Student-centred approach in a patient-centred course: Analysis of students’ descriptive evaluations in the transition to clinical education

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Abstract

Background
Understanding students’ learning experiences during the transition from pre-clinical to clinical education is of interest to teachers in medical education. An analysis of feedback from students in the transition would be helpful in order to promote deep learning of a patient-centred perspective. We have studied the students’ experiences in the transition to clinical education obtained from descriptive evaluations and analyzed the impact of students’ feed-back on course development.

Methods
Qualitative content analysis was used. In open-ended consultation skills courses in the middle of Göteborg undergraduate curriculum, 158 narratives were evaluated and analysed. Key features of course development were analyzed from learning objectives, course records, protocols from teachers’ evaluations and field notes. Credibility of data was tested by two colleagues and by presenting themes at seminars and conferences. Authors’ experiences of evaluating the course over many years were also used.

Results
Seven main themes emerged in students’ descriptive evaluations, ‘at last! – learning professional skills in practice’, ‘course design works’, ‘lack of unity’, ‘authentic and relevant practice examination’ ‘activity and self-directed learning’, ‘support and encouragement of facilitators’ and ‘a growing self-awareness and confidence’. A corresponding pattern was found in students’ main themes and key features of course development, indicating the impact of students’ stories. Support to facilitators and a curriculum reform also
contributed. Students’ descriptive evaluations were crucial in a learner-centred knowledge building process of a patient-centred course. By harmonizing the evaluation to central knowledge in patient-centred medicine a parallel process was achieved.

**Conclusions**

Analysis of students’ descriptive evaluations was helpful and gave voice to students’ learning experiences. Mid-curriculum students preferred an authentic professional setting and to be active in their learning of clinical and consultation skills. Within a framework of professional skills, learning physical examination skills seemed to have a synergistic influence on learning consultation skills. Reflection on practice, continuity and support from facilitators in a learning relationship appears to promote a growing confidence in becoming a physician.

**Background**

How does learning of communication skills fit into students’ clinical introduction? This question has been discussed among undergraduate communication trainers during the last decade [1]. Since the days of Flexner, a widespread 20th century version of the medical curriculum contain a preclinical phase of biomedical sciences followed by a later clinical phase [2]. To students, the transition from the first phase to the second forms a crucial step in which the term ‘shock of practice’ has been introduced to characterize students’ learning problems [3]. Even though many curricula have undergone changes in
order to integrate preclinical and clinical studies, the shift and the overall
template still have a large influence.
Recent studies have reported that students perceive the transition as a stressful
part of the curriculum and increased support for students is proposed [4,5,6].
Consequently, evaluation and research aiming at understanding students’
learning experiences during the transition is of clear interest to teachers and
programme organizers. By adopting a student-centred perspective, feedback
from students can help teachers to promote deep learning and evaluate
innovations [7]. In this study, we present an analysis of students’ experiences
from a renewal of the transitional phase and the impact of students’ feed-back.

In 1993, a nine-week clinical introduction course ‘Consultation Skills’ started
in the Göteborg undergraduate curriculum. The consultation was launched as a
unique concept by British researchers in the 1980’s [8]. A patient-centred
approach in communication is an essential part of the concept [9]. In the course,
students’ first encounter between patients and physicians took place in general
practice and was integrated with learning clinical examination skills, medical
psychology and medical ethics [10]. Learning in small groups and learning in
practice together with facilitators and clinical supervisors was implemented.
Students met facilitators in four settings: in primary health care centres; in an
art-of-interviewing week using the Kagan video method [11]; in geriatric wards
and in continuous small groups of skills training and reflection. In cooperation
with the three leaders of the course, the first author (MW) was working as a
course assistant, coordinating group facilitators, organizing and evaluating
courses. AS and CB were two of three course leaders. At the beginning of
course implementation, extensive formats were used consisting of structured evaluation items covering the particular parts of the course.

In 1995 we felt more familiar with the new context and searched for a more global and student-centred evaluation. Educational research on course evaluations performed at the Department of Education at Göteborg University inspired us to try a new evaluation approach [12]. A very substantial student evaluation in the form of a letter also contributed to the shift. The general idea was to harmonize the evaluation idiom to the central knowledge of the course and let students share the control of what was emphasized and generate their ideas. An open-ended student-centred descriptive evaluation would better correspond to the patient-centred approach learned in the course. Instead of asking for structured, closed and short answers, we sought for students’ narratives in open-ended evaluation stories. By inviting students to expand their descriptions we aimed at a more differentiated picture of students’ course experiences. This meant that we deliberately used evaluations primarily as a tool for listening in course development. Consequently, the purpose of evaluation shifted, from mapping values of particular events to grasping students’ learning experiences in the course as a whole.

The aims of the project were to analyse students’ descriptive evaluations as well as key features of course development over the years. A further aim was to study the correspondence between students’ descriptive evaluations and key features of course development.
Methods

The study started in 1995 and covers five years of development.

Participants and materials

Five hundred and thirty seven medical students attended nine Consultation Skills courses during the study period.

Materials from students. During the last day of the Consultation Skills course, students were asked to anonymously answer only one open-ended question: “What do you think of the course in Consultation Skills, with reference to the course design and examination? “ From spring 1996, a tick box for marking students’ gender was included in evaluations.

Materials from teachers and course organizers. Materials from teachers were course records and documents; plan of learning objectives, course schedules, teachers’ schedules and assessment guides; teachers’ protocols from systematic evaluations after each course and weekly protocols from course team meetings.

Procedures

Students were given 45 minutes of the last part of the course schedule to finish their evaluations. The evaluation question was attached to two blank sheets of paper and was distributed to students in a lecture room. Most students spent over 30 minutes writing their evaluation.

Data collection

Data from students. Four evenly distributed courses over the five-year period produced 158 evaluation stories that were used as sample. Student data
consisted of 214 pages of written text from autumn 1995, spring 1996, spring 1997 and autumn 1998. (Table 1). Gender proportions of the whole material were retained.

- Table 1 about here –

Data from teachers. Records and documents described under Materials from a series of courses were included as data: autumn 1995, spring 1996, spring 1997, autumn 1998 and autumn 1999. In all, course documents comprised about 250 pages of text. (Fig 1).

- Fig. 1 about here -

Six weeks after termination of a course, results from students’ evaluations were presented in follow-up seminars. The work of facilitators and teachers was also discussed in small groups and followed by reflection. Evaluation results were collected and discussed by the course committee and after critical reflection; some were implemented in the next course. The course committee met once a week throughout the years and notes were taken.

Data analysis

Step one. Analysis of students’ descriptive evaluations. A content analysis of text was performed [13,14]. Data were analysed twice; first as part of teachers’ immediate evaluation analysis after each course and then in a retrospective more thorough analysis. In the immediate analysis, evaluations were coded by writing core quotations, addressing main teaching and learning events and students’ experiences. Similar citations were summarized and major patterns of
students’ statements and course experiences were identified. Recurrent themes emerged from these preliminary analyses.

The research analysis of students’ descriptive evaluations was performed in 2002-2005 and consisted of the following steps:

1. Answers were first thoroughly read in extenso, reaching for a global understanding of the content in each student’s course story.
2. Students’ statements were coded into general categories.
3. Tabulations were also used in order to encompass an overall picture of students’ statements in stories.
4. Categories were established on basis of 2 and 3.
5. Main themes were condensed.
6. Deviant cases of students’ statements not fitting main themes were identified.

Step two. Analysis of key features of course development. Key features in course development were identified by content analysis of a series of course records and documents (see above). The text material was abundant. Therefore, Bigg’s framework of main components in university education (learning objectives, teaching and learning activities, assessment, learning climate and institutional climate, rules and procedures) was used [15]. Thus, changes of main course components were focused in the analysis and a template style was used [16, 17]. It implied that data were arranged according to the framework, units were identified, and the achieved material was read several times in close chronologic comparison. Finally, key feature themes were formed.

Step three. Correspondence between main themes of students’ descriptive evaluations and key features of course development. In the last, third step, results from content
analysis of students’ descriptive evaluations and content analysis of key features of course development were brought together. By these measures a corresponding pattern was searched for, thus reflecting the impact of students’ evaluations on course development.

To increase reliability and concordance of the three steps of analysis, AS and CB who participated in course development read half of the evaluations, assessed and checked analysis themes. Interpretations were discussed by main author and co-authors AS and CB during several meetings. Initial data was expanded and after re-analyses, concordance was reached. Theoretical perspectives used in interpretation were an educational learner-centred perspective and patient-centredness in medicine. The trustworthiness of data was further tested at a seminar by two external assessors from the medical faculty and at a Nordic conference of education and research in medical communication. The assessors and research colleagues recognized our main experiences and it seems as if our findings are transferable to their context.

Results
Students’ descriptive evaluations and course documentation presented a rich and varied material. Length of students written answers increased during the period of study, from a mean of 1.1 to 1.7 pages of text.

I Analysis of students’ descriptive evaluations
Seven main themes emerged in the analysis of students’ descriptive evaluations and illustrate students’ learning experiences from the course during four years.

A framework of the content analysis is presented in Table 2. Main themes and categories supporting the establishment of main themes are presented below.
At last, learning professional skills in practice

Students expressed great enthusiasm when experiencing the real life of medical practice.

Learning goals articulated. Some students articulated basic learning goals; how to interview patients, how to perform a physical examination and how to write a medical record.

Active learning in practice. Most students were eager to express the importance of meeting GPs and to be trained in physical examination skills. Consultation training was specially appreciated in primary care.

Missing professional training in earlier medical studies. A rather harsh tone of disappointment was present in some of these statements of students’ learning experiences in earlier medical studies. Expressions used were e.g. cramming and an anonymous or even “inhumane” learning environment.

Active and self-directed learning

Course content does not fit to lectures. Some students expressed that the content in lectures of consultation skills and issues of the professional role would be more suitable for interactive group discussions.

Compulsory didactic activities criticized. In the first parts of the material compulsory activities were put in question and a clear protest could be traced. This category vanished after changes in 1997 to a reduction in compulsory activities.

Lack of unity
Miscellaneous course content. Some students were confused by too many different learning activities, not finding “the red thread” of the course.

Uniform guidelines to facilitators wanted. These statements were complaints of different standards in training of physical examination skills and assessment.

Course design works

New ways of learning. New ways of learning in new settings compared to earlier studies were mentioned. In some of these statements, students were astonished that they became so emotionally tired from clinical experiences.

Mix of practice and theory. Students made a positive remark on the course design’s mixture of practice training and didactic modules. Some were surprised that their fast introduction to patient encounters in primary care turned out so well.

Authentic and relevant practical examination

Practice examination a learning experience. The practical examination was appreciated throughout the study period. Some students expressed satisfaction of their growing clinical competence shown in the examination.

Acceptance of examining reflections on practice experiences. From 1997, students were asked in a home essay assignment to reflect on observed consultations in primary care and to use conceptions of core learning objectives. Students admitted that they were initially hesitant but were later surprised that the home essay served its purpose.

Support and encouragement from facilitators
Support. Students expressed that they were well received by facilitators in practice and appreciated that facilitators were student-centred.

Encouragement. Students were challenged by facilitators to new tasks for which they were highly motivated. A sense of optimism and hope is clearly present in these statements.

A growing self-awareness and confidence

Self-reflection on learning. Statements from this category were seen especially in the later parts of the material, 1997 and 1998. While reflecting, these students discovered that their self-awareness and self-confidence had developed. Improved openness was also traced in the increased length of evaluations in 1997 and 1998.

Personal involvement and interaction. A combination of personal involvement and team work were elicited in an art-of- interviewing week and in small group work. More aware of patient’s perspective. This theme was stated as a consequence of events and experiences during the course.

Deviant cases

The deviant cases of the analysis displayed predominantly minimal and general remarks. An example is the statement ‘Very good’ as an evaluation of the whole course. Some cases not fitting into main themes were seen in spring 1996 and consisted of extensive comments on a debate held in a single lecture.

II Analysis of key features of course development

Analysis of key features of course development is depicted in Table 3.
As seen from Table 3, according to Biggs’ framework, a process of development occurred during the study period with respect to major course components. Active learning in context was enhanced and student’s degree of choice was strengthened. Consultation and clinical skills were identified as core learning objectives in a process of concentration. Education of facilitators in core learning objectives, including an introduction of a practice assessment guide, enabled assessment in context of core learning objectives. Of great importance in course development was the structured support and education of facilitators in 1997. Together with increased continuity, student-facilitator relationships and reflection were reinforced. External influences are seen in the last theme, a curriculum reform in 1996 implied reorganization and concentration.

There were also dead ends and drawbacks in course development. Many of them were due to too high an ambition and efforts to cover too much content. An example of this was to expand students’ group assignments by asking them to present a written group project. The project report should be presented in a seminar and was also to be criticized by their peers, in an opponent procedure. However, motivation was lessened and the quality of group products was low. Students conveyed that they were distracted from central course content by the formal requirements. Thus, learning from less successful events was also an important part of course development and applies in particular to the key features ‘concentration’ and ‘core learning objectives’.

III Correspondence between main themes of students’ descriptive evaluations and key features of course development.
Main themes of students’ descriptive evaluations and key features of course development are brought together and depicted in Table 4.

A corresponding pattern is seen in main themes of descriptive evaluations and key features of course development. A number of observations support this relation. Students’ reported urge to learn professional knowledge and skills mirrors that these areas being gradually selected and communicated as core learning objectives. In addition, a lack of unity of course content perceived by the students corresponds with education of facilitators in core learning objectives. Assessment in context of core learning objectives matches students’ perception of an authentic and relevant examination. The pattern of correspondence suggests that students’ descriptive evaluations had an impact on course development.

Since course development occurred in a process over five years, it is also possible to discern reciprocity. Students’ evaluations affected course development and course development also affected students’ evaluations. Thus, structured support and education of facilitators parallels students’ main theme ‘Support and encouragement from facilitators’. Similarly, reinforcement of student-facilitator relationships mirrors students’ reports of growing self-awareness and confidence in becoming a physician. External factors also contributed to course development. A curriculum reform in 1996 implying reorganization and concentration of course content. Practical consequences of the reform were doubled student courses during one semester and coordination with a course in clinical pharmacology. Another external influence was input of educational knowledge; from local scientific evaluations of the Göteborg curriculum and studies in higher education [12].
Discussion

Students’ descriptive evaluations were helpful as a feedback instrument and gave voice to students’ learning experiences. Students apparently longed for learning clinical and consultation skills and wished to be active and self-directed. Moreover, some students perceived a lack of unity of course content. Throughout the study, an authentic examination in practice and support from facilitators emerged as central themes. Signs of development were traced in a growing self-awareness and confidence in becoming a physician. A corresponding pattern of students’ evaluations and key features of course development was seen, indicating the impact of students’ descriptive evaluations on course development. Support to facilitators and external influence from a curriculum reform also contributed to course development.

Comments on method

Limitations of the qualitative method in our study concerns credibility of data and the analysis method. Credibility is increased by conveying the analysis performed and the theoretical perspective used in interpretation [13,17]. In three consecutive steps of analysis, a quite voluminous text material covering five years of course development was brought together and condensed. In order to ensure reliability, fifty percent of students’ evaluations and course documentation respectively were read by two authors. In addition, main authors’ participation and involvement in course development might have disturbed the trustworthiness of information obtained. Four strategies were used to balance this risk. First, main author’s preconceptions were clarified before analysis; second, the theoretical perspective used in interpretation was presented, third; two co-authors read and checked analyses of data, resulting in
expansion of data and re-analyses, and four; credibility was tested by external assessment in seminars and in a Nordic research conference.

Research on student ratings of university teaching has been thoroughly reviewed by Marsh [18]. University student ratings are reported as quite reliable and reasonably valid and that useful information can be obtained in ratings. In educational research, as well as in medical practice, the utility and functional aspect is highly relevant [19]. Even though our research method is different from structured ratings, the functional aspect and the relevance to colleagues in medical education is similar.

Another concern may be the questions put in evaluations. Some students might have been restricted by asking about their thoughts of the course, course design and examination. The opening question could perhaps have been even more open-ended to cover a wider spectrum of student’s learning experiences. However, the material we received in descriptive evaluations was rich and many facets of students’ personal experiences and thoughts emerged spontaneously in statements, thus transforming students’ evaluation feed-back into a “legible choir of students’ voices”. Despite the restricting components, we think the question was open enough to yield useful feed-back in course development.

Content analysis as a method of analysing evaluation data is discussed by Lincoln & Guba [20]. They separate analysis of manifest content and interpretation of latent content and argue the validity of interpreting content which is latent in documents and records. In our analysis of students’ evaluations, the last phase of forming themes used latent content to some extent but the emphasis was put on analysis of manifest data. A combination of a scientific approach with context knowledge from clinical
practice was required in the interpreting process. Listening to students was prioritized and that could be applied to doctors listening to patients.

Group dynamics may represent another source of bias. Student-teachers relationships in medical education are not symmetrical [21]. Enlarged group reactions to e.g. the compulsory requirements for passing the course should be appreciated as a potential source of distortion in data.

**Comments on selection**

The student sample was collected from four evenly distributed courses in order to avoid accidental results. Students in the study were not different from other courses in terms of student characteristics and passed/approved rates. In a Scandinavian context of undergraduate medical education, a mean response rate of 70% of voluntary evaluations, obtained over four years, seems acceptable [22]. However, the relatively low (46%) response rate in 1997 should be noted. The reason for the low 1997 response rate remains unclear, but a course party held the night before might be a factor to consider. On the other hand, gender proportions are retained and the overall response pattern in 1998 students (70% response rate) was similar to 1997 students. Our assumption is that students who actively chose to respond were more positive to the course than non-responders.

**Comments on results**

After two years of preclinical studies, an accumulated urge for professional training is evident in students’ descriptive evaluations. It appears that hands-on training of clinical examination skills is pivotal in the transition to clinical education, forming a rite of passage in student’s professional socialization
process [6]. Student’s self-image as a future physician is probably confirmed by achieving doctor’s professional skills. From our experiences, learning clinical examination skills appears to be top of student’s learning agenda in the transition to clinical education. The concept of the consultation acknowledges the clinical context and learning examination skills seems to have a synergistic effect on learning consultation skills [8,10]. These impressions fit well with new evidence that communication skills appear to be context-bound and interdependent with knowledge domains of clinical competence [1,23].

Furthermore, results from research in medical education points out that experiential learning of communication skills has a clear advantage compared to didactic learning [24, 25]. The art of a dialogue cannot be learned by listening to a monologue. Learning in medical education is an “active, constructive, social and self-reflective process” [26] and this is indeed relevant if learning objectives concern the doctor–patient relationship.

The practice examination in an authentic setting was clearly appreciated throughout the study period and was expanded due to students’ wish to receive more feedback. In fact, the examination was the main steering tool in course change. Introduction of a transparent assessment guide to practice examination seems to have translated course objectives into comprehensible performance tasks for students. As a spin-off effect, group facilitators also became more aware of core learning objectives since they were involved in both training and assessment.

Interestingly, most of the reflective comments of self-awareness and growing confidence appeared after the extension of a learning relationship between group facilitators and students (see Table 3 and 4). This is noteworthy with respect to recent reports on the significance of student-teacher relationships in the transition to clinical
education and in professionalism curricula [4,5,6,21,27,28]. Additionally, the introduction of a reflective home essay on students’ observations from consultations in primary care might also have contributed to this theme. The home essay seems to have directed students’ attention and helped students to discern and articulate important features of consultation skills. Instructing students to reflect on field observations and use concepts from core learning objectives in their descriptions was quite different from an ordinary literature test. Furthermore, self-directed learning was strengthened in the examination by asking students to generate reflections on a self-chosen consultation experienced in general practice.

**The role of external influences**

As mentioned earlier, external factors affected the results. Biases seen here are organizational factors and bias from input of ‘external’ learning. A curriculum reform was implemented in the middle of the study period and due to shortage of personnel, a reorganization and concentration was necessary. However, these changes were well informed and guided by knowledge acquired from systematic analyses in course development. Furthermore, cooperation between the Curriculum Committee of the Medical Faculty and researchers in the Department of Education at Göteborg University played an important role. One of the authors (AS) chaired the Curriculum Committee of the Medical Faculty and another author (CB) was a member of the committee during the study period. These circumstances probably contributed to a climate positive to educational development and to implementation of the Action Programme in Education of Göteborg University [28]. Moreover, a scientific educational report on students’ evaluations inspired us to a new approach in course
evaluation [12]. Thus, aside of ‘internal’ learning from students’ stories, input from ‘external’ knowledge of learning processes in higher education gradually increased course leaders’ educational competence. An active intention and financial support to the initiation of the Consultation Skills course by the Curriculum Committee of 1989-1995 were also important factors in the overall course development.

**Conclusions**

In this study an open-ended, student-centred evaluation was used for a patient-centred course in the transition to clinical education. Students’ evaluation stories were helpful as a feed-back instrument and gave voice to students’ learning experiences. Students preferred an authentic professional setting and to be active in their learning of clinical and consultation skills. Continuity and support from facilitators in a learning relationship were also important factors. Within a framework of professional skills, learning physical examination skills seemed to have a synergistic influence on learning consultation skills. Reflection on practice promoted students’ self-awareness and professional role-building in the transition to clinical education.

Students’ stories were crucial in a learner-centred knowledge-building process of course development. Asking students to write an evaluation story appears to bring a sense of mutuality to course evaluations and create a new understanding of how students’ learning events were experienced in the whole of a course. Evaluators and course organizers should also consider organizational factors affecting course development. Continuity and endurance in the evaluation process must be emphasized for achieving relevant and useful results. In conclusion, students’ descriptive evaluations can be seen as important instruments in developing both courses and students’ learning.
Competing interests
The authors declare that they have no competing interests.

Authors' contributions
MW acted as the principal researcher, collected data and performed analyses.
BM substantially contributed to conception and design of the study and revised the manuscript. AS and CB made substantial contributions in interpretation of analyses performed, in revising the manuscript and in the acquisition of data.
GD and KL contributed to conception and design of the study and in revision of the manuscript.

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Figures

Figure 1

Evaluation cycle in course development

Evaluation cycle of teachers’ systematic course evaluation and development.
Consultation skills course, Medical faculty, Göteborg university.

Tables

Table 1

Study sample.


Table 2

Main themes of students’ descriptive evaluations.

Main themes of students’ descriptive evaluations. Framework of content analysis of students’ descriptive evaluations (n=158), Consultation skills course 1995-1998, Medical faculty, Göteborg university.
Table 3

Key features of course development.

Key features of course development 1995-1999. Content analysis using Bigg’s structure of major course components in university education. Consultation Skills course, Medical faculty, Göteborg university.

Table 4

Correspondence between main themes of students’ descriptive evaluations and key features of course development.

Correspondence between main themes of students’ descriptive evaluations and key features of course development. Consultation skills course, 1995-1999, Medical faculty, Göteborg university.
Fig. 1. Evaluation cycle in course development
Additional files provided with this submission:

Additional file 4: Table 4 Wahlqvist M et al Student-centred appr.doc: 36Kb
http://www.biomedcentral.com/imedia/5129799193053592/sup4.DOC

Additional file 3: Table 3 Wahlqvist M et al Student-centred appr..doc: 41Kb
http://www.biomedcentral.com/imedia/5477998799305359/sup3.DOC

Additional file 2: Table 2 Wahlqvist M et al Student-centred appr..doc: 46Kb
http://www.biomedcentral.com/imedia/3126374789305359/sup2.DOC

Additional file 1: Table 1. Wahlqvist M et al, Student-centred appr..doc: 33Kb
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