived as helpful, not too strict, giving students freedom, and understanding. Then, this combination of scores form a particular communication pattern of teacher interpersonal behaviour. Levy and Rodriguez (1993) clustered patterns teacher interpersonal behaviour into eight profiles of teachers as Directive, Authoritative, Tolerant/Authoritative, Tolerant, Uncertaint/Tolerant, Uncertain/Aggressive, Repressive and Drudging (see Figure 2). Researchers had reported their findings of these profiles from various countries with the different frequency of occurrence. In general, as the most common teacher-student interactions are represented by Directive, Authoritative, Tolerant and Tolerant/Authoritative were considered as. In Indonesia secondary schools all eight profiles have been detected with Directive teacher was reported as the most common found in Mathematics and English classes (Maulana et al , 2011).

Students' perception of teacher interpersonal behavior and student's learning motivation

The way students perceive their teacher interpersonal behavior connects with students' learning motivation. Research shows that with regard to the QTI scales, when students perceived their teacher as friendly/helpful they reported high in learning motivation (Brekelmans & Wubbels, 1991). Van Amelsvoort (1999) in Maulana et. al (2012) reported that helpful/friendly and understanding behaviours correlate positively with students' pleasure, relevance, confidence and effort.

When examining relation between the two QTI dimensions in (proximity and influence) and students' learning motivation, Den Brok (2001) found proximity dimension has greater effect than influence dimension on pleasure, relevance, confidence and effort which in science classess. Maulana et al (2011) asserted that both influence and proximity dimensions predicted intrinsic motivation.

Concerning on the typology of teacher interpersonal profiles, researchers found out the Directive and Tolerant correlate positively with students' engagement and motivation in classrooms (Brekelmans et al., 1993). Amongst all the mentioned types, highest motivation has been found in classess of Authoritative, Tolerant/Authoritative and Directive Teachers, while lowest motivation occured in classes of Drudging and Uncertain/Aggresive Teachers.

This study would focused on the associations of teacher interpersonal behaviour and students' intrinsic motivation as intrinsic motivation was considered as the . To measure students' intrinsic motivation, Deci and Ryan (2007) developed an instrument named as the Intrinsic Motivation Inventory. The IMI was a self-report instrument for measuring

interest/enjoyment, perceived choice, perceived competence, pressure/tension and value/usefulness. Perceived choice and perceived competence concepts are theorized to be positive predictors of intrinsic motivation, and pressure/tension is theorized to be a negative predictor of intrinsic motivation. The value/usefulness subscale is used based on the idea that people become self-regulating with respect to activities that they experience as useful or valuable for themselves (Deci & Ryan, 2007).

As students in CB were expected to be more self-regulated and responsible for their learning process, we expected that teacher behaviour in CB learning environment is less dominant (shown by the score of the influence dimension) than in the less CB learning environment. Less dominant means that teacher shared more responsibilities with students during the learning process.

3. Research Questions

This study would attempt to answer the following questions:

a. *What profiles of teacher interpersonal behavior, as perceived by students, can be found in competence-based and less competence-based learning environment in Indonesian vocational agricultural education? What profiles are more frequently reported in the CBE schools?*
b. *Does student's perception on teacher interpersonal behavior in Indonesian vocational education relate to the student's intrinsic motivation? And is this different for students in competence-based and less competence-based schools?*

4. Methodology

Participants

Data for this study were gathered from 49 agribusiness classes taught by 87 vocational core-subject teachers from 15 agricultural secondary schools in three most populated provinces in Indonesia. The selected school samples were based on that they are public, accredited and holding agribusiness study program. Selection of competence-based (8 schools) and less competence-based schools (7 schools) was conducted by looking at the presence of comprehensive CBE principles implemented at the schools (article in preparation).

Of these schools, class size varied from 14 to 38 students, with an average of 30 students. Classes were chosen by the teachers time, all students who were presence in the class during the data collection were asked to fill the instruments. A total number of 872 girls and 597 boys participated. Of the students, 765 were in their first year of vocational education (grade ten), 367 were in the second year and 337 were in their third year (grade twelve). Schools' participation was basically on a voluntary bases, while students got a small incentive for their participation.

Instrumentation

All students responded to two questionnaires: Indonesian version of the Questionnaire on Teacher Interaction (QTI) and the Intrinsic Motivation Inventory (IMI). The QTI was originally developed in the Netherlands with 8 scales and 77 items (Wubbels et al., 1985). Later, a 64-item American version was constructed. Maulana, et al (2012) validated the Indonesian QTI based on the American version and taking into account the Indonesian cultural context. The Indonesian QTI consisted of eight scales, 57 items on a 5-point Likert scale.

To check the quality of the Indonesian QTI for the present sample, reliability and validity analysis were conducted on the eight scales based on the data sample. We checked items that were problematic in term of the internal consistencies. The item '*this teacher closes the door before starting the lesson'*, for example, was deleted as this item in that scale decreased the cronbach alpha and did not match with the particular characteristics of agricultural classroom. Teaching and learning process in agricultural setting often happened outdoor for the whole period, so students might get confused in responding this item. Finally, the QTI used in this study consisted of 8 scales, 54 items provided in a 5-point likert scale from (1) never until (5) always. After deleting, the Cronbach's alpha for the different QTI scales ranged from 0.60 to 0.80 (see table 1).

The second questionnaire used in this study was the Intrinsic Motivation Inventory (IMI) by Decy & Ryan (2007). Prior data collection, we translated the questionnaire into Indonesian language and translated back into English, assisted by three English Foreign Language teachers. Then, we pilot-tested the instrument with students from agricultural vocational schools for its readability.

This IMI used in this present study consisted of four subscales with 28 items on a 7-Likert scale basis from (1) not all true until (7) very true. The IMI assessed students' rating on their interest/enjoyment, perceived competence, felt pressure/tension, and value/usefulness on a subject taught by their teacher. For this present study, the internal consistency for this instrument was satisfying as the coefficients of Cronbach Alpha ranged from 0.65 until 0.86 (see table 2).

- Insert table 2 -

We administrated the surveys in the middle of the first semester to ascertain that interactions had been happened among students and teachers.

Data Analysis

We computed the mean scores of the eight QTI scales, the two dimensions and standard deviations to obtain a sample description of the interpersonal behavior of agricultural teachers as perceived by their students. The mean score of QTI scales then was transformed into the 'proportion score' (e.g., a value between 0 and 1 representing the score out of the maximum possible on the scale) (Maulana et al, 2011). We, based on the proportion score, calculated the two dimension scores[1].

To investigate the difference scale score between CBE and less CBE, we performed a one way MANOVA. First, we grouped the samples into two with (0) for less CBE and (1) for CBE. The grouping is based on the presence of CBE principles as practised in the schools (article in preparation). In the MANOVA, we used the 8 QTI scales as the dependent variables and CBE as the grouping variable. The same procedure was applied for the dimension scores. Next, we transfered the mean scales and the dimension scores into the graphical profiles. Then we counted the frequency of profile occurrences in the two learning environments. To see whether the frequency of occurrences differ in those two learning environments, we conducted chi squared test.

[1] The dimension scores were calculated as follows (with the numbers before the scale labels representing the factor loadings): Influence = (.92*DC) + (.38*CD) – (.38*CS) – (.92*SC) – (.92*SO) – (.38*OS) + (.38*OD) + (.92*DO); Proximity = (.38*DC) + (.92*CD) + (.92*CS) + (.38*SC) – (.38*SO) – (.92*OS) – (.92*OD) – (.38*DO) (Maulana et al, 2011)

For answering the second research question, we firstly computed the mean scores for the four IMI subscales. We performed a one way MANOVA to investigate whether the students' rating on the four subscales different in CBE and less CBE. Then, we investigate the interaction effect of two QTI dimensions related to students' report on the subscales.

5. Results

Teacher Interpersonal Behaviour and Teacher Profiles in Indonesian Agricultural Education

The first research question is *what profiles of teacher interpersonal behaviour, as perceived by students, can be found Indonesian vocational agricultural education*? Before reporting the profiles of teacher interpersonal behaviour, we computed the eight scales QTI and the dimensions score. Since we are also interested in whether differences found in the two different learning environments, we performed a MANOVA test to compare the eight scales from the two groups. We applied the same procedure separately for the two dimensions. Table 3 shows the descriptive statistics of the scales and dimension score.

Table 3 showed that students from CBE reported higher in the scales of Leadership [$F(1,2983) = 24.200$, p value =0.00], Understanding [$F(1,2983) = 27.147$, p value =0.00], and strict [$F(1,2983) = 53.885$, p value =0.00] than students from less-CBE learning environments. Students from less CBE learning environments reported higher score for the scales of Students' freedom [$F(1,2983) = 8.448$, p value =0.04] and Uncertain [$F(1,2983) = 22.738$, p value =0.00]. There was reported no significantly different for the scales of Dissatisfied [$F(1,2983) = 0.560$, p value =0.454] and Admonishing [$F(1,2983) =1.207$, p value =0.272] .

- Insert table 3 here -

Related to the dimension score, table 3 showed that students both in CBE and less-CBE had patterns of perceiving their teachers as dominant and cooperative as indicated by the score in influence (DS) and proximity (CO). Difference in the dimension scores from CBE and less-CBE could be noticed for the influence dimension. Contrary to our expectations, students from CBE learning environment generally perceived their teacher is more dominant [DS : $F(1,2983) = 68.792$, p value =0.00] compare to students from the less-CBE. For the proximity dimension, there is no significant difference found [DS: $F(1,2983) = 1.738$, p value =0.188].

Based on the scales score, we investigated the pattern of teacher interpersonal the profiles as reported by students. The graphical figure of the QTI scales shows that based on students' perception, the common characteristics of teacher interpersonal behaviour as tolerant/authoritative. It is marked by the relatively high scores on the scales of Leadership, Understanding and Helpful and low score on the Dissatisfied, Uncertain and Admonishing.

- Insert figure 3 here –

For the interpersonal profiles, result revealed that all eight profiles could be detected in Indonesia agricultural schools both in CBE and less-CBE learning environments. The chi square test showed that there was a different frequency of occurrence in teacher profiles for those two different learning environments with the $\chi^2(1) = 51.098$, $p < 0.01$). Distribution of the profiles could be seen in the table 4. However, in general both students from CBE and less-CBE saw that the most common interpersonal profile in Indonesia agricultural classroom was tolerant/authoritative teachers.

- Insert table 4 -

Association between Student's perception of teacher interpersonal behavior and student's intrinsic motivation

Table 5 shows that students from CBE learning environments rated higher for the subscales of the interest, values/usefulness and lower in feel pressure. No difference is found for the subscale of perceive competence.

- Insert table 5 -

Does the way students perceive their teacher behaviour contribute to this difference? The second research questions deals with the associations between teacher interpersonal behavior and student's intrinsic motivation, as assessed of the four subscales in the IMI. We reported these associations based on the dimensions scores in CBE and less-CBE learning environments.

- Insert table 6 –

Results of correlation analyses indicated that student's perception of teacher interpersonal behaviour were correlated with the subscales of the IMI. In CBE learning environment, Proximity has significantly positive correlation with the subscales: interest/enjoyment ($r = 0.514$, $p<0.05$), perceived competence ($r = 0.295$, $p<0.05$) and value/usefulness ($r = 0.313$, $p<0.05$). Interest/enjoyment scale had highest correlation of all. The subscale of feel pressure/tension has negative correlation with this dimension ($r = -0.418$, $p<0.05$). Influence has positive correlation

with all of the three subscales, and negative correlatin with the feel pressure. The correlation coefficient in the influence dimension is lower in the proximity dimension. In general, proximity dimension is more closely correlated with the intrinsic motivation than the Influence dimension. When comparing the CBE versus the less-CBE, correlation coefficients of proximity on students' intrinsic motivation were found stronger in the less-CBE than in CBE learning environments.

6. Conclusion and Discussion

This study discusses the profiles of teacher interpersonal behavior as perceived by students in two different learning environments: CBE and less CBE from Indonesia agricultural schools and its relation with students' intrinsic motivation.

The results show that students in vocational education (both in CBE and less CBE) generally reported higher ratings for teacher's Leadership and Understanding behavior than for Uncertain, Dissatisfied and Admonishing behaviour, with different scores. This implies that Indonesian teachers were perceived to be more cooperative than hostile, which is in accordance with the most research finding in other countries.

Related to teacher interpersonal profiles, this study confirms the previous studies of teacher international behavior in Indonesia that all eight interpersonal profiles are detected. However, different from the finding of Maulana et al (2011) that the Directive profile as the most common teachers profile in Indonesia junior secondary schools, this study shows that the most often reported profiles by vocational students is the tolerant/authoritative. The characteristics of tolerant/authoritative teachers, according to Brekelmans et al (1993), are that the teachers

maintain a structure which supports student responsibility and freedom, use various learning methods to stimulate students respond well. Tolerant/authoritative teachers frequently organize their lessons around small group work and develop closer relationship with students. They enjoy the class and are highly involved in most lessons. Both students and teacher can occasionally be seen laughing. The teachers ignore minor disruptions such as students' breaking rules and prefer to concentrate on the lesson instead. Students work to reach their own and the teacher's instructional goals with little or no complains (Brekelmans, Levy & Rodriguez, 1993).

The fact that students both in CBE and less CBE learning environments see most of their teachers as tolerant/authoritative profile gave advantages for CBE implementation in Indonesia. CBE required teachers to more putting effort to stimulate students more self-directed, responsible for students' own career path. Teachers stimulate students to work collaboratively with their peers and manage the students tasks resemble to the task in working environment. However, in this study it was not shown that students in CBE perceive their teacher interpersonal behaviour as less dominant than in less-CBE. It suggest that teachers in CBE did not share greater responsibilities with their students and remained controlling student's learning process. It is probably because in Indonesian context, dominant teachers are more highly valued.

Concerning on the competence-based learning environment, this study gives empirical evidence on how students from different learning environments perceive their teacher interpersonal. Students from CBE learning environment reported having more positive teacher interpersonal behaviour than students from less-CBE. This probably due to the situation that in CBE classes, learning processes were designed not monotonously, more student-center approach, required more student's involvement actively and more authentic of workplace situation that enable students see the value of taking the task for their future career. As the perceptions

correlated with student's motivation, teachers need to maintain these positive perceptions to make student engaged in the learning process. Further, since effect of proximity is stronger in less-CBE learning environment, teacher who realised that his/her study program was not designed to be competence-based yet, the teacher should act more closely to students in order to enhance student's intrinsic motivation.

This study may benefit for teachers, program developers and policy makers. Teachers can identify which type of teacher interpersonal behavior they belong and then create healthy relationship with the students and improve their teaching skills. This research might also be useful for curriculum developers, school leaders and other stakeholders in designing a more competence-based learning environment. Scientifically, this study adds to the knowledge base on the importance of interpersonal behavior in relation to students learning motivation in vocational education setting, confirming the previous studies including in a specific learning environments competence-based education.

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Table 1. The QTI Scales and Cronbach's Alpha

Scale name	Description	Example of Items	Cronbach's Alpha
DC- Leadership	Dealing with how teacher provides leadership to class and hold students' attention	This teacher acts confidently.	0.727
CD- Helpful/friendly	Dealing with how teacher is friendly and helpful to students.	This teacher is friendly.	0.751
CS-Understanding	Dealing with how teacher shows understanding, concern, or care to students.	This teacher is patient.	0.780
SC-Student Freedom	Dealing with how teacher provides possibilities for students to manage their own activities.	We can influence this teacher.	0.612
SO-Uncertain	Dealing with how teacher shows his/her uncertainty	This teacher is hesitant.	0.603
OS-Dissatisfied	Dealing with how teacher shows unhappiness/ dissatisfaction with students	This teacher is suspicious.	0.741
OD-Admonishing	Dealing with how teacher shows anger/temper/impatient in class.	This teacher gets angry quickly.	0.799
DO- Strict	Dealing with how teacher is strict with and demanding of students.	This teacher is strict.	0.609

Table 2. IMI Subscale, sample item, and reliability (cronbach's alpha)

Subscale	Typical items	Cronbach's alpha
Interest/enjoyment	I enjoyed the subject very much	0.798
Perceived Competence	I think I am pretty good at this subject	0.771
Feel pressure/ tension	I tried very hard on this subject	0.651
Value/Usefulness	I felt very tense while doing task at this subject.	0.857

Table 3: The QTI Scale Mean, Standard Deviation and Dimension Score from CBE and less CBE[2]

QTI Scale	CBE		Less CBE		F	Sign.
	M	SD	M	SD		
DC- Leadership	0.7641	0.15644	0.7325	0.17184	24.200	0.000
CD- Helpful/friendly	0.7090	0.18760	0.6934	0.21772	3.956	0.047
CS-Understanding	0.7321	0.20804	0.6893	0.20171	27.147	0.000
SC-Student Freedom	0.2068	0.19413	0.2295	0.19943	8.448	0.004
SO-Uncertain	0.1497	0.15251	0.1804	0.18015	22.738	0.000
OS-Dissatisfied	0.3336	0.19630	0.3278	0.18690	0.560	0.454
OD-Admonishing	0.3025	0.21809	0.2929	0.22029	1.207	0.272
DO- Strict	0.5663	0.19188	0.5101	0.19281	53.885	0.000
Dimension:						
DS - Influence	0.8790	0.36520	0.7575	0.37282	68.792	0.000
CO - Proximity	0.8413	0.60972	0.8079	0.69492	1.738	0.188

Table 4. Frequency of occurrences of agricultural teacher interpersonal profiles in CBE and less-CBE

Profiles	CBE %	Less-CBE %
directive	15.5_a	17.9_a
authoritative	31.1_a	26.1_b

[2] Scale scores ranged between 0 and 1; Dimension score ranges between -3 and +3. Score 0 represents equal amounts of dominance and submissiveness, cooperation and opposition respectively. Range of scores are: 0 -0.5 (moderately positive, 0-5 -1.00 (positive) and above 1 (positive) (Maulana et al, 2011)

tolerant/authoritative	33.5_a	36.2_a
tolerant	0.6_a	0.9_a
uncertain/tolerant	0.2_a	0.2_a
uncertain/aggresive	0.5_a	2.8_b
repressive	16.7_a	12.4_b
drudging	1.9_a	3.4_b

The subscript letter shows whether the significant difference found for the column proportions .05 level.

Table 5: The IMI subscale Mean, Standard Deviation and Dimension Score from CBE and less

IMI Subscale	CBE		Less CBE		F	Sign.
	M	SD	M	SD		
Interest/ enjoyment	5.4338	.98944	5.2624	1.16263	16.931	.000
Perceived competence	4.6984	.96623	4.6615	1.06541	0.865	.352
Feel Pressure/ tension	3.0144	1.31217	2.9040	1.27047	4.543	.033
Value/ Usefulness	6.3463	.78859	6.1641	.92002	30.277	.000

Table 6. Correlation coefficients of QTI dimension scores and IMI subscales

Dimension		Intrinsic Motivation Subscales			
		Interest/ enjoyment	Perceived competence	Feel Pressure/ tension	Value/ Usefulness
Influence	CBE	0.235^{**}	0.113^{**}		0.279^{**}
	Less CBE	0.417^{**}	0.223^{**}		0.312^{**}
Proximity	CBE	0.514^{**}	0.295^{**}	-0.418^{**}	0.313^{**}
	Less CBE	0.682^{**}	0.391^{**}	-0.385^{**}	0.385^{**}

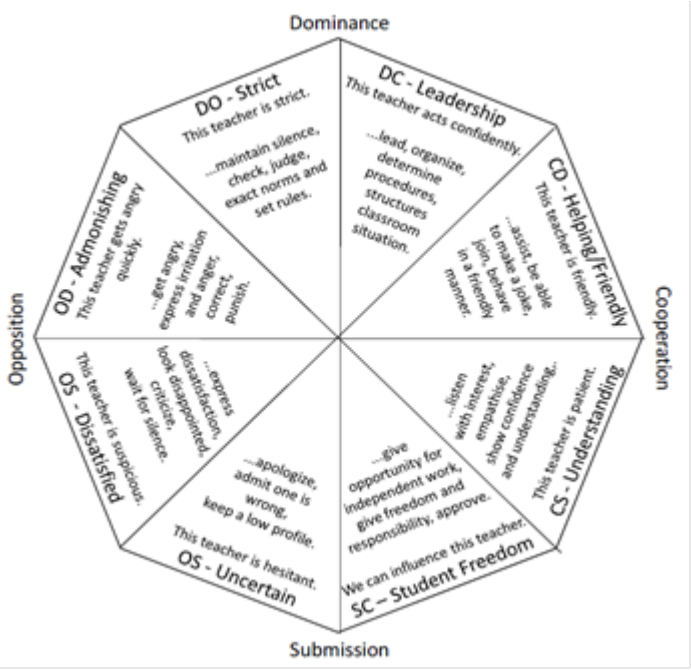


Figure 1. The Model for Interpersonal Teacher Behaviour (Wubbels & Brekelmans, 2005)

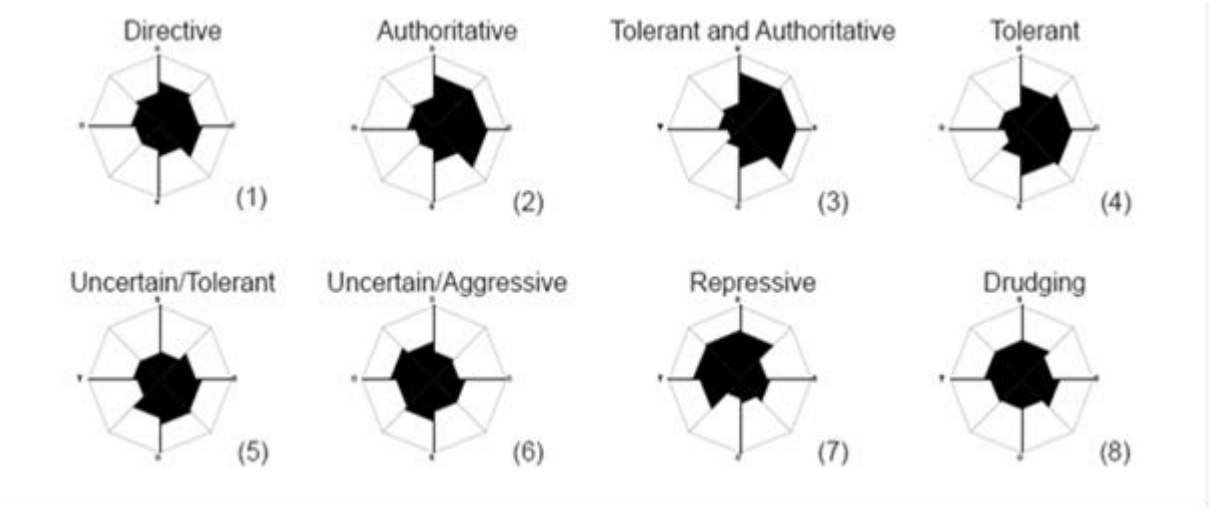
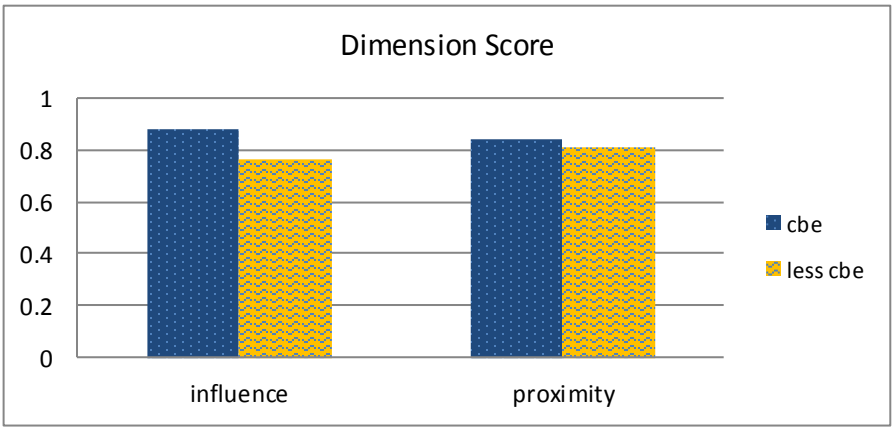
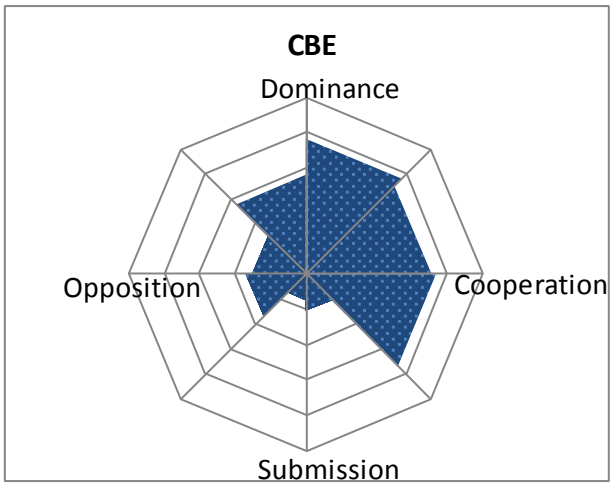


Figure 2. Profiles of Teacher Interpersonal Behaviour (Brekelmans, 1989 in Maulana, 2011)





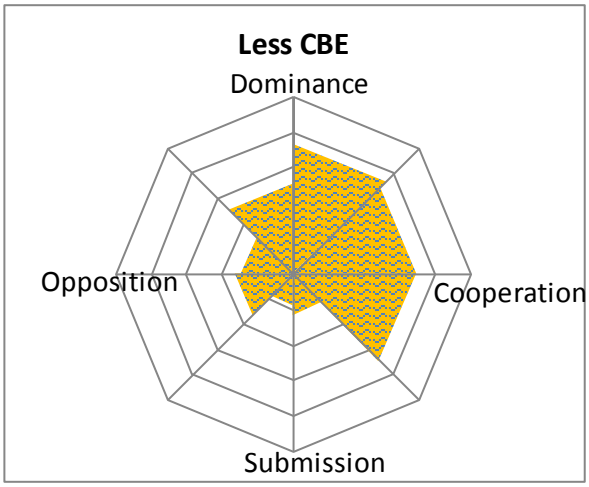


Figure 3. The dimension scores and graphical profiles of student perception on teacher interpersonal behaviour from CBE and less CBE learning environments