

Figure 1. Poster assessments: comparison of MS and PhD. Possible scores are 1 to 3 (excellent to unsatisfactory); lower scores are better.

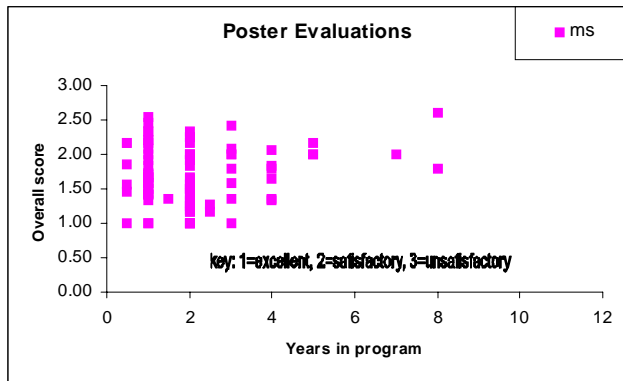
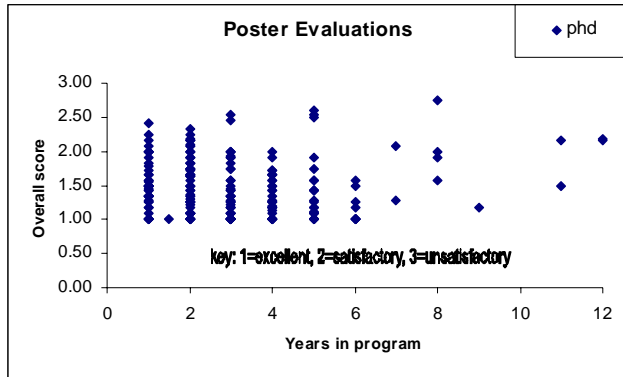


Figure 2. Poster evaluations versus years in program. Possible scores are 1 to 3 (excellent to unsatisfactory).

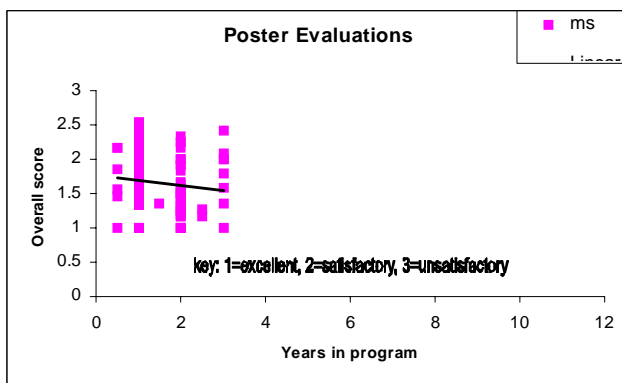
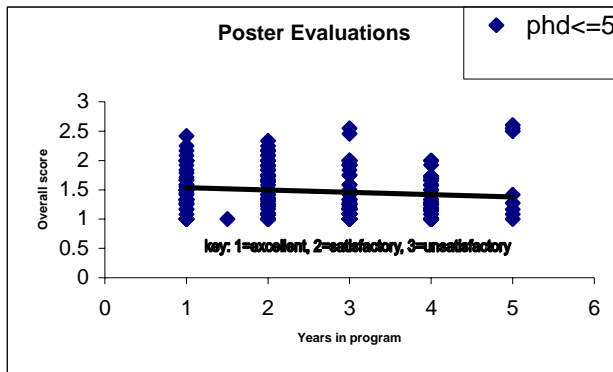


Fig. 3ab. Trends in overall poster score, limited to five years for PhD (N=162) and 2.5 years (N=80) for MS. Possible scores are 1 to 3 (excellent to unsatisfactory); lower scores are better.

## Candidacy Exam Histogram

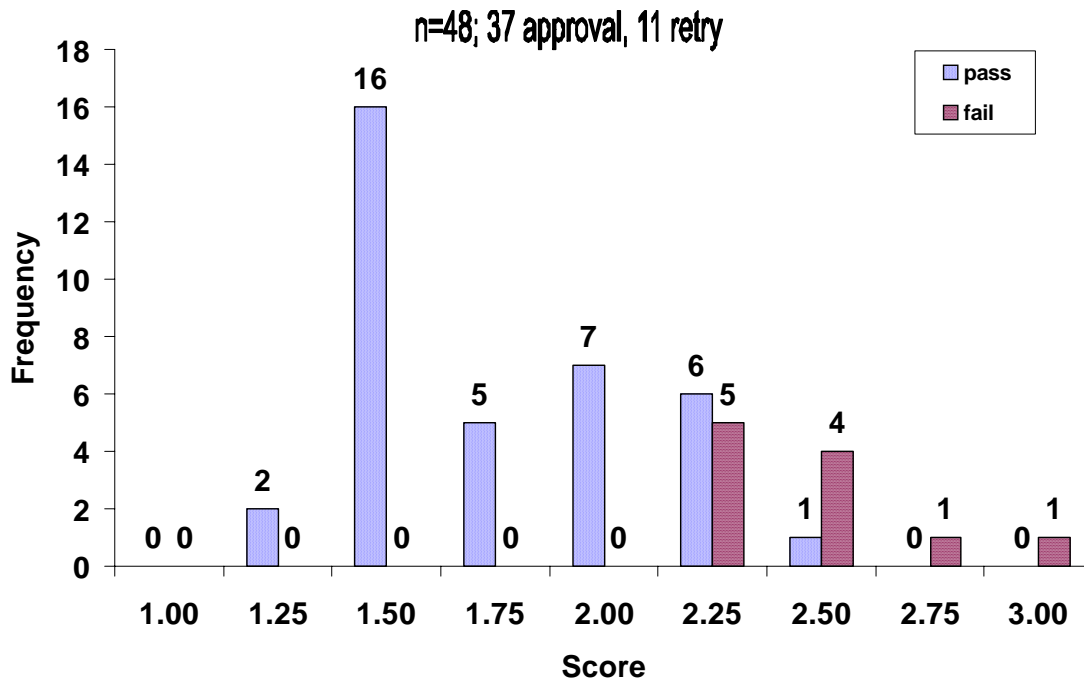


Figure 4. Distribution of mean overall score for pass and fail attempts at Candidacy Exam. Possible scores are 1 to 3 (excellent to unsatisfactory).

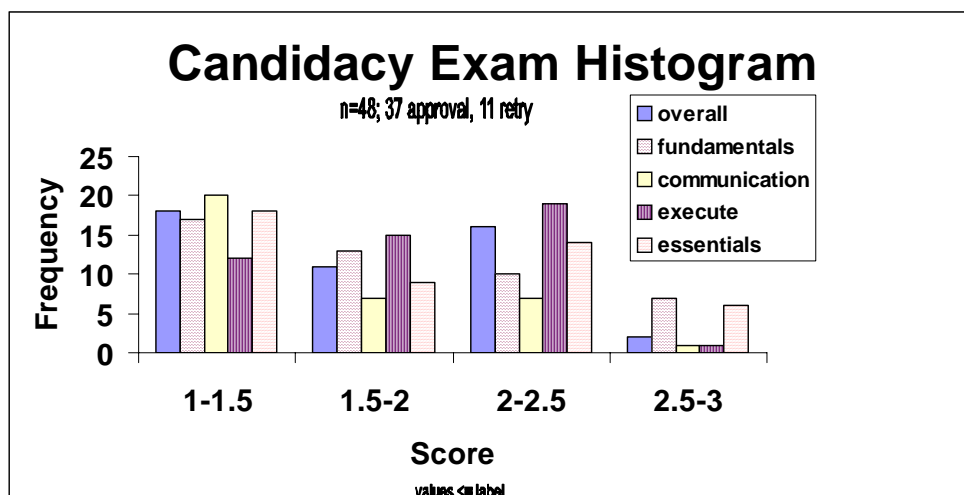


Figure 5: Category scores for both pass and fail on Candidacy Exams. Possible scores are 1 to 3 (excellent to unsatisfactory). Values are less than or equal to the x label (i.e., bars at 1 are only those scoring uniformly excellent). Communication scores are not available for the original assessment form. Categories are a) fundamental knowledge outside of the chosen experimental field, b) communication skills, c) initiate, plan, and execute, c) communication skills, and d) essential knowledge of the research area.

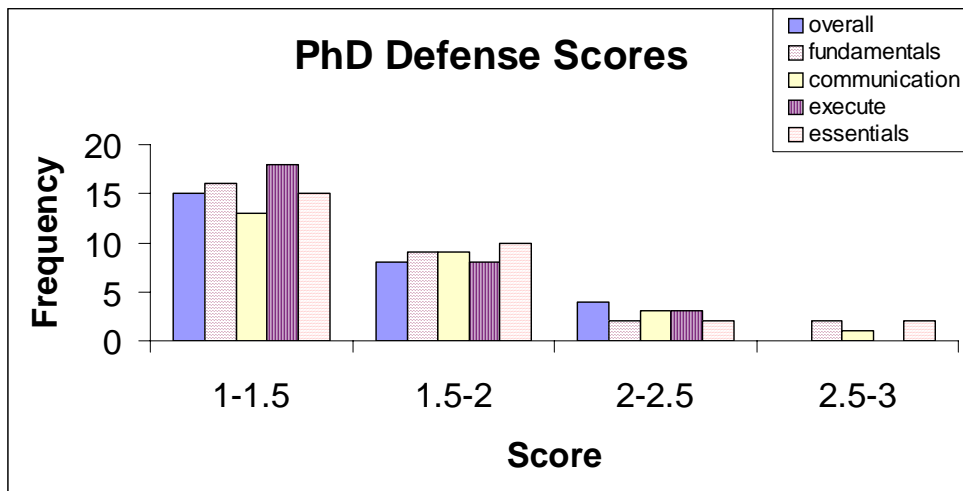


Figure 6. Distribution of scores at PhD defenses. Possible scores are 1 to 3 (excellent to unsatisfactory). Values are less than or equal to the x label (i.e., bars at 1 are only those scoring uniformly excellent). Communication scores are not available for the original assessment form. Categories are a) fundamental knowledge outside of the chosen experimental field, b) communication skills, c) initiate, plan, and execute, c) communication skills, and d) essential knowledge of the research area.

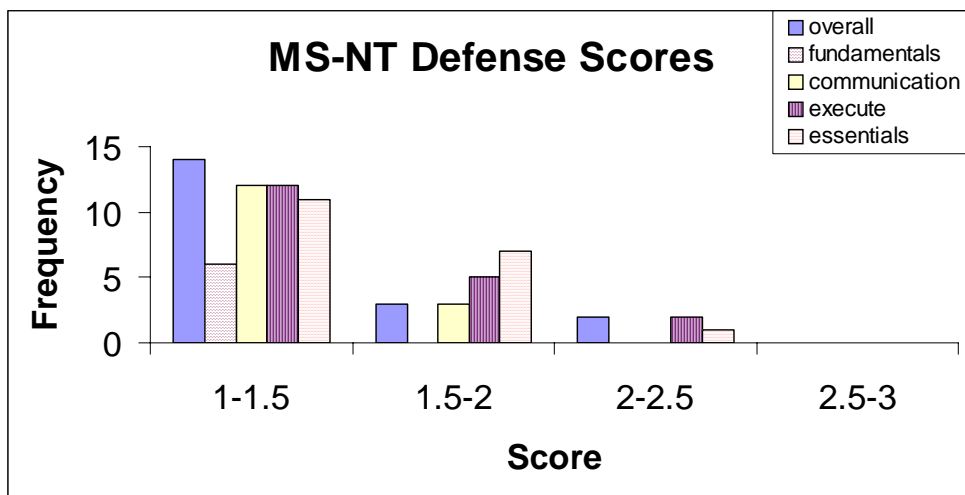
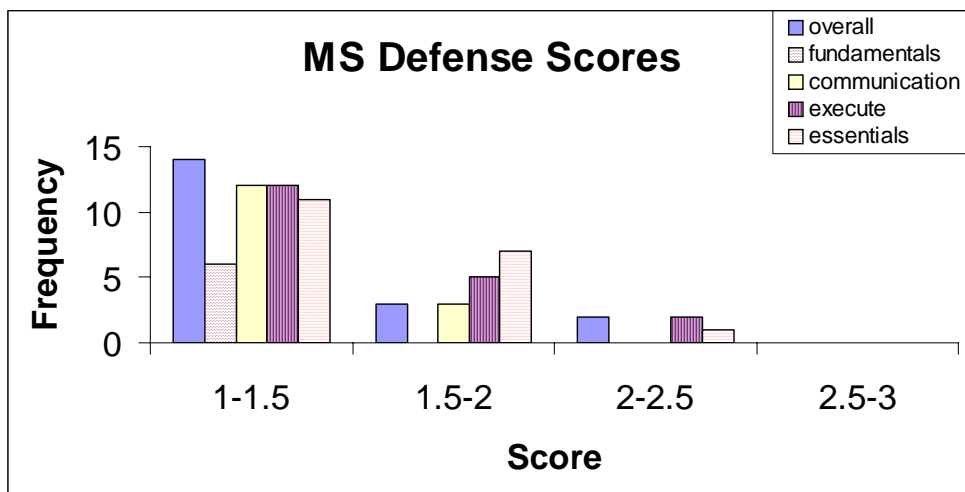


Figure 7. MS thesis and MS-non thesis defense scores. Possible scores are 1 to 3 (excellent to unsatisfactory). Values are less than or equal to the x label (i.e., bars at 1 are only those scoring uniformly excellent). Communication scores are not available for the original assessment form. Categories are a) fundamental knowledge outside of the chosen experimental field, b) communication skills, c) initiate, plan, and execute, c) communication skills, and d) essential knowledge of the research area. Communication and fundamental knowledge were not scored for all students.

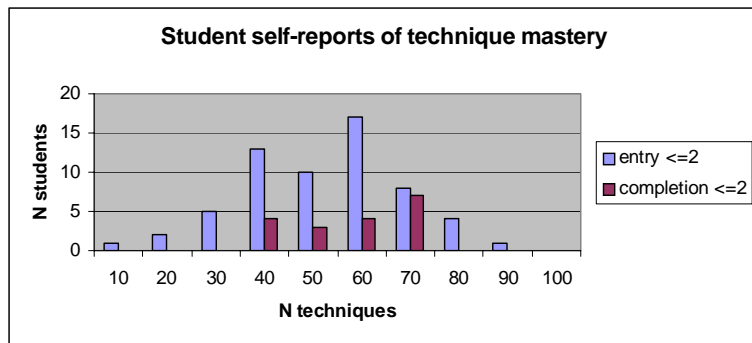


Figure 8. MS students techniques self-reports of “satisfactory (2)” or “excellent (1)” at program entry (N=61) and completion (N=18). A shift of the distribution to the right represents improvement. Number of techniques queried (maximum N) is 106.

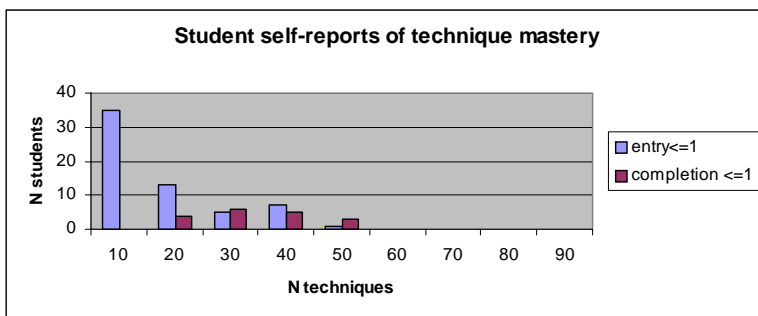


Figure 8. MS students techniques self-reports of “excellent (1)” at program entry (N=61) and completion (N=18)

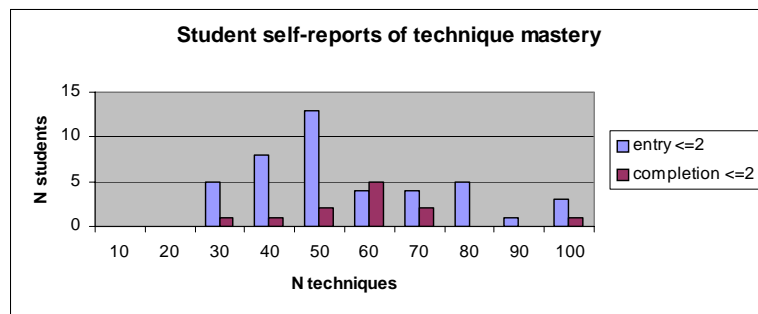


Figure 8. PhD students techniques self-reports of “satisfactory” or “excellent” at program entry (N=43) and completion (N=12)

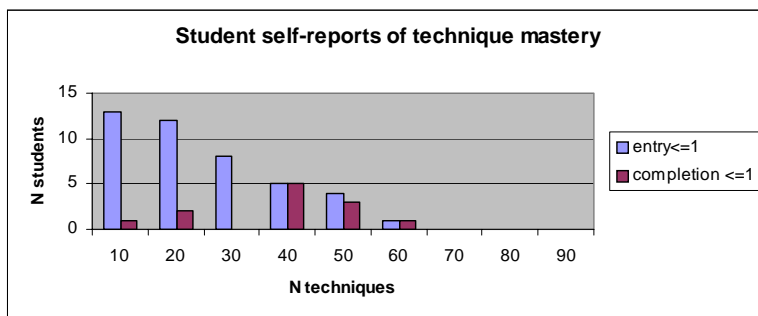


Figure 8. PhD students techniques self-reports of “excellent” at program entry (N=43) and completion (N=12)