Thematic Analysis Of Nine Years Of Feedback For Medical Student Teaching On The Spine And Proposed Future Improvements

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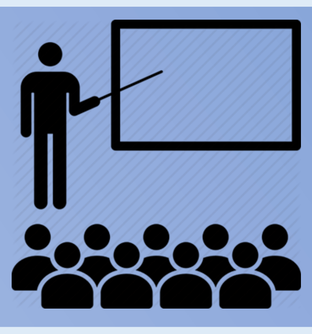
Background:

Since 2015 Cardiff Medical School have used a Case Based Learning (CBL) approach to teaching Year 1 and 2 students, consisting of 17 different cases, each 2 weeks long.

This research investigates 9 years of feedback of the 'Back Pain' case led by Mr M J H McCarthy (Consultant Spinal Surgeon). The case was made up of lectures, case discussions, practical and clinical skills sessions. The case has evolved in line with external factors and feedback over 9-years, but the content has remained broadly unchanged.



Aim:

To identify common themes in feedback for 9 years of teaching on the spine, via a two-week mixed model case-based learning method to Year 2 medical students. Analysis of the feedback to improve teaching to best educate future years of medical students.

Methods:

- Chat GPT 3.5 was used to analyse 9 years of feedback from 2015 up to and including 2023, collected using a link following the teaching period each year.
- The feedback forms gauge which parts of the case enhanced learning the **most** and **least.**
- Thematic analyses were requested from each year's feedback individually and from ALL positive and negative feedback comments over the years.

Results:

Feedback from 1,752 students was collected. Of 5,635 feedback comments, 71% were positive. There were 5 common themes found in these comments.

1,752 students over 9 years

3,996 Positive Comments

1,639 Negative Comments

THEMES

Skills and Examinations
- ✓ Practicing on peers and real patients with spinal pathology
- ✓ Pre session videos to show examination technique
- X Sessions too short

Content
- ✓ Creating interest in an orthopaedics career path
- ✓ Useful reading list
- X Increasing concerns through years of content overload (despite content remaining the same)
- X Too many lecture slides
- X Extensive reading list (remained the same)

Learning Environment
- ✓ Enthusiastic and engaging teachers
- ✓ Support in small group learning
- X Patronising - being 'picked on' for answers

Lectures
- ✓ Clear and comprehensive presentations
- ✓ Detailed lecture notes given after, not before lectures= increased focus during lectures
- ✓ Guest lecturer giving real life experience of spinal injury
- X Lack of slides prior to lectures = 'overwhelming' and 'hard' to concentrate

Teaching Methods
- ✓ No laptop suggestion encouraged active listening and increased focus
- ✓ Small group discussions
- ✓ Questions to test knowledge before and after lectures
- X Some felt forced to adopt a specific learning style

✓ = **Factors enhancing learning the most**
X = **Factors enhancing learning the least**

Discussion:

- Concern increased over the years about no laptop recommendation in lectures, alongside the lack of slides prior to plenaries, despite evidence against use of laptops in lectures [1]
- Annotating slides during lectures can aid concentration, balancing listening to lecture and note making[2]
- Clinical skills 'flipped classroom method' where students watch examination before then demonstrate clinical exams from memory[3] had overwhelmingly good feedback and can improve self confidence in examination[4]. This should be continued.
- Increasing concerned about content overload through the years despite no changes indicates a change in student attitudes.

Future Improvements:

1. **Introduction of 'Gapped notes'** are effective and have been shown to increase recall of information in university students[5]
2. **Replace Anatomy Lecture** with interactive module.
3. **Cheat Sheets / Checklists** introduced to make content seem less overwhelming and focus learning
4. **Condense the Reading List**
5. **Continue** employment of comfortable learning environment.

Conclusion:

The back pain case had overwhelmingly positive reviews with an interesting, well organised and engaging approach to teaching the spine. There is some rigidity in Year 2 medical student's teaching styles meaning they do not respond well to some forms of active learning and content volume. Teaching should continue to evolve in future with feedback and research-based teaching methods.

References:
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