



Valuing and Evaluating Teaching in the Mathematics Faculty Hiring Process

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INTRODUCTION

Motivated by my interest in preparing graduate students to communicate clearly about their teaching effectiveness while on the job market, I conducted a **survey of mathematics faculty hiring committees** during the summer of 2006.

The survey was designed to determine (a) **how these search committees valued the teaching effectiveness of applicants**, especially in comparison with the applicants' potential for research, and (b) **how the committees evaluated the teaching effectiveness of applicants** in initial application materials, especially teaching statements, and in later interviews and other interactions.

The survey replicated and extended the work of Meizlish and Kaplan, [3] and [1], who surveyed faculty hiring committees in six other disciplines and encouraged me to build on their work by conducting a similar survey in mathematics.

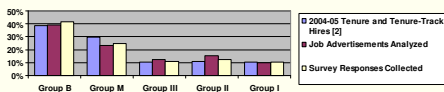
METHODS

Potential survey respondents were determined by analyzing all **job ads posted on the American Mathematical Society's employment Web site, www.ams.org/eims**, as of November 17, 2005. Of these 563 advertisements, 251 were found to be ones made by **departments of mathematics at colleges and universities in the United States that could result in the hiring of tenure-track assistant professors**.

A 16-question online survey was sent to the chairs of the search committees associated with these job advertisements. A total of 156 surveys were completed, yielding an **overall response rate of 62%**.

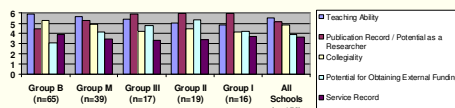
Departments at different types of institutions value and evaluate teaching effectiveness differently. Thus, the **results presented here are categorized using the groups used to classify departments in the AMS Annual Survey**. Departmental Groups I, II, and III are composed of doctoral-granting departments, ranked by "scholarly quality of program faculty" [2]. Group M contains departments granting a master's degree as the highest degree. Group B contains departments granting a baccalaureate degree only.

Distribution of Jobs, Advertisements, and Survey Responses Across AMS Departmental Groups



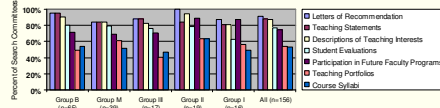
RESULTS – Importance of Teaching

Importance of Factors in Overall Hiring Process

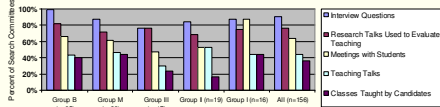


RESULTS – Application Materials and Interview Interactions Used by Search Committees

Teaching-Related Initial Application Materials Evaluated by Search Committees

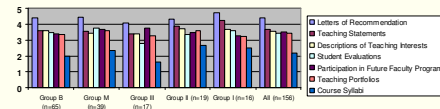


Later Stage Teaching-Related Interactions Evaluated by Search Committees

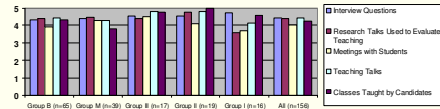


RESULTS – Usefulness of Application Materials and Interview Interactions in Evaluating Teaching

Usefulness of Initial Application Materials for Evaluating Teaching Effectiveness



Usefulness of Later Stage Interactions for Evaluating Teaching Effectiveness



RESULTS – Characteristics of Successful Teaching Statements

• Specificity (36%)

"Concrete description[s] of what the candidate has done in teaching to help students learn"

"General ideas not backed by classroom anecdotes are not worth much."

• Dedication to teaching (30%)

"The expression (explicit or implicit) of a love of mathematics and sharing it with others"

"Evidence of commitment to undergraduate teaching, including service and general education courses"

• Writing and communication skills (29%)

"The best teaching statements were written in a lively, engaging style that allowed the candidate's enthusiasm to shine through."

• Thoughtful reflection on one's teaching (28%)

"Gives some idea of the candidate's maturity and depth of thinking about the thinking-learning process"

"We wanted to know that the applicants had seriously reflected upon not only what they do in the classroom, but also why they do the things they do."

• Student-centeredness (24%)

"People who convey that they are passionate, committed, and will go that extra yard in assisting students"

"An effective teacher must be able to find many different ways of motivating students in service courses and general education courses."

• Match between the applicant and the hiring institution (20%)

"We paid particular attention to those statements which tried to speak to teaching at a liberal arts school like [ours]."

"It is in the candidate's and institution's best interests to make sure we are 'on the same page' when it comes to pedagogical matters."

Numbers in parentheses refer to the percent of respondents who referred to the characteristic in their answers to open-ended question.

RECOMMENDATIONS

Recommendations for Job Seekers

- Two-thirds of 2004-05 hires were at schools that value teaching over research. Prepare accordingly.
- Ask potential letter writers to observe you teach so their letters will be useful to search committees.
- Seek out and save student feedback on your teaching.
- Participate in future faculty preparation programs designed to improve your teaching skills.
- Take the lists of application materials in job ads with a grain of salt. Search committees look at materials they do not request.
- Make use of the characteristics of successful teaching statements reported by search committees.
- Prepare for teaching demonstrations and talks as much as you would for research talks.
- Be aware that search committees often use research talks to evaluate a candidate's teaching effectiveness.

Recommendations for Doctoral Programs

- Give graduate students opportunities to teach, especially opportunities to teach their own courses.
- Provide meaningful letters of recommendation that address teaching.
- Provide training programs designed to improve graduate students' teaching skills.

Recommendations for Hiring Institutions

- Consider a variety of application materials and interview interactions, some of which are uncommon but rated as highly useful by search committees.
- Be intentional about requesting application materials that you intend to evaluate.
- Be cautious about using a candidate's research talk to evaluate the candidate's teaching effectiveness.

REFERENCES

[1] Matthew Kaplan, Deborah Meizlish, Christopher O'Neal, and Mary Wright, A research-based rubric for developing statements of teaching philosophy, *To Improve the Academy: Resources for Faculty Instructional and Organizational Developers*, Vol. 26, (2007).

[2] Ellen Kirkman, James Maxwell, and Colleen Rose, 2005 Annual report of the mathematical sciences in the United States (third report), *Notices of the American Mathematical Society*, (2006), pp. 1345-1357.

[3] Deborah Meizlish and Matthew Kaplan, Valuing and evaluating teaching in academic hiring: A multi-disciplinary, cross-institutional study, *Journal of Higher Education*, accepted for publication.