

ORIGINAL RESEARCH PAPER

## **Does Community-Based Education Come Close to What it Should Be? A Case Study from the Developing World: Students' Opinions**

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**ABSTRACT** **Context:** *There has been an increase in the number of medical schools implementing community-based educational (CBE) programmes. However, there are doubts whether CBE programmes are appropriately implemented. As a case study, the CBE programme of the Medical Faculty of Diponegoro University (MFDU) in Semarang, Indonesia was evaluated.*

**Objectives:** *To acquire MFDU's students' opinions on their CBE programme as part of a comprehensive evaluation of that programme, and to generate recommendations for improvement of MFDU's CBE programme.*

**Methods:** *Coles and Grant's model for curriculum evaluation was applied. This model recommends triangulation of data generated from comparison of the programme as designed "on paper", as implemented "in action" by the faculty, and "as experienced" by the students. To assess the curriculum as experienced by the students, direct participatory observation was performed and focus group discussions were conducted to collect students' opinions.*

**Results:** *Students specifically signalled: (1) frequent overlap of lectures given during the CBE clerkship and in the previous part of the curriculum, (2) mismatch between their activities in the community and the community's felt health needs, (3) greater benefits of the CBE programme for Primary Health Care (PHC) centres and students than for target communities, and (4) incidental defective co-operation between students and health providers or community health workers.*

**Conclusion:** *Students' opinions yielded more in-depth information on the CBE programme evaluated and facilitated formulation of recommendations for improvement of that CBE programme.*

**KEYWORDS** *CBE, evaluation, case study, students' experiences.*

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## Introduction

Community-based education (CBE) has been implemented by a growing number of medical schools, particularly in their undergraduate medical programmes. CBE is an educational format advocated to teach students management of priority health problems within the community (Feletti *et al.*, 2000). Many studies reported valuable learning experiences for students attending CBE programmes in community-based health facilities (Nicholson *et al.*, 2001; Wallace *et al.*, 2001; Anderson *et al.*, 2003). However, there are doubts whether CBE programmes are appropriately implemented. Shortage of resources and negative perception of CBE by faculty are reasons why CBE programmes are not always successfully implemented (Illife, 1992; Mash & Villiers, 1999). In addition, students may not fully appreciate the value of community experiences (Kuo & Slavin, 2001) and particularly in developing countries community participation may not develop satisfactorily (Musal *et al.*, 2003).

As a case study, the CBE programme of the Medical Faculty of Diponegoro University (MFDU) in Semarang, Indonesia, was evaluated using Coles & Grant's (1985) method of curriculum evaluation. According to this method, subsequently the "curriculum on paper", the "curriculum in action", and the "experienced curriculum" are evaluated. The "curriculum on paper" includes what is written about the curriculum in documents, committee reports, etc., and what faculty says about the curriculum's aims and goals. The "curriculum in action" is how the intended curriculum is theoretically implemented in practice. The "experienced curriculum" is what students actually do, how they study, what they believe they should be doing, the learning that occurs, and the outcome of their learning (which is in line with the "actualised curriculum" coined by Nelson *et al.*, 1992). There can be considerable mismatches between the three concepts of the curriculum as distinguished above (Remmen, 1999). Earlier, MFDU's CBE programme "in action" was evaluated against the programme "on paper" (Kristina *et al.*, 2005). Four important weaknesses of MFDU's CBE programme were revealed: (1) In the community much time is spent on formal teaching; (2) Students' work in the community is not based on the community's felt health needs jointly identified by community members and students; (3) There is rarely continuity in, and evaluation or follow-up of the students' work in the community; and (4) No systematic programme evaluations are carried out (Kristina *et al.*, 2005).

To complete the evaluation of MFDU's CBE programme in accord with the model of Coles & Grant (1985), students' perceptions should also be explored to assess the "experienced curriculum". This paper focuses in particular on students' comments deviating from, or providing complementary information on the conclusions from our previous study quoted above, and on suggestions for improvement of MFDU's CBE programme.

## **CBE in MFDU'S Curriculum**

MFDU's CBE programme was implemented in 1974 and revised in 1991. In year 4, students study family health problems in an urban area ("kampong") for two weeks. Groups of approximately 25 students are supposed to visit some 350 houses, yielding about 14 families per student. In year 6, students participate in a 10-week CBE programme as part of their rotations, here referred to as the "CBE clerkship". In this CBE clerkship students are trained to deal with emergency cases by advanced trauma life support training in a skills lab as a preparation for postings in a municipality hospital (week 1); study the management of primary health services on site (weeks 2 and 3); solve health problems in a rural community (weeks 4 and 5); participate in health services as provided by a secondary municipality hospital (weeks 6–8); and study and participate in the national urban health programme (week 9). The final week (10) is used for exams. In weeks 4 and 5, groups of 3–5 students are assigned to a health provider responsible for execution of the government's primary health care (PHC) programme. Within the scope of that PHC programme, students have to identify a specific community health problem, propose solutions, and implement one of the suggested solutions.

## **Methods**

Students' opinions on MFDU's CBE programme were collected using the qualitative methods of participatory observation and focus group discussion (FGD). As an external observer, the first author (TNK) attended one cohort of 25 students in their two-week CBE programme in year 4, and two cohorts of 25 and 30 students, respectively, in their ten-week CBE clerkship in year 6. Students' comments and answers to explorative questions asked by the observer during their CBE activities were recorded (Patton, 1990). Examples of questions asked are: "What is your task in your group?" and "How do you appreciate your task?". The first author is a microbiologist not involved in the design and execution of MFDU's CBE programme. From the onset of the observation, her position as an independent investigator of the programme was explained to the students. Therefore, students were assumed to feel free to express their opinions, e.g. in response to the questions. The following steps were taken to analyse the records: (1) linking students' activities and related comments and answers to questions, (2) coding comments and answers as key points, (3) organizing the key points into categories, and (4) extracting themes with respect to the practical implementation of the programmes (Dignan, 1989). To increase the reliability of this analysis, a volunteer (a psychologist from the Department of Medical Sociology acquainted with qualitative studies) was asked to also code the comments and answers pertaining to weeks 4 and 5 of the CBE clerkship. Coding by the first author was compared with coding by the volunteer and a difference emerging (1 out of 13 codings) was discussed to reach consensus.

To further explore the students' perception of the CBE programme, FGDs were planned for 45 students randomly picked from the total population of 143 final year students who had completed their CBE clerkship. Focus groups of 15 students met for 90 minutes during lunchtime. Students' transportation expenses were reimbursed and they were provided free lunch. FGDs were moderated by one of the authors (TNK), assisted by a note taker. The moderator explained that the outcomes of the FGD would be used to improve MFDU's CBE programme; she set the rules for the FGD and promised anonymous and confidential handling of their comments (Morgan & Scannell, 1998). During these FGDs open questions were used, like "What is your opinion about your work performed in a rural community?" and "How do you appreciate the full CBE programme?" At the end of each FGD students were encouraged to suggest improvements in the CBE programme. FGDs were tape-recorded and later transcribed verbatim. Answers to similar questions asked in each of the FGDs were clustered and coded by the first author. Analysis across the FGDs involved detecting patterns or trends, identifying themes expressed by focus group participants, and attaching meaning (interpretation) to these results (Krueger & King, 1998). The same volunteer who verified coding of comments from participatory observations was asked to independently identify themes in the transcripts of focus group discussions. Codings by the first author and the volunteer were compared and discrepancies (occurring in 2 out of 17 codings) were discussed to reach consensus.

## Results

### *Students' Comments Recorded during Participatory Observation*

With respect to the CBE programme in year 4, one theme extracted from the students' comments pertained to the problem of presenting all data collected from a large number of families in just one joint report. Students complained about the large quantitative variation in the contributions by individual students to this joint report. A second theme was the quality of the plenary discussion after their presentation of the joint report. Students felt this discussion was dominated by a few talkative students who had not always had a significant input in the writing of the report.

With respect to the CBE clerkship, one theme extracted from students' comments related to the many lectures to be attended when posted for weeks 2 and 3 in a rural area. In addition, students stated the contents of these lectures to often overlap with lectures given earlier in MFDU's curriculum. With respect to their posting in another rural area for weeks 4 and 5, some students commented on the negative attitude of the health provider with whom they were supposed to co-operate. One of them said:

"At least we should work together with the health providers to collect data, but they did not help us, even though this was a large target area

with many households to be visited, and the available time was limited". (Participatory observation #2, Male student #6; PO2M6).

There were also positive comments from students, e.g. when posted for weeks 6–8 in a municipality hospital. Although it had been very tiring, several students stated to have enjoyed that posting because it had enabled them to apply management of emergency cases learnt in week 1 of the CBE clerkship (PO #1, Female student #1 (PO1F1); PO1F6; PO1M11). Others stated their appreciation of providing health education in PHC centres in weeks 2 and 3, by which they had gained more confidence in addressing a group of community members (PO1F2; PO1F12).

#### *Students' Comments Recorded in Focus Group Discussions*

Forty-one out of 45 selected students attended three FGDs; four students did not show up due to obligations in the hospital. Gender distribution of the students was 70.7% female and 29.3% male. This gender distribution is similar to that of the year class (67% female; 33% male). FGDs were held on three consecutive days; 14 students participated in the first and third group, and 13 in the second.

With respect to the CBE programme in year 4, students complained about lack of adequate supervision and they believed that factors unrelated to their final report had influenced their supervisors' judgement. Other negative comments pertained to repetitive interviewing of the same families by subsequent classes.

Many students commented that the learning objectives for weeks 4 and 5 were not clear. Two students stated that each student was just given some task to be executed (FGD1M7, FGD2F1).

Comments were clustered in three themes: benefits to the community, co-operation with health professionals, and suggestions to improve the CBE programme.

#### *Benefits to the Community*

Students felt they had not addressed the actual health needs of the community due to a mismatch between their activities in the community and the community's felt health needs. They estimated the benefits of their work to be larger for the PHC centre and themselves than for the community. Furthermore, there was no follow-up of their work in the community. Two students said they felt "used" by the PHC centre to execute the government's programme, which usually does not address the actual community health problems (FGD2M12, FGD3F9). Two further quotes:

"We only used the community as a learning resource. For instance, we took sputum from individuals suspected of tuberculosis. We did not inform them whether the test was positive or negative, due to lack of time". (FGD1M9)

“To assess poverty, we only collected data. Since there was no follow-up to the community, these people must feel disappointed”. (FGD2F5)

### *Co-operation with Health Professionals*

Co-operation between students and health providers and community health workers did not always develop satisfactorily. After assessment of poverty and immunisation coverage for instance, the students collected and presented data contradicting those routinely used by the midwives. Consequently, the students felt the midwives were reluctant to receive and co-operate with the students. Two students who worked together with a community health worker felt this community health worker to be annoyed with their activities. One of them related:

“The community health worker told our group that every time the students came to the village, she and her colleagues would receive additional instructions. However, they never received anything in return from the students or the PHC centre”. (FGD1F4)

### *Students' Suggestions to Improve the CBE Programme*

At the end of the FGDs students were encouraged to raise suggestions for improvement of the CBE programme. The following suggestions were made:

#### *Year 4 CBE Programme*

- Split students in small sub-groups (of 5–6) to produce reports.
- Execute the programme in newly selected kampongs.

#### *Year 6 CBE Clerkship*

- Provide a study guide including the learning objectives.
- Explain the learning objectives at the start of the clerkship.
- Substitute lectures at community sites with interactive sessions, problem-based learning, and practical work in the community.
- Have small groups of students working on the management of specific tasks of the PHC centre instead of the full group studying the management of the PHC centre as a whole.
- Provide students with unsorted instead of tabulated patient data to study the management of the PHC centre.
- Adjust the size of the population to be studied (e.g. the number of households to be visited) to the time students have available.
- Devote more time to working in the community at the expense of working in the municipality hospital.

## **Discussion**

Many comments by students on MFDU's CBE programme confirmed the conclusions on weaknesses previously drawn based on comparison of the CBE

programme “on paper” and “in action” (Kristina *et al.*, 2005). In theory, such a finding could hint at a bias introduced by the person who executed the participatory observations and moderated the FGDs. This observer/moderator (TNK) could have ignored student comments deviating from her own observations and opinion, or students could have felt inhibited to share deviant comments with their peers and the observer/moderator. However, the principal author was no stakeholder in the CBE programme and took particular care not to give her opinion on the programme in which the students were participating. Moreover, in the FGDs the students were assured of anonymous and confidential handling of their comments. We therefore assume the students' comments included in this study to be representative and reliable.

It may be noted that this report in particular focuses on negative comments about the CBE programme. Some students also shared positive comments about the programme, but these were far less frequently encountered than negative comments. Therefore, and given our aim to formulate recommendations for improvement of MFDU's CBE programme, we concentrated on negative students' comments. The students' comments added to our detailed understanding of the CBE programme “in action” and consequently increased the depth of our evaluation. Students' suggestions for improvement of the CBE programme have been incorporated in the recommendations below to MFDU.

#### *Final Evaluation of MFDU's CBE Programme*

MFDU has created adequate partnerships with the regional health care system and local authorities to enable CBE programmes for its students. A total of 12 weeks in the curriculum is reserved for CBE. In practice this period is subdivided in one two-week subunit in year 4 and five one- to three-week subunits plus an examination week in year 6. Subunits were not fitted into a conceptual outline for the CBE programme. Subunits matched corresponding objectives specified in MFDU's description of the CBE programme. However, we considered one of these objectives – “to understand the management of a secondary hospital” – not to fit a CBE programme because it is too remote from addressing community health.

Almost half of the time available for CBE was used for formal instruction. Lectures were signalled by the students often to be repetitions of lectures already given earlier in the curriculum. Due to the short period available for field work in the community, students lacked time with community members to jointly decide on health problems to be tackled, to provide feedback to the community after determining the impact of their interventions, and to prepare follow-up by the next student cohort. These weaknesses make the CBE programme vulnerable to “community exhaustion” (Joseph & Abraham, 2003). Furthermore, the work agendas of participating health centres (i.e. to implement government programmes) interfered with MFDU's objective to enable students to manage community health problems they identified themselves with the community.

Supervision of students during the CBE programme was often observed to be quantitatively less than scheduled. This was only commented on by the students in relation to their assessment in the year 4 programme.

Little attention was paid to assessment of individual students in field work. Assessment was often only based on supervisors' impressions, profiling by some students in plenary sessions, and marks for reports submitted by a group of students. Programme evaluations were never conducted, nor did the planning group for the CBE programme convene since 1991 to discuss possible improvements in the programme.

### *Suggestions for Improvements*

Based on the evaluation of MFDU's CBE programme reported here and in an earlier paper (Kristina *et al.*, 2005), the following suggestions for improvement of the programme were offered. Most of MFDU's objectives for its CBE programme, and perhaps even some more objectives adopted from a generic list of objectives (Kristina *et al.*, 2004), could be met in a more integrated CBE programme with a larger part of the students' time spent on activities with the community. A link could be created between the CBE programme in year 4 and the CBE clerkship in year 6, e.g. by having students perform a "community assessment" in year 4 and arranging for them to return to the same community for follow-up in year 6 (Feletti *et al.*, 2000). In the CBE clerkship, students should interact with the community to identify the community's felt health needs, take joint decisions on potentially useful interventions, evaluate the activities, and provide feedback. If this cycle cannot be finished by one group of students, provisions should be made for a succeeding student group to complete it (Williams *et al.*, 1999). Rotation of the CBE programme location should be ensured to prevent community exhaustion. More attention should be given to assessment of the students' individual contributions in the CBE programme. Evaluation of students by community members and peers are methods suggested by others (Magzoub *et al.*, 1998) but not yet employed by MFDU. Questionnaires should be designed to evaluate perception of the CBE programme among students, faculty, and community representatives. The outcomes should frequently be discussed in MFDU to adapt the programme where necessary.

## **Conclusion**

Application of Coles & Grant's method for curriculum evaluation to the CBE programme of MFDU revealed shortcomings in its design and implementation. The combination of the outcomes of such programme evaluation with a comparison of MFDU's objectives for its CBE programme with a list of generic objectives for CBE programmes (Kristina *et al.*, 2004) yielded concrete suggestions for improvement of MFDU's CBE programme.

## Acknowledgements

We are grateful to MFDU's class of 1997 students for participating in FGDs and to Hastaning Sakti, MSc for verifying coding of the students' comments recorded in weeks 4 and 5 of the CBE clerkship and during FGDs.

This study was undertaken in the framework of the Quality Undergraduate Education Project of the Faculty of Medicine, Diponegoro University, Semarang, Indonesia, which is funded by the World Bank.

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