

A Few Tips for Supervising Research

Consider the level and type of the research that is appropriate:

- At all levels, learning to communicate research ideas is essential.
- The research should provide an opportunity for adding to the scholarship of the discipline.
- The research should provide an opportunity for students to connect various areas.
- The research should provide an opportunity for the student to learn valuable skills.

Reflect on your own research experience:

- How positive was your experience as a student?
- Would like your relationships with your research students to be similar or different?
- How do you currently engage in research?
- How can you pass that experience on to your own research students?

Decide on a supervisory style that you are comfortable with:

- Will you be very structured in your relationships with students or will you be more free?
- How flexible can your style be to meet different students' needs and styles?
- Is it more appropriate for students to work alone or in teams?
- Keep in mind that supervisory roles are often numerous and can change as the research progresses.
- Consider the following roles and their fit with your supervisory style: director, facilitator, advisor, teacher, guide, critic, freedom giver, supporter, friend, manager, and examiner.

Make your expectations clear and explicit:

- Let your students know your schedule.
- Indicate what you expect to get out of meetings.
- Explain the expectations for the finished product.
- Encourage your students to be open and honest with you.
- Create, at minimum, a working relationship or else your students are unlikely to make progress and your time will not be well-spent.

Learn to identify common problems for research students:

- Poor planning and management of project
- Methodological difficulties in the research
- Problems writing up the project
- Isolation from the university or department community
- Personal problems outside the research
- Inadequate or negligent supervision

Avoid common criticisms of supervisors made by research students:

- Too few meetings with students
- No interest in students or topic
- Too little practical help given
- Too little direction
- Failure to return work promptly
- Absence from department
- Lack of research experience
- Lack of relevant skills and/or knowledge

Learn to identify warning indicators for students at risk:

- Postponing meetings
- Making excuses for unfinished work
- Focusing on the next stage of the project instead of the current task
- Frequently changing topics or methods
- Filling time with other projects or tasks not related to the research project
- Resisting advice or constructive criticism
- Procrastinating on writing
- Intellectualizing practical problems
- Blaming others for shortcomings
- Failing to integrate earlier work

Consider your role at supervisory meetings:

- Question your students regarding their work.
- Listen even beyond the information they give you.
- Push students to make decisions and set goals.
- Provide explanations for material or methods they do not understand.
- Provide feedback, and help plan and monitor the project.
- Keep written documentation about decisions and follow-up activities that stem from each meeting.
- Always be sure that the next meeting time has been determined.

Taken from Teaching Resources and Continuing Education at the University of Waterloo and adapted from:

Brown, G. & Atkins, M. (1988) *Effective Teaching in Higher Education*. Methuen & Company, London.

Delamont, S., Atkinson, P., & Parry, O. (1997) *Supervising the PhD*. Open University Press, Buckingham.

Gallian, Joseph A. & Higgins, Aparna W. (2000) Helping students present their research. *Proceedings of the Conference on Summer Undergraduate Mathematics Research Programs*. American Mathematical Society.

Graham, A & Grant, B. (1999) Naming the game: reconstructing graduate supervision. *Teaching in Higher Education*. 4(1):77-89.

Senechal, Lester J. (1990) Models for Undergraduate Research in Mathematics. MAA Notes.