

Second-year dental students' perceptions about a joint basic science curriculum

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Background. Medical and dental students often participate in joint basic science curricula, such as the basic science curriculum at the University of Pretoria, South Africa. Reports from the USA and Australia, however, show that it may be problematic because joint basic science curricula are mostly tailored around the needs of the medical students only, which may lead to prejudice and marginalisation of dental students. There are no local studies to inform decision-making in this regard.

Objectives. To determine whether dental students perceived the joint basic science curriculum at the University of Pretoria to be relevant to their needs and if they felt marginalised.

Methods. Reflective essays with regard to the 2011 and 2012 second-year dental students' perceptions of the first 2 years of study in the joint curriculum were qualitatively analysed using a thematic approach. Frequency distributions of the identified themes were also calculated.

Results. Despite positive comments, the dental students perceived that the joint basic science curriculum at the University of Pretoria may not be relevant to their needs and that they are being marginalised in the teaching and learning processes.

Conclusion. The current study highlights the need for improvements in the manner in which joint basic science curricula are being administered in order to foster interprofessional collaboration. Alternatively, dental and medical students should be separated to ensure that the educational objectives of basic science curricula are being met for minority groups, such as dental students.

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Globally, medical and dental university students share basic science curricula,^[1-6] promoting cost-effectiveness of student training.^[7] This strategy ensures that dental students develop a solid medical background. The approach has historical roots,^[8] and remains a current teaching and learning requirement for a dentist.^[9] The University of Pretoria, South Africa (SA) utilised a joint basic science curriculum for first- and second-year medical and dental students from the late 1940s to 2014.

A recent article by Ajjawi *et al.*^[1] identified the marginalisation of dental students in a combined medical curriculum at a university in Australia. Similarly, a US study showed that dental students felt like 'second-class citizens' in their joint curriculum and that its relevance was based on the needs of the medical student; it also contained too much irrelevant information from a dental perspective.^[3] Ajjawi *et al.*^[1] suggest that prejudice and stereotyping may be prevalent in joint basic science curricula. These factors may possibly be present from a social and psychological perspective,^[10] when two distinct groups have to interact in a joint curriculum. Medical and dental students sharing a joint curriculum may therefore pose undesired risks with regard to student learning.^[11]

Despite the identification of these problems, no studies or reports could be traced in the literature that describe how such problems are actively being addressed in terms of medical and dental students.

There are no studies in SA that investigate dental students' perceptions of their social and peer relationships with medical students in a shared medical curriculum. With the marginalisation of dental students being reported elsewhere,^[1] one should investigate this issue in SA. Further evidence in this regard may indicate the need to reconsider the use and management

of generic joint programmes locally in terms of the effect on learning and interprofessional collaboration.

Based on this assessment, our study investigated whether dental students at the University of Pretoria perceive the joint curriculum to be relevant and useful and if marginalisation is prevalent.

Methods

Ethical approval and permission for the study were obtained. Anonymous written student reflections of the 2011 (sample A ($n=53$)) and 2012 (sample B ($n=45$)) second-year dental student cohorts from the School of Dentistry, University of Pretoria regarding their experience in the first 2 years of the medical curriculum were retrospectively analysed using qualitative thematic coding methods.^[11] The frequency distributions of the coded themes were subsequently studied to complement the qualitative analysis.

The written reflection was open to comments that the students wished to share and specific topics such as marginalisation were not mentioned as part of the instruction, which was as follows: 'Write a one-page reflection about your experience during the first two years of study.' The feedback session took place without prior announcement and the students were not allowed to interact during this session. They were encouraged to give both 'positive' and 'negative' feedback.

Relevant phrases were identified from the responses of the students and were coded, based on the similarity of the comments.^[11] 'Relevance' and 'marginalisation' were pre-empted as key themes. Similar comments were grouped together based on common themes.^[11] Provision was made to identify new themes during the course of the analysis, based on the similarity of the students' responses.^[11]

Results

Ninety-eight students representing 80% of the total student population of the 2 second-year cohorts participated in the study. The remaining students in each cohort did not attend the feedback session.

The thematic analysis of the students' comments included 'relevance', 'marginalisation' and related topics (Table 1).

Qualitative results – what did the students say?

A selection of quotes from the students' reflections is given in Table 2.

Quantitative results – positive comments

Forty-two per cent of the students commented that the first 2 years of study were enjoyable, 35% described it as an interesting experience, and 26% and 23% mentioned that the joint curriculum was useful and relevant, respectively. A further 23% suggested that the joint curriculum may be advantageous to a dental student, while 15% remarked that it is 'good' practice. At least 12% mentioned that they gained numerous friends during this time, while 11% felt that they grew on a personal level.

Quantitative results – negative comments

More than half (54%) of the participating second-year dental students were of the opinion that the joint curriculum contained too much irrelevant information

Table 1. Thematic analysis of the top 20 comments of dental students with regard to their first 2 years of study at the University of Pretoria

Coded theme (student perception)	Sample A, n	Sample B, n	% of sample (A + B)
Positive feedback			
• Enjoyable experience	19	22	42
• Interesting experience	14	20	35
• Useful experience	6	19	26
• Relevant	12	11	23
• Professional advantage	11	12	23
• Joint curriculum is a good thing	14	1	15
• Gained numerous friends	10	2	12
• Grew on a personal level	1	10	11
Negative feedback			
• Too much irrelevant information	34	20	54
• Medical students superiorly treated	19	23	43
• Dental students feel excluded	15	22	38
• Challenging, with an intense scope	6	21	28
• Too much information	4	22	27
• Neglect of head and neck anatomy	12	9	21
• Dental subjects needed	9	8	17
• Overwhelming	5	9	14
• Difficult and stressful	3	11	14
• The joint curriculum should be split	12	2	14
• Lack of deep, meaningful studying	8	5	13

(Table 1). Forty-three per cent thought that the medical students were treated superiorly by lecturers compared with dental students and 38% felt excluded during the teaching and learning. The students mentioned that the first 2 years of study were challenging, with an intense scope (28%), and contained too much information (27%). Twenty-one per cent thought that the head and neck anatomy was neglected during the anatomy block. Nearly 1 in 5 students (17%) recommended that dental subjects should be included in the first 2 years of study, while 14% pertinently suggested that the curriculum should be split. Some (14%) perceived the first 2 years of study as being overwhelming, difficult and stressful, while 13% mentioned that the curriculum was conducive to a lack of deep and meaningful study.

Discussion

This study investigated the perceptions of dental students with regard to their participation in a joint medical curriculum at the University of Pretoria. Despite a substantial number of positive comments, it is evident that most of the seemingly negative results of this study correspond to findings of US^[3] and Australian^[1] studies.

Table 2. Perceptions from samples A and B (Table 1) with regard to the first 2 years in the joint medical curriculum at the University of Pretoria

Student perception

- '... good experience ...'
- '... enjoyed the joint medical/dental curriculum ...'
- '... did not seem to give us any information related to the actual dental field ...'
- '... demotivating to do work that is not applicable ...'
- '... feel it is a waste of time ...'
- '... more time should, however, have been given to the head and neck chapter ...'
- '... learned a lot of unnecessary anatomy ...'
- '... dental students have transferred to medical due to the intimidation we have to live with everyday.'
- '... medical students are treated as if they are superior to us ...'
- '... we do not have to be in joined field if it does not benefit the group as a whole ...'
- '... fact that it is more medicine-based than dentistry-based, it does sometimes get you under ...'
- '... would have been better perceived by us dentistry students if we were taken into account ...'
- '... if medical and dental students were in different classes, I think it would be easier ...'
- '... would love to have more hands-on practicals ... just basics so we can feel like dentists ...'
- '... enjoyed anatomy ... especially when we did the head and neck anatomy ...'
- '... we were able to have a background about the different diseases and the body as a whole ...'
- '... medical terminology was extremely useful ...'
- '... maybe one or two dental subjects should be implemented ...'
- '... help a lot if the dentistry faculty could communicate with our different block chairpersons ...'
- '... challenging in terms of workload ...'
- '... both challenging and interesting ...'
- '... you tend to read to pass instead of reading, understanding and pass ...'

The perception of dental students that the joint curriculum contained too much irrelevant information and that they were being marginalised were the two most important findings.

It is conceivable in a resource-constrained environment that faculty will design the curriculum to be applicable to the majority of the learners. It is within this paradox that the conflict and prejudice between the two groups arise.^[1] As there are usually more medical than dental students, shared curricula are often designed from a pure medical perspective, which may result in a situation where medical students perceive the curriculum to be relevant to them, while dental students perceive the opposite.^[3] Relevance, however, is a key element in adult learning.^[12] Adult learners mostly decide what is relevant or not. Participation in a joint curriculum, where one group feels that the content is irrelevant, will most likely lead to a breakdown in the learning processes.^[12] A lack of relevance may even neutralise the primary intent of a joint curriculum of providing the dental student with a solid medical background.^[13]

A large percentage of dental students thought that they are being excluded or stereotyped by faculty and that medical students are considered to be superior, which may be detrimental to the learning process and of little value for interdisciplinary co-operation.

Interdisciplinary co-operation has been propagated recently^[2] and is based on three principles: learning 'together', 'from' and 'about' one another to foster collegiality on an equal basis.^[2] The last two principles are absent in the current study. The results suggest that sharing a joint curriculum, where one of the groups is given preference, may cause conflict and division among the professions. The relative lack of comment about socialising and collaboration among the group in the written reflections may also suggest that negative perceptions regarding the joint curriculum dominate positive perceptions.

Two choices exist for addressing the situation.

Firstly, the dental and medical curricula could take separate routes. Such an approach may be costly, as some courses may have to be duplicated. Marginalisation and stereotyping will be eliminated to some degree, but possibly at the expense of interdisciplinary collaboration.

Secondly, being cognizant of the potential threats of a joint curriculum, it could be managed to suit the needs of all parties concerned. Consequently, the fundamentals of adult learning should be embraced;^[14] prejudice must be reduced through the support of the institution, equal status between the groups should be actively propagated, and positive expectations need to be encouraged. Furthermore, common goals should be set for both groups, but differences should be highlighted and respected.^[14,15] In practice this means that the basic medical sciences should be made more relevant for dental

students within the joint curriculum.^[13] Such an adjustment will require greater collaboration and communication between the medical and dental schools and may require additional resources.^[13]

Conclusion

The findings of this study are particularly relevant in the African context. Africa is a developing continent with considerable resource constraints. The establishment of joint basic science curricula may therefore be regarded as the most viable option to train students. The findings of the current study provide evidence – for the first time in Africa – that the use of a joint curriculum for medical and dental students may be problematic to facilitate interdisciplinary respect and co-operation, with potentially detrimental consequences from a learning perspective.

Should a joint curriculum be the only option from a resource perspective, the importance of 'relevance' of the content in a joint curriculum – as it relates to all parties concerned and the psychological factors of group interaction – should not be underestimated. Ignorance in this regard is likely to result in prejudice^[1] and possibly even a breakdown in the learning processes. Possible prejudice or a breakdown of learning processes would refute the original intent of a joint basic science curriculum to equip the dentist with more than only 'superficial' basic medical science knowledge.

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