

Test Item Writing and Continuing Professional Development

The NBME /CACME Experience

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Background

- The National Board of Medical Examiners (NBME) and the Consortium for Academic CME (CACME) developed a CME activity centered on item writing for the NBME
 - We hypothesized that this experience would enhance professional performance beyond acquisition of skill in test item writing
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NBME Item Writing CME Program

Item-writing Workshop

Independent Study

- Assess learning needs
- Implement methods to address gaps
- Develop test questions

Peer Review/Group Discussion

Evaluation

- Quantitative and Qualitative Survey
 - Up to 50 Category I credits available
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Purpose of Pilot Study

- To identify the relationship between test item writing for the NBME and continuing professional development
 - To explore the impact of item writing on professional responsibilities and performance, especially clinical skills and teaching
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Methods – Qualitative Approach

- Study population
 - Participants of NBME Item Writing Workshop who were subsequently assigned to an NBME Committee
 - 3 years (2002, 2003, 2004)
 - Survey of 5 open ended questions
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Qualitative analysis

- ❑ Identify major themes through iterative readings
 - ❑ Responses grouped to refine themes
 - ❑ Apply codes to represent data elements embedded in responses
 - ❑ A response could be coded in multiple categories
 - ❑ Coding taxonomies finalized through consensus among coders
 - ❑ Examples selected to illustrate themes
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Results

- ❑ 89 NBME Committees over 3 yrs
 - ❑ $n = 602/809$ (74.4%)
 - ❑ Overall participant satisfaction with the activity was very high
 - ❑ Average credit claimed: 42
 - ❑ Data themes consistent over 3 years
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Participants reported the activity improved

- Medical knowledge base
 - Clinical thought processes
 - Skills in teaching and assessing learners
 - Content expertise
 - Skill of test item writing
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Impact on Clinical Skills

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|---|--------|
| Expanded fund of knowledge | 10-44% |
| Maintained/updated knowledge | |
| <input type="checkbox"/> Within specialty | 18-38% |
| <input type="checkbox"/> Outside of specialty | 15-22% |
| Improved clinical thought processes | 11-18% |
| Improved clinical diagnosis | 1-11% |
| Broadened perspective on clinical problems | 2-16% |

Improvements in Teaching and Assessment Skills

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|--|--------|
| Knowledge base for teaching | 8-21% |
| Understanding different levels of learners | 16-21% |
| Teaching methods | 4-23% |
| Ability to prioritize medical content | 4-17% |
| Assessment skills | 6-16% |
| Understanding of the teaching/learning process | 1-19% |

Improvements in item writing abilities

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|-----------------------------------|--------|
| Clarity and precision | 25-30% |
| Structure and format of questions | 10-19% |
| Efficiency of writing | 5-15% |
| Writing skills | 2-30% |
| Integration knowledge & reasoning | 1- 9% |
| Decreased ambiguity of questions | 5-11% |

Impact of Peer Review on the Educational Process

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|-------------------------------|--------|
| Outstanding! Superb! | 30-67% |
| Peer Learning/Shared Learning | 15-41% |
| Effective learning process | 8-21% |
| Feedback/Peer Review | 3-13% |
| Broader exposure | 9-18% |

Impact on Content Expertise

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|---------------------------------|--------|
| Enhanced knowledge base | 27-52% |
| Expanded content expertise | 25-36% |
| Stimulated independent learning | 13-16% |
| Improved educator/item-writer | 11-29% |
| Modest/minimal impact | 2-11% |

Quotable Quotes...

- ❑ *This is the most useful CME that I do.*
 - ❑ *Some of the best, most effective learning that I have ever participated in.*
 - ❑ *I believe that this is an extremely useful process for my personal education and growth.*
 - ❑ *In my job as a teacher of medical students, it was priceless.*
 - ❑ *It is a very intense learning experience...this creates a broader learning experience than our usual CME experiences...and helps us to become more well-rounded, which ultimately helps patients.*
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Conclusions

- The NBME Item Writing experience is a valuable professional development activity
 - Self-assessed improvements occurred in
 - teaching and assessment skills
 - writing skills (beyond test item writing)
 - integrative functions
 - clinical knowledge and expertise
 - content-specific expertise
 - clinical thought processes
 - The peer-review process is a critical learning component of this experience
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Conclusions

- This pilot advances our understanding of the impact of one educational activity on other areas of professional responsibility
 - Based on this pilot, further research should be undertaken
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Acknowledgements

□ CACME

- Penn State College of Medicine
 - Tracy Allgier-Baker, Dennis Lott
- Temple University School of Medicine
 - Robert Smedley, Catherine Thomas-King
- Jefferson Medical College
 - Timothy Brigham, Geno Merli, Joseph Seltzer
- University of Pittsburgh School of Medicine
 - Barbara Barnes, Rebecca Zukowski

□ NBME

- Denise Muschamp, Peter Scoles
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Five Open Ended Questions

1. How do you perceive the impact of the test writing experience in improving your clinical skills and practice of medicine?
 2. ...on your work teaching and assessing medical students and/or residents?
 3. What improvements have you noted in your own item writing abilities as a result of this experience?
 4. How would you evaluate the peer review experience on the educational process?
 5. What impact could this process have on your content expertise?
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