

Complex perspectives on learning objectives: stakeholders' beliefs about core objectives based on focus group interviews

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OBJECTIVE To understand core curriculum design and involvement of stakeholders.

METHODS Twelve homogeneous focus group interviews with a total of 88 students, house officers, senior doctors and nurses concerning an undergraduate emergency medicine curriculum. Following content coding of transcripts, we analysed by condensation, categorisation and qualitative content analyses.

RESULTS The focus group participants gave a range of reasons for defining objectives or outcomes. They found their involvement in the process essential. Their argumentation and beliefs differed significantly, revealing 2 opposite perspectives: objectives as context-free theory-based rules versus objectives as personal practice-based guidelines. The students favoured theory-based objectives, which should be defined by experts conclusively as minimum levels and checklists. The senior doctors preferred practice-based objectives, which should be decided in a collaborative, local, continuous process, and should be expressed as ideals and expectations. The house officers held both perspectives. Adding to complexity, participants also interpreted competence inconsistently and mixed concepts such as knowledge, observation, supervision, experience and expertise.

DISCUSSION Participating novices' perspectives on objectives differed completely from expertise level participants. These differences in perspectives should not be underestimated, as they can lead easily to misunderstandings among stakeholders, or between stakeholders, educational leaders and curriculum

designers. We recommend that concepts are discussed with stakeholders in order to reach a common understanding and point of departure for discussing outcomes. Differences in perspectives, in our opinion, need to be recognised, respected and incorporated into the curriculum design process.

KEYWORDS emergency medicine/ *organisation and administration; education, medical.undergraduate/ *organisation and administration; curriculum; attitude of health personnel; students, medical/ *psychology; medical staff, hospital/ *psychology; humans

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INTRODUCTION

The involvement of stakeholders in medical curriculum development is described regularly and recommended in the literature,^{1,2} and was also found feasible in a recent study by Morcke *et al.*³ They interviewed focus groups with medical students, house officers, senior doctors and nurses to identify an emergency medicine and traumatology core curriculum. The resulting curriculum included 43 learning objectives. However, the authors also found substantial disagreement between participants, who gave very different priorities to objectives concerning knowledge about clinical disorders, practical clinical skills, communication, leadership, personal qualifications and 'the art of medicine'.

To understand the nature of the substantial disagreement between stakeholders, we analysed the focus group participants' discussions and explored their perspectives on objectives and outcomes. The purpose was to gain a better understanding of core

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Overview

What is already known on this subject

Involvement of stakeholders in undergraduate medical education and curriculum design is described regularly in the literature, but in-depth analyses of stakeholders' underlying beliefs and perspectives on objectives are lacking.

What this study adds

We found that novices and experts held 2 completely different perspectives on objectives, and that stakeholders interpreted basic concepts inconsistently.

Suggestions for further research

To improve implementation of objectives and curriculum reforms, we need a better understanding of stakeholders' perspectives, and how these can be incorporated.

curriculum design and involvement of stakeholders. In our literature search, we have not found other in-depth analyses of stakeholders' underlying beliefs and perspectives on learning objectives.

METHOD

Our approach to the focus group method is based primarily on Morgan.⁴ From May 2001 to January 2002 we interviewed 12 homogeneous focus groups with a total of 24 medical students with clerkship experience, 23 house officers, 18 senior doctors and 23 nurses with house officers on call. Participants were sampled purposefully from a range of specialities, hospitals and general practice. We recruited up to 10 participants per focus group, systematically using multiple sampling strategies. Participants were compensated with 500 DKK (€66).

The focus groups were moderated by the first author using an interview guide, supplemented with probes.⁵ Initially, the moderator asked participants to share experiences and discuss the most important things to learn about emergency and traumatology patients as a medical student. Then, she asked which skills and conditions should be included in an undergraduate

emergency medicine and traumatology curriculum. Participants were encouraged to expand on why – or why not – a suggested learning objective in their opinion should be included. Consensus was not a goal, and dissent was invited. During the end of the interview, the moderator asked participants to reflect on learning objectives. If they did not raise these topics spontaneously, she probed for: 'if objectives are desirable and why', 'what did participants use objectives for', 'who should define objectives' and 'how did participants think about their own role in curriculum design?'. We concluded all the interviews in 2 hours. With participants' permission, the interviews were recorded and transcribed. Participants were anonymised during transcription.

Our data analysis is inspired primarily by Miles and Huberman.⁶ They call their epistemological approach 'transcendental realism', which is informed by social anthropology, and tilt towards more inductive – or grounded – methods. They gravitated to systematic analysis, but have a very pragmatic perspective. We coded our transcripts using the Ethnograph software and a template codebook. Our codebook stabilised two-thirds of the way through coding and the final codebook contained 268 items, of which 196 were different suggested learning objectives. Following content coding, we analysed transcripts by condensation, pattern coding and categorisation. We used displays and qualitative content analyses to detect patterns and augment interpretation. During the last interviews, results were reproduced and we reached data saturation. The research team reached consensus on the codebook, difficult and critical parts of coding, categorisation and interpretation as a part of validation. Analysis of the 196 objective items has been published,³ but we stress that analysis of all 268 items was an integrated process.

Focus group interviews suited our purpose well, because we intended to explore experiences and attitudes. However, the focus group method has limitations. The sample was non-random and small. Counts of codes can support pattern recognition, but data can neither be manipulated statistically nor uncritically generalised. Results are contextual.

RESULTS

Reasons for and uses of objectives in general

Focus group participants gave a range of reasons for defining learning objectives (Table 1, 1st row). These could be divided into 2 groups: objectives as external

Table 1 (1) examples of focus group participants' reasons for and uses of undergraduate emergency medicine objectives. Participants expressed (2) 2 different perspectives on objectives: theory-based and practice-based. (3) show students', house officers', and senior doctors' prime perspective. The Dreyfus' learning theory (4) is added for discussion

(1) Examples of participants' reasons for and uses of objectives	External rules 'What do they expect from me?' 'When can I back out of this?' 'To know which parts I can skip, like an omissions' list' 'As a condition for demanding access to clinical settings' 'It's to ensure standards'		Personal guidelines 'What should I expect from myself?' 'Knowing objectives ease anxiety – you know how you are doing' 'To prioritise essential objectives' 'It's the basis for accepting learning and teaching responsibilities' 'We need a basis for assessment'		
(2) Who? Where? When? What? How?	Theory-based objectives Experts Centrally Once and for all Minimum levels Checklists		Practice-based objectives Collaborative Locally Continuously Ideals Expectations		
(3) Perspective of focus group participants	Students		House officers	Senior doctors	
(4) Dreyfus' learning theory	Novice Context-free rules	Advanced Plus examples	Competence Chosen perspective	Proficiency Experienced perspective	Expertise Intuitive

rules and objectives as personal guidelines. Students primarily wanted objectives as detached, external rules outlining what teachers expected from them, and what was irrelevant for them to learn. Two students, for example, had this exchange (FG 7, code WHYOBJECTIVES, hit 26 of 32) (read FG 7 as focus group 7. Code WHYOBJECTIVES is how we coded this text section. Hit 26 of 32 signifies that Ethnograph found in all 32 bits coded WHYOBJECTIVES and assigned this quote number 26 of these 32):

Student 1: 'As a student, it's always nice to know, what is expected from you. Not just at university, but also when you come out. Am I well prepared or not? I have my holes there and there! It's such a chronic uncertainty you have, when you don't have any learning objectives. Am I doing alright, or am I not doing alright, compared to what can be demanded from me?'

Student 2: 'That's exactly it. What do they expect from us and what did we learn? Where is the limit to their expectations? When I come out to the ward, I often experience that they use a technical jargon or some examinations that I don't know anything about, but they expect me to know. (...)'

Student 1 again: 'It's also nice to know for the reason that when you are in a situation as a house officer then you are somehow conscious that they can demand this from me, or that one on the contrary could say: You can't demand this from me! I am allowed to back out.'

Senior doctors primarily perceived objectives as personal, integrated guidelines used to adjust expectations, assessment and responsibilities. One senior doctor said this about objectives (FG 14, code WHYOBJECTIVES, hit 13 of 32):

'It (learning objectives) makes it easier to be a newly graduated doctor, both for the doctor and for the department that is receiving them. Because maybe they can find each other, where they know what they get and he knows what is expected – from both sides. Then one is happier than one side having high expectations to the one coming, and the other thinking: Well, they'll probably tell me everything. and then one is let down, right? That is terrible.'

Two perspectives on objectives

We also found a basic difference in participants' beliefs, concerning who, where, when and how objectives should be designed (Table 1, 2nd row). Students basically wanted experts to develop conclusively a clear-cut, preferably national, checklist with minimum levels. Students would like to be consulted, although as part of the curriculum design process. Two students, for example, reflected together (FG 7, code HOWOBJECTIVES, hit 24 of 27):

Moderator: 'So [giving a summary], the ideal would be, if they centrally decided, that you should be able to interpret a normal chest X-ray, and distin-

guish dub-dub-dub (referring to blackboard) and then we give you influence on how this should be taught?’

Student 1: ‘Yes, that would be so great’.

Student 2: ‘But that they decide the objectives. In my opinion, those that know something about it, they should decide the objectives. We can take part in telling, how we think it should be passed on.’

Student 1 again: ‘Yes, how best to do it. In the curriculum committee, the VIPs (lecturers) have no insight at all into – if it says radiotherapy in the curriculum, then they find everything OK, then we have got a good plan. But how about the objectives and how it should be taught!’

Senior doctors, on the other hand, generally rejected expert-defined, top-down-disseminated objectives as clearly opposed to their own. Three senior doctors, for example, agreed (FG 3, code HOWOBJECTIVES, hit 16 of 27):

Senior doctor 1: ‘That depends who’s in those committees. If it’s me, then it’s fine. But I guess you feel the same way (group laughs)? Yes, we fully agree on that.’

Senior doctor 2: ‘But it sounds like, we actually did agree on the importance of coming down to earth again, to pull it in that direction.’

Senior doctor 3: ‘And that is maybe in opposition to those sitting on top of the hierarchy, because they – primarily there is too far from their everyday to the everyday of the house officer. It’s far too far. Therefore, they clearly shouldn’t set the limits. In my opinion it’s wrong. They simply set them too high.’

Senior doctors preferred a continuous, collaborative process involving themselves, students, house officers and local decision-makers. Most senior doctors preferred to discuss ideals and expectations, and definitely not minimum levels, as expressed in this exchange (FG 3, code OBJECTIVESDIFFICULT, hit 44 of 60):

Senior doctor 1: ‘What I have always feared most about educational outcomes of one or the other kind is that they are understood as sufficient. Well, in that way you give a wrong signal. There are actually no limits to how much one may know and be able to do.’

Senior doctor 2: ‘And it’s not minimum passing levels. I mean, clearly not. It’s not. It should not be understood like that.’

None of the senior doctors favoured checklists, but generally had reservations, as stated by this senior doctor (FG 3, code OBJECTIVESDIFFICULT, hit 35 of 60):

‘Many departments have something called a checklist. I haven’t met anyone who doesn’t criticise it, because it becomes so unmanageable. Because there are these levels that you have to tick off. If you have seen an echo (cardiograph), or if you can do an echo, or if you can interpret an ECG, or if you have done a lumbar puncture. It becomes so incredibly extensive.’

Nurses primarily shared the senior doctors’ reasoning, whereas house officers were ambivalent and expressed both perspectives on objectives.

Reasons for specific learning objectives

We analysed how participants advocated for or against including an objective in the undergraduate emergency medicine and traumatology curriculum (Table 2). Generally, doctors and nurses related objectives closely to daily work and practice. When trying to convince other group members, they used arguments referring to house officers’ responsibilities and tasks, importance to patient treatment and frequencies. For example, 1 house officer convinced the group with this argument (FG 11, code TREATMENT, hit 3 of 55):

‘Yes, but you are experiencing it! You have the life of a human being in your hands, and if you can’t put up this i.v. drip *now* [raised voice], then you have less chances in 5 minutes.’

Participating doctors often used emotional arguments and personal experiences as reasons for including a specific learning objective. Emotions particularly referred to fright, but also included for example embarrassment, ‘looking like a fool’, suffering a defeat or being a disappointment. Two house officers, for example, continued the above discussion on i.v. drips like this (FG 11, code EMOTIONS, hit 2 of 36):

House officer 1: ‘I was knockabout bad at putting up an i.v. drip, and such a simple practical thing took up much for me, when I was standing there. I knew that I had this Achilles’ heel, and I went in to

Table 2 How focus group participants most frequently advocated for or against including an outcome in the undergraduate emergency medicine and traumatology core curriculum. Also shown are the number of hits generated when searching Ethnograph for the codes. These numbers are neither an indication of the intensity of discussions, nor of how important participant found a statement

Code	Illustrating quote	Number of (hits) times used by			
		Students	House officers	Senior doctors	Nurses
Arguments for including an outcome					
Responsibility	'They have to, because if the nurse can't, the doctor must' [FG 3 (senior doctor), hit 53 of 91]	11	25	32	23
Treatment	'To assess if a cast is dangerous or not... You can do harm with it' [FG 12 (house officer), hit 54 of 55]	7	18	16	14
Emotions	'That's when you feel lonely – when you're out somewhere with some ambulance driver, and then the i.v. drip stops functioning' [FG 12 (house officer), hit 8 of 36]	3	15	14	4
Nice	'A comment on ophthalmoscopy: It would be nice if one could do it' [FG 1 (student), hit 1 of 31]	7	11	10	3
Expectations	'Nasogastric tubes, they expect you can do them, when you come out' [FG 9 (student), hit 23 of 28]	11	10	5	2
Own experiences	'I was unlucky and experienced a ruptured aorta aneurysm, so it should be essential to know something about that' [FG 2 (house officer), hit 19 of 23]	2	13	7	1
Arguments against including an outcome					
Postgraduate	'That thing with the cast, they really have to teach you postgradually!' [FG 12 (house officer), hit 10 of 54]	5	24	16	9
Specialist	'We quite liberally refer to ENT specialists and have never been blamed for that' [FG 2 (house officer), hit 17 of 31]	4	10	10	7
Not acute	'I never saw any and found them that acute' [FG 13 (senior doctor), hit 9 of 20]	0	8	12	0
Irrelevant	'It's completely irrelevant' [FG 13 (senior doctor), hit 9 of 17]	3	4	9	1
Practice	'Children are difficult, experience is needed' [FG 2 (house officer), hit 12 of 17]	5	9	1	2
Nurses	'No, we do that. I will attend to it' [FG 5 (nurse), hit 13 of 17]	1	4	4	8

him and knew: damn, now I have to put up an i.v. drip again! That thing about lacking some practical skills came to take up incredibly much for me. I could come from A to B this way (shows a large detour with hands) to avoid having to put up an i.v. drip or some other commonplace thing, because the practical things, which I couldn't do, came to fill up.'

House officer 2: 'Yes, and psychologically, because you happen to focus on it: Oh, no! Instead one could expend energy on something else.'

The students advocated for and against objectives differently from doctors and nurses. On the whole, students used few arguments, even when the moderator probed for reasons. Often they simply stated that an objective should be included without saying why. We counted how many times students advocated for including an objective, and obtained 84 hits on Ethnograph. In contrast, house officers came up with an argument in favour of an objective 153 times. Students, unlike doctors, rarely gave emotional reasons and only twice based an argumentation purely on personal experiences. One of their preferred statements in favour of including an objective was

that 'senior doctors expect it'. Relatively often, their argumentation was not about the objective itself, but if it was possible to learn it or not, as demonstrated by this student (FG 9, code POSSIBLE, hit 15 of 15):

'It's [knee examination] one of the examinations that – if one has had a proper demonstration – then – it's not like doing a rectal exploration on your study group [group laughs]. It's possible to examine each others' knees, right? Of course there is nothing wrong with exactly our knees, at least I hope not, but I definitely think that one should be able to.'

Interpretations of competence

A number of conceptual confusions appeared among participants. One of these concerned competence, which was interpreted inconsistently. It appeared that participants often interpreted 'can do' quite differently (Fig. 1). Many students and doctors believed knowing the principle or theory behind a skill was sufficient for 'can do'. That is demonstrated in this discussion between 4 house officers about cardiac arrest (FG 2, code KNOW, hit 21 of 42):

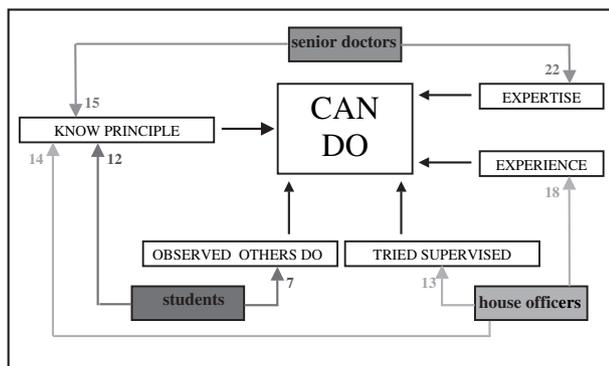


Figure 1 The figure shows how doctors and students interpreted 'can do'. The numbers refer to the number of times the jump was made during the interviews. For example, 15 times senior doctors found that you 'can do' if you know the principle.

House officer 1: 'I actually believe that one could demand that one knows how to treat the stuff on this list [refers to blackboard] by routine. Of course one can't practise it with patients, because one can't practice for example cardiac arrest unless there is a dummy. But one could demand that if you don't know the treatment of these things by heart when you take the exam then you fail.'

House officer 2: 'But that is not being able to do it. That is having a very profound theoretical knowledge about it, and maybe having done something supervised. But that is not being able to do it on your own.'

House officer 3: 'One has to know the theory so well that one can do it in practice. That is what it's about, that you aren't paralysed, when you face a converter and a cardiac arrest. So, if nothing else, then one must have read the book 50 times, so that one knows where to place them and how to do it.'

House officer 1 again: 'One has to know the theory so well that one can say: You do this and you do that!'

House officer 4: 'Often it's about telling others what to do. One has to say: Put up two i.v. drips. (...) One can learn that theoretically, and then carry it out.'

Students and house officers regularly confused teaching methods with competence. Students, particularly, said that if they had observed how something was performed they could do it; for example, a student said (FG 9, code SEE, hit 10 of 10):

'And then I find that you have to be able to at least set Colles' fractures and such, haven't you? You can learn it in 10 minutes, if you only get to see one.'

House officers in particular found that if they were just given the chance to try something under supervision then they 'can do'. They also connected experience to 'can do'. It is not sufficient to 'can do', 'you only master something, if you also believe that you can do it', a house officer said. They connected competence with 'can do perfectly', 'can do with guarantee every time', 'routine' and 'knee-jerk reaction'.

Senior doctors 22 times during interviews lifted 'can do' to the level of expertise, and in only 2 of these discussions the group disagreed. The jump was, for example, made by expressing 'can do' as 'doing what a good clinician would do' or including contextual factors in the 'can do' level. For example, the basic skill of taking a history was expanded by this senior doctor (FG 13, code EXPERT, hit 15 of 42):

'They have to be able to take a history, and get what is relevant, and current, and relate it to the organs. Then they have to be able to do the general physical examination, and they simply have to just come up with a resume, and then it's some kind of EU standardisation where we also need a plan relatively quickly. Well, they have to be able to do that!'

DISCUSSION

We have made an in-depth analysis of the perspectives of students, house officers, senior doctors and nurses on learning objectives in an undergraduate emergency medicine and traumatology curriculum to gain insight into stakeholder involvement, and thereby curriculum design. We found that participants gave a range of reasons for defining objectives. They found their involvement essential and, thereby, clearly supported official recommendations of including stakeholders in the curriculum design process. Nevertheless, we also found complex perspectives on core curriculum design among participants.

In the 1980s Dreyfus and Dreyfus formed a learning theory that has impacted the understanding of expertise.⁷ Based on their and other researchers' data, they suggested a development from novice via competence to expertise. We have included their

model in Table 1, as it might explain partly the different perspectives expressed by the focus group participants. Starting with novices, they learn and use context-free facts and rules, according to Dreyfus and Dreyfus. This corresponded well with the views of the interviewed students. They wanted, needed and used objectives as external rules. In their opinion, experts should define the 'true' context-free core. Minimum levels and checklists should tell them what is expected from them. They could identify core objectives, but gave few reasons for their choices. Their concepts were based on theory. At the other end of Dreyfus and Dreyfus' development scale we find expertise, which is characterised by intuition. The interviewed senior doctors were experts. In agreement with the development scale, they preferred objectives as personal guidelines and ideals. Their perspective on objectives was complex, holistic, and tied to experiences and practice. They held an intuitive perspective, which was incompatible with objectives expressed as minimum competence levels. The participating house officers were found primarily in the middle of Dreyfus and Dreyfus' development scale, at the level of competence. Even if the house officers sometimes preferred minimum levels and checklists, these could not fully cover their perspective.

The interviews also showed that participants had a diffuse understanding of competence and expertise. They jumped from knowing, to seeing, to trying to master, to expertise, without recognising these jumps.

In conclusion, participants held completely different perspectives on learning objectives and outcomes, and competence was not well defined or understood. These differences in perspectives and conceptual understanding should not be underestimated, as they can lead easily to misunderstandings among stakeholders, or between stakeholders, educational leaders and curriculum designers. Perhaps stakeholders take an incomprehensible road during the implementation of a new curriculum, which make perfectly good sense to themselves. We recommend that concepts are discussed with stakeholders in order to reach a common understanding and point of departure for discussing outcomes. Differences in perspectives, in

our opinion, need to be recognised, respected and incorporated in the curriculum design process.

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