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Evaluating competence-based vocational education in Indonesia

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ABSTRACT

This paper investigates the realisation of competence-based education (CBE) in vocational education in Indonesia. It examines the extent to which CBE design principles of the Comprehensive Competence-Based Education Framework developed in a Western context exist in Indonesian policy documents and school practices. This study reviews educational policy documents and collects cross-sectional survey data from 41 school principals, 453 teachers, and 2219 students from 41 agricultural vocational schools in five provinces of Java, Indonesia. Results showed that the ten CCBE principles listed in the framework exist to large extent in Indonesian policy documents. School principals, teachers, and students noticed the realisation of CCBE principles in the study programme to differing degrees, except for the principle of flexibility that was largely absent. The level of CBE implementation varied, from the level of *starting competence-based* to that of *largely competence-based* education. The findings contribute to the discussion of CCBE design principles and lesson learned of CBE implementation in a non-western perspective.

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Competence-based education; vocational education; agricultural schools; Indonesia

Introduction

Recently, scholars and policymakers are paying more attention to the use of competence-based education (CBE) in vocational schools and higher education, and in developed or developing countries (Illeris 2009). The concepts of competencies and competence-based education have become important considerations in educational reform agendas, as in, for example, Australia (Smith 2010) and the United Kingdom (Velde 1999), and are discussed continuously in curriculum redesign of vocational education and training in various countries in Europe (Brockmann et al. 2008; Mulder, Weigel, and Collins 2007). CBE is expected to better prepare students for the labour market, stimulate students' competence development, increase their motivation, and decrease school

dropout. Despite CBE gaining in its popularity, scholars identify several pitfalls in its implementations. Biemans et al. (2004) summarise the pitfalls of CBE implementation as, among others, the lack of a clear definition of competence, problems with standardising among students, and shifting roles of teachers and students. Wesselink et al. (2017) show that educational institutes, certainly in (higher) vocational education, extensively experimented with implementing CBE in the last decade, but that implementation problems still exist, and that evidence of its effectiveness in terms of stimulating student learning and motivation is still scarce.

Another issue is that CBE, with its underlying design principles, is mainly developed and studied in Western educational contexts. Some argue that implementing CBE in non-western contexts and learning cultures might encounter obstacles that are comparable but probably also different from Western countries (e.g. Halsema 2017). However, studies of CBE implementation in non-Western countries are underrepresented in literature. Examining CBE implementation from a non-western perspective offers insights into how CBE theory and its implementation can be improved and how its effectiveness can be studied.

This study examines CBE implementation in the Indonesian education system, with a specific focus on senior secondary vocational education (see Figure 1). This country has initiated using competence-based learning in its education system since 2004, as mandated by the Education Law No. 20 year 2003 (MoNE 2004). While CBE has been used for more than a decade, accessible information concerning the realisation of CBE in Indonesia is still scarce. The studies that do exist examine the introduction of a competence-based curriculum as a means of educational reform in

Age	Grade	Level	Formal Education		Vocational Education				Non-formal Education
		Higher Education	Islamic S3 Program	Strata 3 Program	Specialist Program 2				Open University
			Islamic S2 Program	Strata 2 Program	Specialist Program 1				
22	16		Islamic Strata 1 Program	Strata 1 Program	Diploma 4 Program	Diploma 3 Program	Diploma 2 Program	D1 Program	
21	15								
20	14								
19	13								
18	12	Secondary Education	Islamic upp. Secondary School (MA)	General Upper Secondary School (SMA)		Vocational Secondary School (SMK)		Paket C	
17	11			Lower Secondary School (SMP/SLTP)					
16	10								
15	9	Basic Education	Islamic low. Secondary School (MT)	Lower Secondary School (SMP/SLTP)				Paket B	
14	8								
13	7			Primary School (SD)				Paket A	
12	6								
11	5								
10	4								
9	3								
8	2								
7	1								
6		Pre-school Education	Islamic Pre-school	Kindergarten (TK)					
5									
4									

Remarks:
 Strata 1, 2, 3 (S1, S2, S3) are equivalent to Bachelor, Master, Ph.D.
 Specialist programs are programs for academic and/or professional further education
 Basic education is compulsory and free of charge
 Pre-school is optional

Figure 1. Indonesian education system.

Indonesia (Raihani 2007), teacher readiness in implementing competency-based learning in the classrooms (Sulfasyah 2013; Utomo 2005), and CBE developments in Indonesian higher education (Nederstigt and Mulder 2011). Studies that specifically examine CBE in secondary vocational schools are hardly found, despite the fact that CBE is specifically suitable for and applicable to vocational education (Kouwenhoven 2003) as this type of education has a strong direct link to professional practice and aims at preparing students for the labour market. This study starts to fill this gap. For this purpose, this study triangulates information from educational policy documents and perceptions of various school stakeholders: school principals, teachers, and students. By doing so, the findings of this study help the Indonesian government to make determinations about follow up activities and support for improving the vocational education system. In addition, it informs our knowledge on competence-based education and its underlying design principles, while contributing to the understandings around how this educational innovation, which originated in one culture and in this case a Western culture, is interpreted and implemented in a different learning culture. To begin with, the following section elaborates further on the CBE framework that is used to evaluate CBE implementation in Indonesia.

Theoretical framework

The comprehensive competence-based education framework

Competence-based education, as an example of outcome-based education (Harden 2007; Young 2009), has been trending in curriculum reform of vocational education and training (VET) all over the world (Achtenhagen and Winther 2014; Biemans, Nieuwenhuis, Poell, Mulder, and Wesselink 2004; De Bruijn and Leeman 2011; Mulder 2017). Expected advantages of CBE, compared to more traditional, knowledge-oriented education, are that students are better equipped for and motivated to enter the working world, as CBE aims at fostering students' knowledge, skills, and professional attitudes development through learning in authentic workplace contexts (Biemans et al. 2004; Biemans et al. 2009; Wesselink et al. 2007).

In a quest for making competence-based education applicable to educational practice, Wesselink et al. (2007) propose a framework for describing a coherent and comprehensive definition of competence-based education (CBE) comprising eight design principles. This framework adopts the holistic, integrated, and situated conceptualisation of competence (Cheetham and Chivers 1996; Mulder 2017). This means that competence is an integrated set of knowledge, skills, and attitude that derives its meaning in the (occupational) context or task in which it is used. The CBE framework also adopts a comprehensive approach to educational design, meaning that educational design for CBE requires that all principles are taken into account when changing towards and implementing competence-based education (Wesselink et al. 2007).

The framework, and its eight design principles with four levels of development, aims to operationalise what CBE looks like and what developing it entails. It strongly links educational practices to vocational practices to help bridge the gap between education and the labour market. It provides practical handles for educational practitioners to start competence-based education implementation and to evaluate the degree of the development in a curriculum. The initial Comprehensive Competence-Based Education (CCBE) Framework (Wesselink et al. 2007) comprises literature study, focus group meetings, and a Delphi study conducted with educational researchers. Sturing et al. (2011) validate the CCBE framework by gaining information from the teachers' perspective, as teachers have an important role in implementing the CBE curriculum practices. The validation of Sturing and colleagues result in an elaboration of the eight initial CCBE principles, expanding into ten CCBE principles. These are: (1) The study programme is based on vocational core tasks, working processes, and competencies (the qualification profile); (2) Complex vocational core problems are central to learning and assessment tasks; (3) Learning activities take place in different, meaningful vocational situations; (4) Knowledge, skills and attitudes are integrated in learning and assessment; (5) Students' development is 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 program is flexible in that it allows students to have opportunities to learn and progress at their own pace; (9) Teachers guide student learning and this guidance is adjusted to the learning needs of the students, and (10) The study programme pays explicit attention to learning, career, and citizenship competencies. These ten principles are each described on five levels of development from *not competence-based* (score 1) to *fully competence-based* (score 5) (see Appendix 1). Based on how schools rate themselves on the development levels of the ten principles, a 'competentiveness score' can be calculated showing the degree of CBE implementation (Sturing et al. 2011). These ten CCBE principles, the levels, and the competentiveness score is used to examine CBE implementation in Indonesian vocational education in this present study.

The validated CCBE framework promises to be a valuable tool for schools and teachers to reflect on their curriculum and teaching practice, as well as providing a means to self-evaluate the degree to which their own practices are aligned to those principles. However, the framework is developed and mainly tested in a western context, representing more individualist societies. Hofstede and Hofstede (2005) characterise the Indonesian learning culture as a collective society. It is not yet clear to what extent the CCBE principles, which are developed in a more individualist society, can also be applied in a more collective society. There are some initial attempts at evaluating competence-based education implementation in Uganda (e.g. Mulder and Kintu 2013), Ethiopia (Solomon 2016), and Indonesia (Nederstigt and Mulder 2011). Nederstigt and Mulder (2011) examines

three study programmes from two universities in the faculty of agriculture and faculty of medicine in Indonesian Higher Education. Their study shows that the CCBE framework offers a fruitful starting point for studying CBE implementation in Indonesia. This present study expands the previous studies by adopting the CCBE framework to study the realisation of CBE in Indonesian vocational education. We discuss findings in the light of cultural characteristics as well. Any country having similar collective characteristics, and are in the process of adopting competence-based education can benefit from the lessons learned in the CBE implementation in Indonesia through this explorative study.

The implementation of competence-based curriculum in Indonesia

In 2004, the Indonesian Government initiated implementation of competence-based education, as mandated by Law Number 20/2003 concerning the Indonesian national education system. Competence-based education was named *Kurikulum Berbasis Kompetensi* (KBK: Competence-Based Curriculum) in the Indonesian context. The KBK was introduced to replace the previous centralised and content-based curriculum. The government piloted the KBK for two years, and launched the curriculum officially as *Kurikulum Tingkat Satuan Pendidikan* (KTSP: school-based curriculum) in 2006. The KTSP gives schools more autonomy to develop their own curriculum, building on the national guidelines provided by the Ministry of Education and Culture. The KTSP does not only represent the vision statements of Indonesia education, but also includes the list of core competencies students should learn and achieve in their learning trajectories. Additionally, the KTSP documents state the operationalisations of effective teaching and learning which are comparable to the CCBE principles in the CCBE frameworks. The extent to which these two approaches are comparable are further examined in this paper. Thus, this present study investigates competence-based education in the Indonesian vocational education context by examining the KTSP curriculum.

A curriculum, according to Jenkins and Shipman (1976), is the formation and implementation of an educational proposal to be taught and learned within the school or other institution for which that institution accepts responsibility at three levels: its rationale, its actual implementation, and its effect. Curriculum policies flow down from authoritative sources through the medium of school (Pinar et al. 1995) while the curriculum implementation comprises educational experiences jointly created by teacher and student (Snyder, Bolin, and Zumwalt 1992). van Den Akker (2003) makes a distinction between three curriculum representations as the intended, the implemented, and the attained curriculum. The *intended* curriculum refers to the vision or underlying philosophy of the curriculum and the intentions specified in formal curriculum documents, for example: the educational policy documents. In our current study, this is described in the KTSP documents. The *implemented* curriculum refers to the

curriculum as interpreted by those who must implement it in the classroom, also called the operational curriculum, i.e., the actual process of teaching and learning as reported by teachers. In our study, the implemented curriculum is evidenced in teacher interpretation of the KTSP documents and subsequent translation into educational practices. The *attained* curriculum refers to learning experiences and learning outcomes which in this study refer to how vocational students perceive and experience the implemented learning activities and processes.

Considering the various aspects of curriculum representations, this study evaluates competence-based education in Indonesian vocational education from gathered information from various sources, i.e., policy documents, participation of and feedback from school principals, teachers, and students. School principals' perceptions are considered important as school principals have a significant role in connecting the national policies to the school. Perceptions from teachers and students give insights into authentic and realised practices of the CBE implementation in the classroom context. In short, this study aims to reveal the extent to which CCBE principles are activated by the Indonesian policy documents, and how the principles are implemented in the estimation of school principals and teachers, and how principles are then experienced by students in a wide sample of vocational schools in Indonesia.

The context of this study

This study is situated in the context of Indonesia during a time period beginning in 2004 when its newly adopted competence-based learning programme was introduced and overlaid onto its then-existing educational system, until the time of this study. In Indonesia, students should have 9 years compulsory education before entering senior secondary school (age 16–18 years). The compulsory education consists of six years in primary school (age 7–12) and three years in junior secondary school (age 13–16). Although the government encouraged children to start school in an early childhood education (age 4–6), but it is not compulsarily. After finishing the junior secondary education, student can opt to general or vocational schools, the context of our study.

Currently, there are 464,334 students registered in 13,578 schools for senior secondary vocational education of which 269 schools offer food processing and technology (MoEC 2016). Students in Indonesia can start their vocational education after they finished their nine years compulsory education. They are mostly between 16–18 years of age. Senior secondary vocational education takes three years, except for special programmes that last for four years (see [Figure 1](#)). When students graduate from these schools, they are expected to be in level 2 out of 9 in the Indonesian Qualification Framework (IQF), which is the equivalent of level 3 in the European Qualification Framework.

The vocational programmes included in this study all offer agricultural food processing and technology. Students from these agricultural food processing and

technology programmes should master the basic concept of food processing technology, such as physical and chemical characteristics of foodstuffs, post-harvest handling technology, quality testing of material and food products, food packaging technology, food sanitation, technological processing of agricultural products (vegetables, animal, herbal, fisheries), waste management, and so forth. When they graduate, they are prepared to work in a formal sector such as becoming a technician for production, packaging, logistics, quality control, waste management in, for example, a food manufactory or in a supermarket/retail stores. In 2016, there are 31.9 million of employment working on agriculture sector which 11.5% are in this formal sector (Dong and Manning 2017). Beside working in a formal labour market, graduates can also work in an informal labour market such as in micro and small firms of a food product, or in a food home industry. Rothenberg et al. (2016) reported that a substantial number of firms (93%) in Indonesia were informal. The informal sector does not require the worker to have a formal qualification. However, they earn less wage and less benefits. Therefore, working in a formal sector is more preferably which make the formal qualification, the prerequisite to enter in a formal sector, is important and rewarded in the society.

Research questions

To guide our study, the research questions in this paper are as follows.

- (1) *To what extent are the CCBE principles (developed in a Dutch context) represented in the Indonesia educational policy documents?*
- (2) *To what extent do school principals, teachers, and students of agricultural vocational education institutions in Indonesia recognise the CCBE principles in their study programme?*
- (3) *What is the level of competentiveness of agricultural vocational education in Indonesia?*

Material and methods

Participants

This study involves 41 agricultural vocational secondary schools selected from the Data Pokok SMK (Vocational Schools Database) from the Indonesian Ministry of National Education based on the following criteria: first, they offer a study programme of agricultural food processing technology, second, they are public schools under the auspices of the Ministry of Education, and third, they are accredited by the Board of National Accreditation (BAN). Those criteria are chosen as these schools are obliged to implement the competence-based education policies from 2009 onwards. All school samples are located in Java, the most populated and modernised island in Indonesia. Our study includes five provinces

of Java island. (Jakarta province is not included in this study as there are no vocational schools in Jakarta that offer agricultural food processing and technology.) Participating schools in the five provinces are comparable in terms of the types of agricultural industries located in them. All provinces have farms that cultivate rice, corn, and soybeans, and have firms manufacturing soy sauce, tempeh, dried fruit, and syrup. Additionally, in these five provinces students share similar characteristics in terms of social and cultural background. The sample has features representative of the (agricultural) secondary vocational schools on Java. The researcher contacted all sample schools to ask whether or not they were willing to participate. Schools were informed that there were no incentives for participation, so the participation was on a voluntary basis.

In total, 41 schools participated. Of these schools, 41 principals, 428 teachers (48% male) and 2219 students (35% male) participated. Teacher age ranged from 21 to 59 years old, and their teaching experience ranged from 1 to 32 years. The students all studied agricultural food processing technology. The average student age was 16.96 years old, and most of the students were at the end of their study programme (grade 12) meaning that they had experienced nearly the whole learning trajectory and had a clear picture of CBE implementation in their study programme.

Instrumentation

CBE policy documents

To address the first research question in examining whether and how CCBE principles are reflected in the Indonesian documents, the study firstly reads through the Education Law, Government Regulations, the Ministry of Education Policy, and relevant materials to curriculum development. The documents are reviewed on information concerning (1) the curriculum and specification of the study programme; (2) the instruction and the role of teacher in reference to teaching practice; (3) the assessment procedure, and (4) the graduate competence (Sturing et al. 2011, 96). This results in a selection of policy documents relevant for competence-based education implementation as presented in [Table 1](#).

To answer research question 2 and 3, this study uses two instruments to collect data related to the implementation of CCBE principles in school practices: (1) the CCBE Matrix and (2) Inventory of Perceived Comprehensive Competence-Based Education (IPCCBE).

CCBE matrix

The CCBE matrix is a tool for evaluating CBE implementation (Sturing et al. 2011) (see [Appendix 1](#)). It consists of ten CCBE principles that include indicators for five levels of competence-based implementation starting from (1) *not competence-based* to (5) *fully competence-based*. Using this matrix, one can

Table 1. Policy documents relevant for the competence-based education in Indonesia.

No	Documents	Content	Source
1.	Law No. 20/2003. Indonesian National Education System	The National Education System as the highest source of educational regulation in Indonesia	MoNE, 2003
2.	Presidential Regulation No. 8/2012 concerning The Indonesian Qualification Framework.	The description of competencies needed for jobs.	MoLHR, 2012
3.	Government Policy No. 19/2005 concerning National Standards of Education.	The standards and outputs that educational programmes should meet.	MoLHR, 2005
4.	Ministry Decree No. 23/2006 concerning Standard of Graduate Competence.	The general qualifications of students that are expected to perform when finishing learning trajectories, covering knowledge, attitudes, and skills.	MoNE, 2006a
5.	Ministry Decree No. 22/2006 concerning Standard of Contents.	The more detailed explanation about the knowledge, skills, and attitudes of students that are expected to perform for each level of competence.	MoNE, 2006b
6.	Ministry Decree No. 41/2007 concerning Standard of Process.	The standard of teaching and learning to facilitate students reaching competencies required in the curriculum.	MoNE, 2007a
7.	Ministry of National Education Decree No. 20/2007 concerning on Standard of Assessment.	The standard of assessment procedure in evaluating student learning' outcome.	MoNE, 2007b
8.	The Professional Service of Curriculum 2004.	The effective principle of teaching and learning to support the piloting of KBK. The government issued this guideline as a supplement to KBK curriculum documents.	MoNE, 2003
9.	The Guidelines of Curriculum Development for primary and (general & vocational) secondary education.	The description of guideline for helping schools to implement the policies regarding competence-based education. The government issued this guideline as a supplement of KTSP curriculum documents.	BSNP 2006

evaluate the extent to which the CBE principles are realised in an educational programme. The matrix proves to be reliable with good content validity in the Dutch context (Sturing et al. 2011). For this present study, the CCBE matrix and indicators are translated into Indonesian language by a teacher teaching Dutch Language and an authorised translator prior to the data collection. Two educational experts from Indonesia reviewed the Indonesian version CCBE matrix to ensure its clarity and readability. During the data collection, school principals used the CCBE matrix to score the implementation level (1–5) of the ten CCBE principles for their agricultural food processing study programme.

IPCCBE

Teachers and students' perceptions on the degree of implementation of the ten CCBE principles are collected using the Inventory of Perceived Comprehensive Competence-Based Education (IPCCBE). (IPCCBE was originally developed by Wesselink et al. (2007) to gather perceptions of teachers and students regarding the competentiveness of their study programme.) The initial questionnaire consisted of 19 items using a five-points scale from 1 (strongly disagree) to 5 (strongly agree) addressing the eight principles of the initial CCBE Framework (Wesselink et al. 2007). Wesselink (2010) reported that the reliability of the IPCCBE was problematic for vocational education in the Netherlands, partly due to the limited number of items per principle. For this present study, therefore, the IPCCBE was redesigned by adding items per scale as well as adding items addressing the two additional principles¹ of Sturing et al. (2011). This results in 36 five-point Likert scale items for our version of the IPCCBE. Two examples of student questions are:

- (1) The competencies that are put central in the study programme are relevant for my future job.
- (2) During the learning trajectory, I became increasingly responsible for my own learning process.

For teacher questions, we changed the wording a bit to relate to teachers, e. g. 'During the learning trajectory, the students became increasingly responsible for their own learning process'. Fourty students and nine teachers from general and vocational secondary schools pilot-tested the Indonesian version of IPCCBE prior to the data collection. These pilot tests led to some minor changes in the phrasing of items. The reliability test for the IPCCBE in this present study is sufficient as the Cronbach Alpha coefficients range from 0.67 for principle 5 (assessment) until 0.92 for principle 2 (vocational core subject). Thus, the IPCCBE provides a reliable instrument for measuring teacher and student perceptions on the implementation of CCBE in the Indonesian context.

The 41 schools which agreed to participate also helped arrange the data collection process in terms of how student and teacher data was gathered. The data collection was conducted during one day for each school, so that the

different participating groups (i.e., principal, teachers, and students) within a school could not interfere in each other's stakeholder responses. The first researcher was present in the class to assist students for any necessary clarification during the data collection conducted in January – March 2012. To ensure confidentiality, we did not ask teachers and students to provide any personally identifying information, e.g., name and identity number.

Analysis

To analyse whether and how CCBE principles are represented in the Indonesian policy documents, this study identifies relevant statements in the selected policy document and links them to the ten principles in the CCBE framework. The first researcher conducted this analysis. An educational expert from Indonesia and an English language teacher checked the conclusions for conformity.

Quantitative analyses are conducted per CCBE principle across all schools and per school to address the second and third research questions. Combining the data across all schools, giving an idea of the mean level of CBE implementation across the 41 vocational schools in Indonesia. For this purpose, mean scores for the school principals are calculated per principle. The principle mean scores of the teachers and of the students separately are analysed using one sample *t*-test, to discern whether or not the stakeholders' mean scores differ from the scale mean of 3. The value 3 demonstrates that respondents are neutral regarding specific statements. Mean scores significantly higher than 3 indicate that the teachers or students recognise a specific CCBE principle in their study programme. To calculate the competentiveness score per school, this study triangulates the ratings from students, teachers, and school principals for each school per principle. The aggregated mean scores taken from the three groups of participants for each school are calculated and presented as a school competentiveness score.

Results

CCBE principles in Indonesian educational policy documents

This section addresses the first research question dealing with the extent to which the CCBE principles appear in Indonesian educational policy documents. For reporting these results, this study follows the idea of Sturing et al. (2011) and Baraki, Negash, and Asfaw (2016) to cluster the 10 CCBE principles into four: 1) Competencies, core tasks, and linkages to the labour market (principles 1, 2 and 3); 2) teaching and learning in CBE (principles 4, 6, 7, 8 and 9); 3) competence assessment (principle 5), and 4) career, lifelong learning and citizenship (principle 10).

Competencies, core tasks and linkages to the labour market

The first CCBE principle focuses on what students should be able to do after completing the study programme and if competencies are framed as requirements for future professions. The Indonesian policy documents, i.e., the graduate competence standard (nr. 4) and the Indonesian Qualification Framework (nr. 2), describe the outcomes of educational programmes in terms of competencies. This is the first step towards competence-based education. The term 'kompetensi', which refers to 'competence or competency', appears nine times in the Law No. 20/2003, showing that competence development indeed has become the goal of the educational system in Indonesia.

Principle 2 of the CCBE framework deals with the degree to which complex vocational core problems are put central to learning and assessment tasks in the vocational curriculum. In developing their educational programme, the Indonesian documents explicitly encourage schools to collaborate with local contexts and industries to identify the core tasks. The Guidelines of Curriculum Development (BSNP 2006, nr. 9) encourages schools to develop their own curricula based on the guidelines provided by the government, industry, and competencies listed in the Indonesian Qualification Framework. The Guidelines explicitly require schools to show how their educational programmes link to students' future jobs. The Guidelines give greater autonomy to schools to manage their own curriculum, and to align with local context and societal needs. In doing so, the regulation strongly encourages teachers and industries to become involved, partnering in designing curricula that are representative of the labour market and professional tasks. These documents stress the importance of linking competencies taught in the vocational subject to students' future jobs.

With respect to learning activities that should take place in different, meaningful vocational situations (principle 3), the Guidelines of Curriculum Development (nr. 9) students are to be encouraged to learn by experience both in simulated classroom contexts and in the workplace environment (BSNP 2006). The regulation requires students to have real work experiences. In responding to this regulation, schools send students out to work in a relevant institution/industry for about two months to learn how to perform tasks in future jobs and to acquire competencies required to perform tasks in the jobs.

Teaching and learning in CBE

Concerning the teaching and learning in CBE, the CCBE framework addresses the importance of integrating knowledge, skills, and attitudes (principle 4), changing the teacher role from merely knowledge transmitter (principle 9), with an increased responsibility of learner for his/her own learning process (principle 7). In Indonesian policy documents, the Guidelines of Curriculum Development (BSNP 2006, nr. 9) state the effective and ideal principles of teaching and learning processes which support successful implementation of

a competence-based curriculum: student-centred learning, active learning, the role of the teacher as a facilitator, student interaction to promote learning, assessment for learning, and a thematic approach to learning.

With respect to the importance of integration of knowledge, skills, and attitudes in learning and assessment (principle 4), Government Policy No. 19/2005 (nr. 3) and the graduate competence standard state explicitly that competency covers attitude, knowledge, and skill. The documents defined the term 'kompetensi' (competence) as the integration of knowledge, skill, and attitudes. Furthermore, the Guidelines of Curriculum Development describe the learning perspectives underlying the Indonesian CBE, i.e. KTSP, as 'thematic approach' which refers to the integration of two or more subjects in order to provide a meaningful learning experience for students, and involve both cognitive and physical processes (BSNP 2006). This indicates that aspired student learning outcomes do not only relate to having knowledge but also to the ability to apply the knowledge to perform particular tasks. This perspective on meaningful learning and aspired learning outcomes relates to a large extent to the perspectives underlying the CCBE framework.

The CCBE framework stresses that learning should be student-centred in which students should be stimulated to reflect on their own learning (principle 6) and increasingly steer their own learning (principle 7). The importance of student-centeredness is found in the Guidelines of Curriculum Development (BSNP 2006, nr. 9), stating:

'The development of the curriculum is based on the principle that learners are at the center of curriculum development ... Learners' competencies should be developed on the basis of their potential, their developmental level, their needs, benefit to them and the demands of their environment. Thus, having a central position in this context means that learning activities are learner-centered (translated from BSNP 2006, 5).'

This quotation shows that the curriculum should be designed and delivered through learning processes that are active, creative, effective, and joyful where the focus is on students. The process facilitates students to increase their curiosity and imagination. These statements all relate to principles 3, 6, 7, and 9 in CCBE framework. Thus, the Indonesian regulation envisaged students actively participating in the learning process. Teacher and students share responsibility for the learning process, practice self-evaluation and reflection, and collaboration between teachers and students is explicitly promoted (BSNP 2006).

With regard to the principle of flexibility (principle 8), the Law No. 20/2003 article 12 (nr. 1) states that every student is entitled to 'obtain education services in accordance with students' talent, interest, and ability; shifting from one to another stream and unit of education at the same level; and to complete an education programme based on individuals' rate of learning, not to exceed the time determined' (MoNE 2004, nr. 1). The statement further says that each student is different, and therefore the teaching and learning process must cater to the

individual needs of every student. In translating this, the Ministry of National Education further issues a guidance statement for vocational schools to accommodate student flexibly in that students can finish the study programmes at their own pace. This guidance promotes an open system, meaning students are to have flexibility in choice and in the amount of time needed for accomplishment of learning trajectories. However, the above quoted section of the law actually says that students are allowed to proceed at a slower pace, but are not allowed to go *faster*. In practice, this means that students are not allowed to take their final exams sooner than officially scheduled.

In terms of learning guidance and the role of the teacher (principle 9), the Guidelines of Curriculum envisage the learning process as 'the reversed meaning of learning' (MoNE 2004, 7–8, nr. 8). This refers to learning as information building and understanding by students, not knowledge transfer from teacher to student. The Guidelines of Curriculum Development define learning as an active action by students to build meaning and understanding, while it is the responsibility of teachers to create learning situations supportive to students' creativity, motivation, and responsibility for long life education (MoNE 2004, 7, nr.8). In reviewing the KTSP educational regulation, Sulfasyah (2013) asserts:

The KTSP involves a paradigm shift in an educational process, from teaching to learning. A teaching paradigm which focuses on the role of teachers as transmitter of knowledge to students should shift to a learning paradigm which gives more responsibility to the students to develop their potential and creativity (translated from Pustaka Yustisia 2011, 30).'

The excerpt above indicates that Indonesian policy promotes a paradigm shift from a focus on teaching to a focus on learning, implying changed roles for teachers and students. The teacher role shifts from that of a knowledge transmitter to a facilitator of learning, which is in line with CCBE principle 9. Additionally, the document reports on the changed role of students from a passive recipient to an active and collaborative constructor of their own knowledge, which links to CCBE principles 6 and 7. The document encourages interaction amongst the students, and between students and teachers gearing toward students jointly constructing their knowledge (BSNP 2006). These statements show that the student and teacher roles expected in Indonesian CBE are in agreement with the student and teacher roles described in the CCBE framework.

Competence-based assessment

Assessment is another key concept guiding teaching and learning in competence-based education. CCBE requires regularly assessing student learning using multiple assessment methods, both for grading as well as informing and stimulating further learning purposes (principle 5). The Guidelines of Curriculum Development provide supporting documentation explaining what is expected in relation to assessment. In the Guidelines of Curriculum Development, assessment is defined as a set of activities to gather and analyse information in order to measure learning outcomes

(BSNP 2006, nr. 9). Additionally, this document states that assessment is not only to be used for summative purposes but also for formative purposes aimed at monitoring student learning. This entails the use of various assessment methods, not only traditional forms of objective tests and essay tasks. Some of the approaches to formative assessment recommended at the classroom level include, but are not limited to, authentic assessment, performance assessment, and portfolios (BSNP 2006). Regarding the timing of assessment, the government issued regulations state that before the end of students learning trajectories, the schools should assess students' competencies on the vocational core subject involving experts from industry to ensure the student competence levels meet standards required by the world of work (BSNP 2006). These policy statements referring to assessment, strongly agree with the perspectives on assessment portrayed in the CCBE framework.

Career competencies, lifelong learning and citizenship

The CCBE framework pays explicit attention to stimulating competencies needed for surviving in today's society and lifelong learning (principle 10). This principle is clearly reflected in Indonesian regulations stating that the curriculum should be developed to create students to be life-long learners (BSNP 2006, 6, nr. 9). To realise this, the education process should put emphasis on the development of learning attitudes such as self-confidence, curiosity, the ability to understand others, and communication skills that support development of these attitudes (MoNE 2003, 12, nr. 1).

Principle 10 CCBE also refers to citizenship which is explicitly found in the Indonesian documents in the Guidelines of Curriculum Development (BSNP 2006, nr. 9) stating that 'the development of competencies to create spiritual, virtuous, healthy, knowledgeable, capable, creative, independent, democratic and responsible citizens' (translated from BSNP 2006, 5). This statement clearly shows that Indonesian CBE desires that its students become democratic and responsible citizens, in line with principle 10 of the CCBE framework.

Additionally, reflecting the national constitution of Indonesia, the policy documents explicitly stress that Indonesian CBE should pay attention to 'creating awareness of the Divine Dimension' (BSNP 2006, 5) referring to believing in God. This is a newly stated Indonesian CBE characteristic, not initially represented in the former CCBE framework, in which religion is approached as a neutral topic.

The explanation above indicates that the ten CBE principles described in the CCBE Framework of Sturing et al. (2011) are found in Indonesian educational policy documents to a large extent. Thus, the CCBE framework appears to provide an applicable operationalisation of Indonesian CBE that can be used to investigate the implementation level of competence-based education in Indonesian vocational schools.

CCBE principles as perceived by school principals, teachers, and students

This section presents the results of the cross-sectional analysis of the perceptions of school principals, teachers and students of CBE implementation in their study programmes.

CBE implementation as perceived by school principals

Table 2 shows the descriptive statistics of CBE implementation levels as rated by school principals. The mean scores for each principle range from 2.45 ($SD = 1.12$) to 4.49 ($SD = 0.75$). Most principles show a mean score above 4, suggesting that in general school principals were positive about the level of CBE implementation in their schools. On the other hand, most principles showed a wide-scoring range from *not competence-based* (score 1) or *starting to become competence-based* (score 2) to *fully competence-based* (score 5), suggesting that the participating schools differ in the degree to which the CCBE principles are implemented. The lowest mean score of the principle of flexibility (principle 8) indicate that most school principals did not see this principle practised in the study programme.

CBE implementation as perceived by teachers and students

Table 3 presents the results of the one sample *t*-tests examining whether the mean scores of teachers' perception on the implementation of CBE differ from the mean value of 3. It shows that teachers rate almost all principles above 3, and notably most above 4 (largely competence-based), except for principle 8 (flexibility) ($M = 2.81$, $SD = 0.50$). This indicates that teachers recognise the CBE implementation in the study programmes, except for principle flexibility.

Table 4 shows that in the students' view all mean scores differ from the mean value of 3. Almost all principles are significantly higher than 3, except for principle 8 (flexibility) which scores significantly below the mean value of 3 ($M = 2.52$, $SD = -0.29$, p -values < 0.05). Student scores suggest a perceived medium to large implementation of CBE (between 3.49 and 4.11). This result indicates that students notice the ten CCBE principles being implemented in their study programme, except for principle 8 (flexibility).

Table 2. Mean score of realisation CCBE principles as rated by school principals (N = 41).

Principles	Min	Max	Mean	SD
1 competence profile	2	5	4.19	0.89
2 vocational core problems	2	5	4.10	0.83
3 authentic learning	2	5	4.15	0.84
4 integration KSA	1	5	4.48	0.91
5 assessment	3	5	4.11	0.44
6 self-reflection	2	5	4.49	0.75
7 self-responsibility learning	2	5	3.66	0.72
8 flexibility	1	5	2.45	1.12
9 learning guidance	1	5	4.08	1.01
10 life-long learning, career and citizenship	1	5	4.17	0.86

Note: Scale from (1) not competence-based until (5) fully competence-based.

Table 3. Mean score and the t-test of CCBE principles as perceived by teachers (N = 428).

Principles	Min	Max	Mean	SD	t-test	p-value
1 competence profile	3.50	4.64	4.13	0.24	30.01	0.00
2 vocational core problems	3.52	4.55	4.10	0.20	35.45	0.00
3 authentic learning	3.07	4.50	4.01	0.27	23.91	0.00
4 integration KSA	3.47	4.87	4.18	0.26	29.01	0.00
5 assessment	3.05	4.62	4.03	0.30	22.24	0.00
6 self-reflection	3.11	4.59	3.98	0.30	20.68	0.00
7 self-responsibility learning	3.45	4.79	4.06	0.29	23.44	0.00
8 flexibility	1.71	4.18	2.81	0.50	-2.38	0.02
9 learning guidance	3.79	4.79	4.37	0.22	39.77	0.00
10 life-long learning, career and citizenship	3.73	4.80	4.35	0.23	36.94	0.00

Note: Scale from (1) never until (5) always.

Table 4. Mean score and t-test of CCBE principles as perceived by students (N = 2219).

Principles	Min	Max	Mean	SD	t-test	p-value
1 competence profile	3.09	4.39	3.95	0.25	24.12	0.00
2 vocational core problems	3.39	4.50	4.11	0.21	33.60	0.00
3 authentic learning	2.89	4.10	3.76	0.23	21.44	0.00
4 integration KSA	2.86	4.18	3.73	0.25	18.46	0.00
5 assessment	2.75	3.83	3.49	0.21	14.96	0.00
6 self-reflection	2.83	4.07	3.63	0.22	18.46	0.00
7 self-responsibility learning	3.57	4.27	4.03	0.14	45.49	0.00
8 flexibility	1.93	3.14	2.52	0.29	-10.30	0.00
9 learning guidance	3.14	4.56	4.13	0.25	28.38	0.00
10 life-long learning, career and citizenship	3.29	4.47	4.04	0.23	28.76	0.00

To conclude, school principals, teachers, and students notice the CCBE principles in their study programmes suggesting medium or large degrees of implementation of the various principles. However, all three stakeholder groups do not see the principle of flexibility as having been successfully implemented in the study programme.

The competiveness of study programme

Results in Table 5 showed that from the 41 schools in the study sample, the competiveness score range from 2.47 to 4.13, with the average score of 3.52 ($SD = 0.35$). This suggests that the implementation of competence-based education in Indonesian agricultural schools varied, ranging from level 2 (starting to be competence-based) to level 4 (largely competence-based). Figure 2 further displays the schools' competiveness scores from our 41 schools sample.

We reviewed the clusters of low versus high scoring schools once more to see if we could find indications for variables that might explain why schools score high or low. We could not detect a trend linking, for example, the size of

Table 5. Competiveness scores of agricultural schools (N = 41).

Variable	Min	Max	Mean	SD	SE Means	Varsians
Competiveness Score	2.47	4.13	3.52	0.35	0.05	0.12

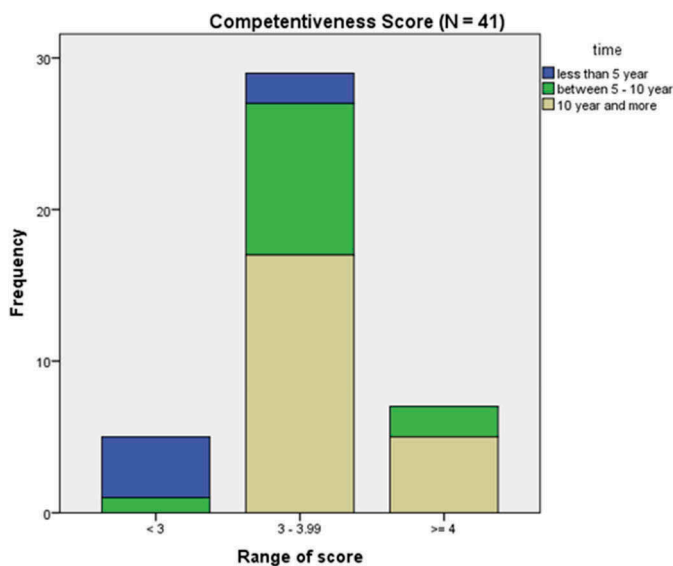


Figure 2. Number of schools with the range of competitiveness score and length of establishment.

the school or number of VET programmes offered to its CBE implementation success. However, we did notice that in newer schools (schools existing for no longer than five years) there seemed to be an over representation in the low scoring cluster. An additional analysis indeed supported the idea as can be seen in [Figure 2](#). The result of a one-way ANOVA showed a significant effect of time on the competitiveness scores ($F(2, 38) = 7.78, p < 0.05$) meaning that time of school establishment affected the competitiveness score. This indicated that there is a statistically different of the competitiveness scores between the groups, showing that the longer school exist, the higher the competitiveness score is.

Conclusion and discussion

This study explores CBE implementation in Indonesian vocational schools using the lens of Comprehensive Competence-Based Education Framework which was developed in a Western (i.e. Dutch) context (Sturing et al. 2011). This study collects information from educational policy documents and cross-sectional survey data from school principals, teachers, and students from 41 agricultural schools. Our findings show that CCBE principles appear in Indonesian educational policy documents to a large extent and are practised in schools. However, the degree of implementation of the ten principles in the 41 schools show a wide range of variation, from *starting to be competence-based* to *largely competence-based*. The principle of flexibility receives low rating from all stakeholders, even though the educational policy documents

explicitly aim for increasing the flexibility of vocational programmes. This finding challenges both Indonesian CBE implementation as well as the body of knowledge in CBE theory and needs further attention in the realisation of competence-based education in practice. Therefore, the findings do suggest that the western CCBE framework is appropriate for studying CBE in non-Western countries.

The recognition of the CCBE principles in policy documents, as well as finding the principles scoring in a range from 1/2 to 5 by various stakeholders, contributes to the validation of the CBE framework and principles. The findings allow for identifying and differentiating amongst *more-* to *less-* CBE schools, and serve to help identify which CBE principles are more problematic than others. These are interesting findings both from theoretical and practical points of view. The CCBE framework can indeed be used as a tool for evaluating and reflecting on educational programmes, but also opens doors for linking varying degrees of implementation to various CBE outcomes. This is crucial for future effectiveness studies that are lacking hitherto (Lassnigg 2017; Wesselink et al. 2017).

With respect to the current condition of successful CBE implementation in Indonesian agricultural schools, the findings show that schools realise CCBE principles to different degrees, ranging from *starting to be competence-based* to *largely competence-based*. Although all schools are guided by the same policy documents and qualification frameworks, the realisation in practice differs. From the 41 school samples, less than twenty percent of schools have a competentiveness score of four or above. This might be due to the legacy of the previous centralised education system in Indonesia, in which teachers were not much involved in curriculum design, while the new CBE system is decentralised and requires teachers and schools to take the lead in (re)designing their curriculum. Surprisingly, in this respect, newer schools (existing for not more than five years) score lower in competentiveness than older schools. While one could argue that newer schools carry less 'burden' from the previous, more centralised system, this does not seem to result in a better implementation of CBE in these newer schools. This finding can probably be explained by a lack of (financial) resources, fewer facilities, and fewer and fewer strong relationships with the surrounding companies who provide the labour market for facilitating workplace learning. Thus, the mere stating of CBE principles in educational policy documents is not sufficient for successful implementation of an educational innovation. Successful implementation requires both adequate resources and facilities, as well as additional support for various stakeholders such as teachers and school principals. Successful school innovation depends on how teachers interpret the underlying concepts and practices, and then translate their new knowledge and skills into actual teaching and learning conditions and activities. Only when provided proper implementation support can schools implement the CBE curriculum as intended (Gulikers, Runhaar, and Mulder 2017).

This study corroborates previous studies in different countries (e.g, Geerligs and Nijhof 2002; Solomon 2016) that also show how the flexibility principle is a difficult principle to realise in educational practice. The low score for the principle of flexibility indicates that the studied vocational programmes do not offer students opportunities to perform learning and assessment activities at their own pace, place, and time, or that the educational programme and methods are not adequately adjusted to meet each individual student's needs. It suggests that vocational programmes are standardised across students, even though the policy documents state that they need to allow for more individualisation and differentiation. Several possible explanations can be provided for this finding, some which are discussed in previously referenced studies, such as Wesselink (2010). Making an educational programme flexible in terms of accommodating each individual student's needs might be the most difficult principle of CCBE to achieve, as it requires systemic change from the organisation of an educational system. One could also argue that this principle can only blossom when the other principles are implemented first.

This study offers several possible explanations for low scores of the flexibility principle. First, the phrasing of the law – saying '[a student must] complete an education programme based on the individual's rate of learning, not exceeding the time determined' (MoNE 2004, nr. 1) – might discourage schools from putting effort into organising possibilities for students to go *faster* throughout their educational programme. This law does not allow students to take their final exams sooner than officially scheduled. Second, the Indonesian culture can be characterised by authoritarianism (Hofstede and Hofstede 2005), hence the flexibility, or learner-directed principle, may not be a cultural fit or possibility. A final discussion with respect to this flexibility principle might be around flexibility as an important characteristic of vocational education, as the degree of flexibility could have a major impact on student motivation and cognitive skills, and might actually make schools and schooling generally more efficient (e.g. Nijhof, Kieft, and van Woerkom 2001; Soden 1993). In societies with emerging emphases on (norm-referenced) assessment, and movements toward an overall standardization of education in the global education reform movement, the question arises about the feasibility of *any* degree of flexibility in some schools. Future research should investigate the flexibility principle in competence-based vocational education, how and under which conditions this can actually be successfully implemented, and how it in turn affects learning processes and outcomes.

As has been mentioned earlier, competence-based education was developed in western countries that have markedly contrasting learning cultures from that of Indonesia. The principles of self-steering, self-directed learning, and increased student responsibility (principles 7) are more common and considered appropriate for individualist cultures. Our findings show that teachers and students scored these principles relatively high, while Indonesia is

considered to be a collectivist society (Hofstede and Hofstede 2005). This finding might suggest that either these principles also relate to collectivist societies, or that the Indonesian culture is shifting from a more collectivist into more individualist culture, as previously stated by Mangundjaya (2013). Future research could elaborate on the relationships between the various CCBE principles and those of individualist or collectivist societies.

Despite the study's success in highlighting important findings and implications, the study was challenged by several limitations which need to be addressed to improve future studies on the focus areas. This study utilises quantitative data from a cross-sectional survey, which was limiting in its ability to provide deeper insight into the actual implementation of CBE in schools. Though quantitative data collection is considered to be an efficient way to get information, incorporating data collection using classroom observation might result in clearer and more detailed pictures of what actually happens during the learning process in Indonesian vocational schools. School documents, such as educational vision statements, might differ in the extent to which they adhere, or hope to adhere to the educational policies regarding CBE. The extent to which industries collaborate in designing and providing opportunities for on-the-job education could be pursued, stimulated, and therefore improved. A more systematic review of school documentation might provide more and deeper insights into the variation of school curricula with respect to the intended CBE curriculum.

A second limitation is that CBE is assumed to better equip students with qualifications to enter the job market, while this current study did not clearly determine yet the extent to which CBE contributes to graduates' future jobs. Further research should answer questions related to the opportunities or success of students graduating from programmes that are more CBE. Questions such as: Do CBE graduates get better jobs or are they better in performing their jobs than non-CBE graduates or workers without qualifications? Do they get jobs related to their qualifications? Do students with qualifications earn more than similar workers without qualifications and are there difference between students for CBE or less-CBE programmes?

Another limitation is that of sample size, which is related to the quality of generalisations around findings. Even though the 41 schools in our sample comprised most of agricultural schools in Java, and all VET schools on offering food processing and technology in Java province were reviewed, this number is actually a small portion of total vocational schools in Indonesia. The overall quality of the supporting resources of vocational schools in the big cities outside of Java might be comparable in term of facilities, but in rural areas the overall supporting resources might differ. The schools with fewer resources and available support are likely not to be as comparable to 'newer' schools, resulting in lower CBE scores for the under-resourced schools. Also, the labour market and facilities on other Islands of Indonesia are different from the contexts of our study; and the

agricultural product and the available firms/industries to cooperate with in Java and outside Java might be different. Therefore, the results should be interpreted cautiously. Adding more samples from various areas and study programmes will give a more complete picture of the current CBE condition in Indonesian vocational schools. Additionally, vocational schools that are not obliged to follow the national policy guidelines regarding the CBE educational system (e.g., the private schools) should be left out of a study sample.

To conclude, CCBE principles that were developed in the Western context seem largely applicable to typify CBE policy and implementation in Indonesia, as an example of a non-Western, collectivist society. School principals, teachers, and students recognise most CBE principles as being implemented in their study programme, except for the principle of flexibility. This means that the content and the process of learning in vocational education, at least in agricultural food processing technology programmes, to a relatively large degree adhere to the comprehensive competence-based education framework. This study showed that utilising the ten CCBE principles, together with the resulting competiveness scores allow for differentiating between *more CBE* and *less CBE* schools. This is a fruitful finding for future effectiveness studies that CBE theory and proponents, for which there is a great demand. This can be done, for example, by comparing school factors that influence student outcomes in high versus *low competence-based* learning environments.

Note

1. The Wesselink framework consisted of eight principles in which the principles of self-steering and self-reflection were as one principle (called 'Self-responsibility and (self-) reflection of students are stimulated', Wesselink et al. 2007, 47). In Sturings framework, the principles were separated into two, i.e self reflection and self-regulated learning. Sturing validation study also led to the addition of the principle of flexibility.

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Appendix 1.

Principle	Not CB	Starting to be CB	Partially CB	Largely CB	Completely CB
1 The study programme is based on core tasks, working processes, and competences (the qualification profile)	During the development of the study programme the qualification profile is not synchronized with professional practice. Teachers are not familiar with the qualification profile	During the development of the study programme the qualification profile is seldom used and the programme is not synchronized with professional practice. Teachers are seldom familiar with the qualification profile.	During the development of the study programme the qualification profile is partially used and the programme is partially synchronized with professional practice. Teachers are moderately familiar with the qualification profile.	During the development of the study programme the qualification profile is often used and the programme is largely synchronized with professional practice. Teachers are familiar with the qualification profile.	During the development of the study programme the qualification profile is at all times used and the programme is synchronized with practices and developments in the profession. Teachers are familiar with the qualification profile.
2 Complex vocational core problems are central.	Complex vocational core problems are not central to the study programme.	Complex vocational core problems are occasionally central to the study programme. Occasionally students work on vocational core problems.	Complex vocational core problems are central to some parts of the study programme.	Complex vocational core problems are often central to the study programme and are assessed in different contexts. The complexity of the problems does not increase during the study programme.	Complex vocational core problems are at all times central to the study programme and are assessed in many different contexts. The complexity of the problems increase during the study programme.
3 Learning activities take place in different concrete, meaningful vocational situations.	Students learn in school. Learning in practice is of subordinate importance.	Students learn occasionally in practical settings but classroom work is predominant. A link is seldom made between classroom learning and learning through practical experience.	Learning activities (both in and outside school) take place partially in concrete, meaningful practice settings. A link is sometimes made between classroom learning and learning through practical experience.	Participants often work (both in and outside school) individually and in teams on learning activities that take place in several meaningful, concrete practice settings. A link is often made between classroom learning and learning through practical experience.	Participants always work (both in and outside school) individually and in teams on learning activities that take place in various meaningful, concrete practice settings. A link is always made between classroom learning and learning through practical experience.

(Continued)

(Continued).

Principle	Not CB	Starting to be CB	Partially CB	Largely CB	Completely CB
4	Knowledge, skills and attitudes (K, S and A) are separately developed during the learning process. The three aspects are assessed separately.	K, S and A are seldom integrated in the learning process. K, S and A are assessed separately.	K, S and A are integrated in some parts of the study programme. K, S and A are assessed separately.	K, S and A are often integrated in the learning process. Assessment of K, S and A is integrated as much as possible.	K, S and A are always integrated in the learning process. K, S and A are assessed as an integrated whole.
5	Students are regularly assessed	Assessment is the final stage of a learning task and is qualifying. Vocational practice is not involved during the assessment.	Assessment takes place at several times and is qualifying. Sometimes the students' competence development is assessed. Vocational practice is sometimes involved during the assessments.	Assessment takes place at before, during and after the learning process and is both qualifying and focused on the competence development of students. The timing and format of the assessments are the same for all students. Vocational practice is often involved during the assessments.	Assessment takes place at before, during and after the learning process and is both qualifying and focused on the competence development of students. Students determine the timing and format of the assessments themselves. Vocational practice is at all times involved during in the assessments.
6	Students are challenged to reflect their own learning.	Students are not challenged to reflect their own learning.	Students are sometimes challenged to reflect on their learning and the learning outcomes.	Students are often challenged to reflect on their learning and the learning outcomes.	Students are at all times challenged to reflect on their learning, the learning outcomes and the occupation.
7	The study programme is structured in such a way that the students increasingly self-steer their learning.	There are no possibilities during the study programme for self-steering. The teacher is responsible for the learning process of the student.	The study programme partially offers possibilities for self-steering. Students have an influence on their own learning process. The teacher and the student are jointly responsible for the learning process of the student.	The study programme often offers possibilities for self-steering. Students have an influence on their own learning process. The teacher and the student are jointly responsible for the learning process of the student.	The study programme offers at all times possibilities for self-steering. Students design their own learning process. The student's self-steering of their learning process increases during the programme. Each student is ultimately self-responsible for his/her learning process.

(Continued)

(Continued).

Principle	Not CB	Starting to be CB	Partially CB	Largely CB	Completely CB
8 The study programme is flexible	The study programme is the same for each student. There are no possibilities to alter the study programme for a specific student.	The study programme is the same for each student. There are possibilities for the students to follow the courses at their own pace.	The study programme is the same for each student, but there are possibilities to alter the programme based on the accomplished competences of the students and earned dispensations.	The study programme is the same for each student, but can be followed at a student's own pace. The students can choose between different learning activities.	The study programme is flexible and planned with the coach based on the characteristic of the student.
9 The guidance is adjusted to the learning needs of the students.	The teacher is an expert. Transfer of knowledge is crucial.	The teacher is an expert. The teacher offers guidance which is seldom adjusted to the learning needs of the students.	The teacher is a coach and an expert. The teacher offers guidance which is partially adjusted to the learning needs of the students.	The teacher is a coach, mentor and an expert. The teacher offers varied guidance which is often adjusted to the learning needs of the students.	The teacher is a coach, mentor and an expert. The teacher offers varied guidance which is at all times adjusted to the learning needs of the students. Students are stimulated to help each other.
10 In the study programme attention is paid to learning, career, and citizenship competencies.	No attention is paid to learning, career, and citizenship competencies during the study programme.	Attention is seldom paid to learning, career, and citizenship competencies during the study programme. These competencies are not integrated during the study programme.	Some attention is paid to learning, career and citizenship competencies during the study programme. These competencies are not integrated during the study programme.	Attention is often paid to learning, career and citizenship competencies during the study programme. These competencies are integrated with vocational core problems.	Attention is often paid to learning, career and citizenship competencies during the study programme. These competencies are integrated in the study programme.

Source: Sturing et al. (2011)