Title: Perceptions of graduating students from eight medical schools in Vietnam on acquisition of key skills identified by teachers

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Version: 3 Date: 26 August 2007

Author's response to reviews:

MS 4333096881485171

Letter to the Assistant Editor, BMC

Dear Ms Jazayeri,

We have uploaded the revised version of the manuscript in which we have tried to accommodate the comments of all three reviewers.

You can see below is a list of points that explain the changes or clarifications we made in response to the reviewers¿ comments.

We also attach a translation into English of the questionnaire used in the study, as requested.

We think that the paper conforms to the journal style, there was only one reference that according to one reviewer did not conform and that has been adjusted.

Thank you for your consideration. Please contact us if there is any further need for information or other changes.

Best regards,

Luu Ngoc Hoat

Responses to reviewers¿ comments

1. Reviewer: Jonathan Mathers
1. Formulation of the survey tool:

We have changed the text to try to explain it more clearly in the paper how the number and level of skills were selected and the reasoning behind it.

The selection of 129 skills was based on the experience from the KAS survey carried out among already graduated doctors [1], in which we selected 114 skills and we learned that it is feasible to conduct such KAS survey with around 120 skills. When applying in this survey, we decided to select 40% of 290 skills level 2 and 13 skills level 3, using a random numbers table after listing all the skills level 2 from 1-290 and skills level 3 from 1-13. Finally we selected 116 skills level 2 and 5 skills level 3. The number of skills on the questionnaire was higher because some of the selected skills level 2 contained sub-skills in the KAS book which were listed separately in the questionnaire. Because of the randomisation, there was variation of selected skills among the disciplines, although the larger disciplines were represented more frequently, as would be expected. During the preparation of the KAS book, there was much discussion (and some competition) among disciplines and teachers about the numbers and levels of skills that graduating students should have mastered. The reason to carry out the survey and to ask the students this question was to provide the teachers with another point of view about the skills they thought they were teaching and they thought they could require the students to have learned in the context of existing teaching facilities and conditions of medical schools. The skills with level 2 (can do without supervision but not confidently) and 3 (can do confidently) were more open to discussion than the level 1 (can do, but need supervision) since if students have to learn up to level 2 or 3, the teachers and schools have to spend much more time and facilities to teach, therefore, the teachers needed to be quite sure first that was necessary [1] [2] and that they were doing it with the existing capacity and facilities of schools (this paper). The results did help in the review of the final version of the book.

2. Administration of the survey tool:

We have changed the text slightly to try to make it clearer.

2.1 Timing - In Vietnamese medical schools, final year students have to take two examinations. One is a written exam, on theory (that the students need time to study for and is indeed quite stressful). The other consists of a practical assessment in the hospital or a small research project which is defended. The second practical part is spread out over a few weeks, to accommodate the many students, especially in the larger faculties with hundreds of students. The survey was conducted after the theory examination but during the practical assessment period, when the students would be less stressed and easier to contact. We had originally planned to do it after all had graduated but then too many would have been lost as they quickly return to their home provinces.

2.2 Process - The data collection was combined with a class meeting arranged by the Training Department to inform students about clearances they had to do after
taking practical examination but before they could go home. At the end of that meeting a researcher, who was trained in guiding students to complete this questionnaire, informed the students the purposes of this survey, invited them to participate (give consent) guided them how to fill in the questionnaire. The purpose was included in the introduction on the questionnaire as well (see the questionnaire included in the paper). It took them between one and two hours and the researchers were present to answer any questions. As noted in the paper, it was the members of the research team who supervised and supported the filling in of the questionnaires by the students, and checked that the questionnaires were complete as they collected them.

2.3 Response rates - Because the reason for students to come to the meeting was not specifically for the survey, most of them did attend the meeting and most of those also agreed to complete the survey. The schools in the smaller cities had higher response rates, probably because the classes are smaller, the students easier to contact because they do the practice at only one or two hospitals. The main reason for lower rate of students in Hanoi and Thai Binh Medical Schools is most likely that the meetings in those schools were conducted quite late in the afternoon, so some students had to go to the hospitals for their duty (in Vietnam, students have night duty shifts in the hospitals where they are studying every day from 4h30 pm to 7h30 am next day). The response rate of Hanoi Medical University was lower than in Thai Binh Medical School may have been because students were in Hanoi have duty in many hospitals, while in Thai Binh the students serve in only two hospitals.

3. Results

The first paragraph has been rewritten, hopefully clearer now.

Validity of the analysis in the Table 3:

3.1 Table 3 shows proportions of students reporting having achieved the level set by teachers in the KAS book according to disciplines and schools, so in each school we could calculate one proportion for one skill (based on the response of hundred of students in that school for that skill). However, because number of skills in each discipline varied from 1 to 14, we had to calculate the mean of the proportions for disciplines represented by more than 1 skill. To compare these means of proportions among disciplines, regardless of the school they came from, we need the last column. To compare the means of proportions among schools, regardless of the disciplines, we need the last row. However, we had indeed made a mistake when calculating the means in the last column and the last row. That should be a weighted mean of the mean of the proportions. That has been recalculated and the table has been adjusted. We appreciate the critical eye of the reviewer on this point.

3.2 Regarding the point about Obstetrics and Gynecology, the text has been revised.

4. Discussion
The reviewer is quite right that medical students should probably not be expected to learn all of skills to the level that the teachers proposed. But in this study, we tried to find some more evidence besides ones we had from the other sources [1,2] to facilitate discussion among teachers to set level for skills to be more appropriate and realistic. As mentioned above, students who graduate after 6 years of medical school in Vietnam are allowed to practice and immediately take up posts, mostly in the state health service but can also enter private practice. Of course they will continue to learn when they join specialisation or post-graduate training, but to be able to join post-graduate training (master and PhD), doctors should have at least two year working experiences, that is different in Western countries, so graduates should have mastered at least a number of basic medical skills by the time they graduate,

5. Other comments

We tried to use several figures to present the results that can be easier for readers to compare and see the differences, but it is true that we forgot to put labels in two exits of the figure 2 (now become figure 1), so that it made confusion and difficulties to understand. It now was improved and we hope it can be acceptable. We highly appreciate this comment of the reviewer.

We have seen the updated version of Tomorrow¿s Doctors and included it in the references now.

We have discussed the relationship between the KAS book and other types of international learning outcomes in the article published elsewhere on the process to produce the book [2] but have added text to the discussion as well.

2. Reviewer: Gerard Majoor

1. The Johari Window discussion has been removed.

2. The reviewer is quite right to point this out and we have replaced the names of the schools with letters ¿ we should have thought of this ourselves and greatly appreciate the suggestion by the reviewer.

3. Response rate has been added to the text.

4. Text revised.

5. Text revised.

6. We put this in the methods section because the reader should be clear while going through the results that we are not measuring student skills levels but the graduating students¿ perceptions of their skill levels. When asking colleagues to review the manuscript we encountered that problem, and tried to avoid it by including this paragraph here. Therefore we propose to keep it in the methods section.
3. Reviewer: Enoch Kwizera

1. In the interests of varying the language in the text somewhat, we did use different terms interchangeably. In our view, final year students (ending their 6th and final year), graduating students (about to graduate, having nearly completed their 6 years of study) can be used in this way. In some places we used ¿graduates¿ not as a description of the study group but as a description of the people who should have acquired the skills ¿ we have tried to go through the manuscript to clarify it based on the reviewer¿s comment. We also tested the variations on a number of other native English speakers and did not find any confusion with the terms we used. The comment regarding the 87% is theoretically true, but in Vietnam by the time students have reached this stage of their study the level of attrition is minimal, usually less than 1-2%. We have therefore modified the text to make this clearer. The point remains that the respondents included the vast majority of those who in a few weeks would become the cohort of new doctors in the country.

2. Methods

2.1, 2.2 medical schools ¿ We changed the Figure 1 (map of location of the eight medical schools) to Table 1 with additional information on the schools to clarify the distinction among the schools as to size, age and other teaching facilities. We highly appreciate this comment of reviewer.

2.3 In the system, which we have tried to make clearer in the text, the students have completed their theory exam but their practical assessment continues over a period of weeks to accommodate all of them in the different hospitals. It is therefore not so unlikely that the absent students were on hospital duty ¿ we have also added the fact, which helps to explain the differences among the schools, that in the two schools with the lower number of respondents (Hanoi and Thai Binh), the meeting to conduct the survey was held late in the day, when a lot of students would be required to be at the hospitals on duty (from 4h30 pm to 7h30 am next day). On the advice of the reviewer we have also removed the hypothesis that there might be bias in the sample with 74% response, since the assignment to the hospital duty is in turn, not based on level of skills of the students.

2.4 The questionnaire has been added and Table 1 was removed.

2.5 We have revised the explanation of the selection of skills for this reviewer as well as one other and described the method of randomisation.

2.6 We have explained better about the timing of the survey. In Vietnamese medical schools, final year students have to take two examinations. One is a
written exam, on theory (that the students need time to study for and is indeed quite stressful). The other consists of a practical assessment in the hospital or a small research project which is defended. The second practical part is spread out over a few weeks, to accommodate the many students, especially in the larger faculties with hundreds of students. The survey was conducted after the theory examination but during the practical assessment period, when the students would be less stressed and easier to contact. We had originally planned to do it after all had graduated but then too many would have been lost as they quickly return to their home provinces.

2.7 It is true that we can use analyses of variance to test the difference for statistical significance among schools and disciplines, but since main purpose of our study is to get more evidence from students to convince teachers to set level of skills in the KAS book more appropriate and realistic with training capacity and facilities of the schools, not to compare achieved skill levels of students among schools and disciplines, therefore to avoid any confusion, we did not include p value in these comparisons. Besides that we used the coefficient of variation which is appropriate for comparisons among sets of data, as opposed to the standard deviation, which compares variation within one data set. This was because we just wanted to look at the difference results from the different schools or for the different disciplines, not necessary to test whether those differences are statistically significant. As to the possible confounders in the Figures 4 and 5, the point of those figures was indeed to show that there are different possible sites where students could learn the skills. With additional information in the Table 1 that we just added in the manuscript, we think if may be clearer now.

2.8 We put this in the methods section because the reader should be clear while going through the results that we are not measuring skills levels but the graduating students’ perceptions of their skill levels. When asking colleagues to review the manuscript we encountered that problem, and tried to avoid it by including this paragraph here. Therefore we propose to keep it in the methods section.

3. Data

3.1 The first paragraph has been reworded to improve clarity. The Vietnamese system does not yet define ‘core’ and other objectives; indeed, the work described was part of a process to define the learning objectives for medical students. Teachers had proposed including this skill (detecting morphine in the urine) as a necessary skill with level 2 and this survey was part of the evidence used to convince them that only 12% of students said that they could reach the level proposed by teachers; therefore it should not be given that prominence in the KAS book, just as the reviewer suggests.

3.2 Table 2 presents distribution of 129 skills we used for the survey according to student level of achievement of each skill comparing with level set by teachers in the KAS book. They are presented in the format of percentile rank, not presenting only median, therefore we feel that the Table is still useful for readers,
especially since the other two reviewers did not suggest its removal.

3.3 This question of larger and smaller schools has been clarified by additions to the methods section. At the time the survey was done few of the schools had a clinical skills laboratory as described in the added text; we found it difficult to describe the size and extent of use of such facilities (there were too many variations in many measures needed across the eight schools) so have not included that information in such detail.

3.4 Text revised.

3.5 The figure 129 in the last line of column 3, Table 3 was removed and values in the last column and last line of this table now changed into weighted means based on the comments from another reviewer.

3.6 We are not sure about the comment regarding the labels and legends for the figures since as required during the submission process, the figures were uploaded separately without title and legends, while the title and legends were uploaded with the manuscript. Anyway from this comment and comment of another reviewer, we found that there was missing in titles of two exes in the Figure 2 (now became Figure 1) and we added them to be more self-explainable.

4. Standards for reporting and data deposition

4.1 Figure 1 has been replaced with the table providing more information.

4.2 The questionnaire has been added.

4.3 We are sorry that since the missing titles of two exes and the way of constructing the Figure 2 (now is figure 1) made a confusion for the reviewer in terms of repeating data between Table 3 and Figure 2. In the Table 3, we presented means of proportion of students reporting having achieved the level set in the KAS book, while in the Figure 2 we presented means of scores that all students scored for each skill (ranked from 0 to 4) and CV (measuring the score variation among students for each skill, in comparison with score variation of other skills). The data in the Table 3 answered the question that what are means of proportions of students reporting having achieved the level set in the KAS book according to schools and disciplines, while the Figure 2 answered the questions that what are average scores that students gave for skills belong to different disciplines and how big the variation of scores given by different students for skills belong to different disciplines. We hope that by reconstructing the figure and completing the exis titles things are clearer now.

4.4. Text revised.

5. Discussions and conclusions

5.1 Limitations have been added.

5.2 The issue of the status of the participants in the survey has been clarified and
5.3 As noted in the methods section, the point of the survey was not to make an assessment of the students' competences, which as the reviewer notes would have to be done in a more objective way, but to find out whether the students thought they had learned what the teachers were proposing they should have learned by the end of their studies.

5.4 Text has been revised.

5.5 Text has been revised.

5.6 In Vietnam there is a considerable difference in the technical levels including staffing and equipment and types of cases handled between the national/regional hospitals (accessible to students in the larger schools) and the provincial hospitals, accessible to the students in the smaller schools. We have tried to formulate it more clearly.

All students do some practice at district hospitals and community health centres. Our point refers to the difference between national/regional and provincial hospitals. We did not say that the provincial or smaller hospitals had a "very low technical quality of practice", only that the national and regional hospitals are higher. In Vietnam, unlike in many parts of Africa, there are no mission hospitals or other hospitals with external support and often international staff, which in Africa often provide a high level of service in a small hospital in a rural area.

5.7 Similarly to point 5.3, the issue in this paper was not to make an objective assessment of the skills, but to find out whether the students felt they had achieved what the teachers had proposed as learning objectives. In this case, if the students had overestimated their level of competence, and had learned the skills to a lesser extent than shown by the results, then as we said, the KAS book and the curriculum need to be considered more carefully because the teachers would not be succeeding as they expect.

5.8 In the paper referred to in the discussion, the recently graduated already practicing doctors were asked about which skills they often used and it appeared that most of them were working in clinical situations where the skills included under public health in this KAS book were not often needed [1]. That is why we made the statement as it is. Public health is an important part of the health service in Vietnam and most doctors responsible for public health activities do not work in the hospitals but in the preventive medicine service. But by far most of the graduate medical doctors work in a clinical setting where they in fact do not use or need to use most of the public health skills. The few they do need, such as those in nutrition, do appear in the hospitals. We have tried to make this clearer in the text.

6. Title and abstract

a. revised
Several parts of the text have been revised.

We included references 4 and 5 as ‘in press’ because they were exactly that at the time the manuscript was submitted. However, due to the in press status, those references were not available in PubMed when we used Reference Manager software to search, therefore we had to create new references in Reference Manager ourselves and we had a mistake as the reviewer found. In the meantime one paper has been published from 28 June [1] and the other has finished that stage of proof-reading since 8/7[2].

Reference 8 now changed to be complete.

Reference


Ref Type: In Press