Early Medical Students’ Evaluations Of Teaching Styles In A Virtual Learning Environment

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BACKGROUND

- Literature suggests that medical education is at a crossroads regarding pedagogical methodologies1
- This is complicated by a pandemic and the growing mental health concerns amongst medical students2
- Conflicting evidence exists regarding the most effective teaching styles for medical education: inverted classroom versus the traditional lecture model3
- Emerging evidence suggests positive outcomes on both learning and mental health of medical students with a shift in curriculum from traditional lecture to inverted classroom and team-based learning (TBL)3

OBJECTIVE

To compare and contrast using qualitative and quantitative methods the perceived effectiveness of three different teaching modalities: inverted classroom model, traditional lecture, and team-based learning.

METHODS

- Inclusion: First year medical students at a single institution in their first block
- A quantitative and qualitative survey was given to the students immediately after a genetics lecture during their first week of medical school
- A qualitative content analysis with consensus coding and triangulation of both the qualitative and quantitative data were conducted.
- 142 of 184 (77%) participants completed the quantitative portion
- 50 of 184 (35%) participants completed the qualitative portion
- Thematic saturation was reached after 30 quotes

QUANTITATIVE RESULTS

![Net Change in Confidence Number of Students (%)](chart)

<table>
<thead>
<tr>
<th>Net Change in Confidence</th>
<th>Number of Students (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase</td>
<td>56 (39%)</td>
</tr>
<tr>
<td>No change</td>
<td>38 (27%)</td>
</tr>
<tr>
<td>Decrease</td>
<td>48 (34%)</td>
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</tbody>
</table>

QUALITATIVE RESULTS

<table>
<thead>
<tr>
<th>Codes</th>
<th>No. of students (%)</th>
<th>Example Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods-material</td>
<td>38 (76%)</td>
<td>I didn’t understand erasure and imprinting during the lecture, which made the PBL very confusing and frustrating. I got there eventually, but I wish we could have talked more about that topic beforehand.</td>
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<tr>
<td>Frustration</td>
<td>32 (64%)</td>
<td>Fend the lecture more confused then I was learning these concepts in undergrad and will have to re-watch and teach myself the concepts at a later time.</td>
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<tr>
<td>Learning process</td>
<td>30 (60%)</td>
<td>Personally, I would have preferred to have had more thorough prework so I didn’t feel as lost during lecture. I’m sure not many of my peers feel similar about that, however.</td>
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<tr>
<td>Desire to review</td>
<td>18 (38%)</td>
<td>I think there needs to be a few minutes at the beginning for the prof to recap what we learned during prework – it seems like we jump into the “second level” right away without actually reviewing the concepts we learned and how they work.</td>
</tr>
<tr>
<td>Clear expectations</td>
<td>16 (32%)</td>
<td>I think the learning objectives need to be more clear on what we need to learn for our knowledge checks. I’m trying to fill in my learning objectives to know I’m prepared come test day, but when lecture and prework/learning objectives don’t line up, I am only more lost and confused as to what I need to learn.</td>
</tr>
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CONCLUSIONS

- Many hypotheses generated about medical school pedagogy, learning during a pandemic, and mental health of students
- Negative feelings and emotions demonstrated: query whether this reflects mental health of entering students vs. how medical school impacts mental health
- Quantitative data demonstrate highest perceived effectiveness with the lectures/polls teaching style with the least desired being TBL, different from shift reported in literature
- Most students increased in confidence in the material (39%), but 34% decreased
- Overall negative emotions expressed:
  - Desire for the learning objective to guide the teaching method used
  - Frustration with organization, absence of clear expectations, and overall amount of material
  - Query challenging expectations upon arrival to medical school

IMPLICATIONS

- Limitations: small sample size, single timepoint investigated
- Both the literature and these data highlight the necessity of high-quality instruction with trained TBL facilitators3

REFERENCES


DISCLOSURES

The authors have no conflicts of interest. Thank you to the students who participated in the study.