

AC 2009-769: DAD AND LAD: ADVANTAGES, BEST PRACTICES, AND PITFALLS TO AVOID FOR A PARENT AND SON OR DAUGHTER WHO ARE BOTH FACULTY MEMBERS IN A SIMILAR DISCIPLINE (WITH APPLICATIONS TO MENTORING)

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Dad & Lad – Advantages, Best Practices, and Pitfalls to Avoid for a Parent and Son/Daughter Who Are Both Faculty Members in a Similar Discipline (with Applications to Mentoring)

Abstract

A father and son have been faculty members in the same discipline at separate universities for the past seven years. Some may view this as a detriment for a variety of reasons including pride, nepotism, and a potential lack of intellectual independence. On the contrary, the situation can and should lend to advantages including workplace efficiency, collaboration, and even a form of apprenticeship, simply because chances are good that communication styles, leadership methods, and interests are very similar between a parent and a son/daughter. In addition, these similarities could be used as criteria when forming a mentor relationship. This paper will elaborate on the various advantages available, pitfalls to avoid, and best practices while citing specific examples of the authors. Examples include sharing common notes and exams, project/research collaboration between universities, reinvigoration of old resources, committee and professional society involvement, guest lecturing, an ease and trust in communication on important issues to engineering programs (e.g., accreditation visits, curriculum changes, student affairs, course offerings, new initiatives), and more. These examples could also apply in a mentor relationship. In addition special note is made relating to the ease of communication and collaboration from a life-long experience of working together as a “team” (e.g., sports teams, Boy Scouts, etc.). Finally the authors note the “two-way street” advantage. For example, the son uses his father’s valuable insight and time-tested resources to aid in career advancement. In turn, the son’s fresh perspective and effort necessary for promotion aids the father in remaining active and current in the discipline. Again, the mentor relationship can prosper from the “two-way street” advantage.

1. Introduction

The authors of this paper are related as father and son. Philip (Phil) Gerhart is a Professor of Mechanical and Civil Engineering and the Dean of the College of Engineering and Computer Science at the University of Evansville (UE), IN. He is the father of Andrew (Andy) Gerhart, Associate Professor of Mechanical Engineering at Lawrence Technological University (LTU), Southfield, MI. They have been faculty members in the same discipline for the past seven years, but of course, at separate universities. Because of these interesting circumstances, this paper will elaborate on available advantages, possible pitfalls, and best practices by citing specific examples of the authors’ experiences. If you are reading this paper, you may well be thinking either: 1) This is a very unique situation, so I’m probably wasting my time, or 2) I am the father/mother/son/daughter of a professor, so I’m curious to see what this paper contains. Because of the uniqueness of the situation, most are probably thinking number one. If so, fear not! This paper can apply to a graduate advisor who now has one of his/her students serving at another (or perhaps the same) institution. Conversely, the paper can apply to a new faculty member who now has his graduate advisor as a mentor. Also, this paper will give some advice for any new faculty member who is seeking a mentor. Further the paper can help any experienced faculty member who may need to serve as a mentor. Finally, the authors hope that the paper is interesting to anybody that may not fall within the aforementioned categories.

For centuries, normal practice in Western civilization was for male children to enter the same profession or trade as their father. The process of “growing up” was in fact an apprenticeship wherein the son was trained to follow in the footsteps of the father. In the recent past (~ 100 years) this practice has fallen out of favor, especially in the USA; in fact, many modern professionals may view having a father/mother or son/daughter in the same profession as a deterrent for a variety of reasons including pride, nepotism, and lack of intellectual independence (“making one’s own way in the world”). In the authors’ experience, the situation can and should lead to advantages including workplace efficiency, useful collaboration, and even a form of modern-day apprenticeship, simply because chances are good that communication styles, leadership methods, and interests are very similar between a parent and a son/daughter. Note that similar criteria should be considered when forming any mentoring relationship.

Examples of beneficial interaction include sharing course notes and exams, project/research collaboration between universities, reinvigoration of old resources, committee and professional society involvement, guest lecturing, an ease and trust in communication on issues important to engineering programs (*e.g.*, accreditation visits, curriculum changes, student affairs, course offerings, new initiatives). All of these examples could apply between a mentor and “mentee.” In addition, a family relationship can enhance communication and collaboration based on life-long experience of working together as a “team” (*e.g.*, sports teams, Boy Scouts, etc.). The examples given can serve as a model for choosing the proper mentor or “mentee” based on similarity of backgrounds. Finally the authors note the “two-way street” advantage. For example, the son uses his father’s valuable insight and time-tested resources to aid in career advancement. In turn, the son’s fresh perspective and effort necessary for tenure and promotion aids the father in remaining active and current in the discipline, especially if the father has moved into an administrative role. Again, the mentor relationship can prosper from the “two-way street” advantage.

(Note: For lack of a better term, “child” will be used in this paper to indicate the son, daughter, former grad student, or mentee, even though the term “child” is typically reserved for pre-teens. The alternate term “off-spring”, suggested by MS Word Thesaurus, sounds too cold, inhuman, and impersonal. Likewise, the authors will refer to themselves by their first names, “Phil and Andy”. The reader is invited to insert any other relevant terms, such as “mentor” and “mentee”.)

2. Mentoring

Research has established “that appropriate mentoring and support can cut years off the professional learning curve.”^{1, 2, 3} This can be especially true for the new engineering educator whose formal training and experience is not in education at all, but instead has spent years learning the technical side of engineering. With a mentor, the new engineering educator will not only develop more quickly, but perhaps even more successfully than without a mentor. With this in mind, some institutions have established a formal mentoring program and/or process, wherein mentors are trained and a mentor assignment process is established. (Jackson et al. performed a study of 24 institutions with such programs,⁴ but discussion of their results is beyond the scope of this paper.) Unfortunately, as is often the case, the new engineering educator is left on his own to seek a mentor and establish a mentoring relationship. This paper will present advice for finding a mentor and establishing the relationship for success.

There are many types of mentoring: direct supervisor as mentor, mentoring done on a spontaneous basis as the need arises, informal group mentoring from an organized program (*e.g.*, workshops and presentations), peer mentoring, and mentoring from a senior faculty member who is not in an official supervisory role.⁵ Jordan et al. thoroughly review the different mentoring relationships and highly recommend the final mentoring method listed above (mentoring from a non-supervisor) mostly because of the honest and direct communication possible without fear of repercussions on yearly reviews. The material presented in this paper is this recommended type of mentoring, but the mentoring relationship here is “ramped-up” to an even higher level. The relationship between the mentor and mentee is a match on multiple levels – teaching, service, scholarship, and even personality traits. As noted by Jackson et al., the mentor and new faculty member should find each other because of the benefit accruing from personal similarities.⁴ Further they note:

For mentoring to be successful, there must be a common ground to form the basis of a successful long-term professional relationship. This may be research interests, previous school affiliations, recreational activities, geographic background, travel interests, and/or social activities. The key factor is that the mentor must have a strong desire to see this person succeed. The challenge is to find this common ground that will make the process a success. The mentor in this case needs to be a faculty member who has been through the process and preferably has served on the promotion and tenure committee.

With some careful observation and a little luck, the new engineering educator or potential mentor can find such a relationship, and the rewards are many as will be described in section 3. Also while many papers covering the topic of mentoring for the engineering educator exist, most (all?) are very general and lack many specific successful examples and details. This paper will attempt to fill some of that void.

3. Potential detriments and initial pitfalls

Upon discovering that Andy’s father served as his undergraduate advisor and professor for many courses, and that Andy and Phil are now in the same profession, many of Andy’s friends and colleagues first thoughts are either “Wow, that must have been tough” or “That stinks.” Quite the opposite is actually true, but because of this common first impression, potential detriments and pitfalls will be addressed first, before discussing advantages and best practices.

First, the rather obvious topics of nepotism and favoritism must be addressed. This pitfall can easily rear its ugly head for a parent. There is even the possibility that this will occur for a mentor or the former graduate advisor of a new faculty member, but in this case it would be referred to as favoritism, bias, or preferential treatment⁶. For the parent (or former advisor or mentor), it is often difficult to find the proper perspective on one’s actions toward a loved one. It can easily appear to the parent that the child is being treated no differently than anyone else. In fact, it may be nearly impossible to treat the child differently. The best advice is for the parent to have a trusted, forthright, and objective colleague compare the parent’s actions toward the child and other young colleagues. Ask often for feedback. Usually the advice will be to remove yourself from any situation where an award or accolade will be administered. For the child (or former grad student), the advice is the same; find a trusted, forthright, objective colleague to

monitor the parent's actions toward the child. The child must not allow an award or accolade to come from a parent.

Next, there is a potential for pride to rear its ugly head. Of course it is natural and healthy for one to be proud of the success of his child/mentee or parent/mentor. To keep things in perspective, the parent/mentor should keep in mind that many other persons and influences contributed to making the child/mentee into the successful person that they have become. Similarly, the child/mentee should be aware that the parent/mentor has his own unique set of shortcomings which the "younger" person may help them to mitigate.

Finally, a potential lack of intellectual independence can arise – typically for the child but sometimes for the parent. In the case of the child, it is too easy to rely heavily on the parent for anything from engineering theory to instructions for advancement in one's career. There might be a tendency for the child to simply imitate whatever the parent does. This must be carefully monitored; for example, just because the father is the faculty advisor of SAE, does not mean that the child has to be. Of course, if the child truly enjoys that activity, then there is no reason to avoid it, but always think it through before committing. Answer the question, "Is this what I want to do, or am I doing it because it is easy to 'follow the leader' or because my dad would want me to?" Another example: If the child and the parent teach the same course, it is unlikely that the course will be identical, and in fact it should not be. The child must use his own style and methods. The same applies to the parent; being a senior faculty member, unfortunately, sometimes means that he is burnt-out or "teaching from the same old yellowed notes". Do not just copy and repeat what your child is doing, but use it to freshen your work.

Unfortunately, a colleague's perception of a lack of intellectual independence can be tough to overcome. Be your own person and think for yourself. Use the advantages stated in this paper, but do not become the parent (if you are the child) or child (if you are the parent). That in a nutshell is the best you can do. Also, show enthusiasm for your endeavors if they happen to match closely between parent/child (and your endeavors will often match since you are similar people). Your enthusiasm will show colleagues that you are acting of your own accord and not just because you are following someone else's footsteps. If colleagues still perceive a lack of intellectual independence, continue to prove otherwise, and that is the best you can do. (Hey, we never claimed that we had the cure-all for everything!)

4. Advantages

Some general advantages will be presented here, but some concrete examples from the authors' experience will also be cited with the hope that this will spur more ideas for you. Before presenting the advantages, a bit more background on the authors and their relationship is necessary. First, both Phil and Andy are mechanical engineering faculty with a main area of interest in thermal/fluids. We both very much enjoy teaching and working in thermodynamics, fluid mechanics, heat transfer, and power generation within this discipline. The specific courses that we have taught in common are thermodynamics, fluid mechanics, thermal fluids laboratory, viscous flow, and turbulence. Outside of academics, we both enjoy being adult leaders in the Boy Scouts of America and have each served as Scoutmaster. We enjoy history; specifically, our interests overlap in American history and the history of science and engineering (*e.g.*,

biographies of Isaac Newton or Daniel Bernoulli). We enjoy baseball (although Phil is a Yankees fan while Andy is an Indians fan!) and Indy Car® racing. We have similar political leanings. We are both active in our churches. Of course we do have our differences. For example, Andy has never gotten into the topic of turbomachinery to the substantial extent that Phil has. Andy is more experimentally-oriented and Phil is more of an analyst/theoretician. Phil has never played musical instruments while Andy plays many.

Because of the similarities, there is a bond beyond the fact that we are father and son. We can communicate easily, often using a “shorthand” or “code” based on our common experiences. We can speak freely without fear of offending each other and without the fear that confidential information will be revealed. Therefore, if you happen to be a new engineering educator looking for a mentor, consider finding someone in your institution who has as many similar interests and personality similarities as you do – and vice versa for mentors.

Perhaps the most significant advantages for the parent/child are workplace efficiency and professional collaboration, which often overlap. The new engineering educator has likely never taught a course before nor put together the requisite lecture notes, exams, and homework assignments. The first time Andy taught a new course that Phil had previously taught (for the record, it was Thermodynamics), Phil graciously loaned Andy binders full of lecture notes, old exams, class project ideas, and homework assignments (wow – ready-made “yellowed class notes”!). When creating lecture notes, Andy was able to have in front of him time-tested notes from his father, his own notes from when he was a student, and the course textbook. Most professors have to refine their notes extensively between a first and second offering of a course once they have figured out what works and what does not work. With all of the material available to Andy, his notes turned out to be a great success on his first try. He has had to do very little editing since creating the notes, and his student course reviews began and remain at a high level. Keep in mind, with multiple sources to develop notes, it will take some extra time up-front, but that is time saved later and without the trouble of encumbering the students with stuff that doesn’t work.

Much time can be spent creating exams, especially for the new faculty member, so use exams from your parent/mentor. It is typically not a great idea to reuse old exams because of the potential that the exam questions are in open circulation. When the exam problems are 15 to 30 years old and from a university 485 miles away, the potential that questions and problems are available to students most likely disappears. Don’t forget that the parent’s exam problems also make great practice exams for students or in-class examples while requiring little effort to prepare. (This eventually works both ways.)

Sharing of notes, exams, projects, and assignments is not only a benefit to the new engineering educator. The parent/mentor will also get frank and honest feedback on these items from the child/mentee that he may not otherwise receive from the students. Be sure to tell each other what worked and what did not work.

Next, Phil and Andy have been able to collaborate on research, academic papers, and new initiatives in a unique way. This is another situation that can be applied between a former graduate student and his graduate advisor. Of course faculty from different universities

frequently collaborate on research and academic papers. The examples we present are different than the usual case. As a first example, Phil's university allocates three credit hours for the Fluid Mechanics course, while Andy's university allocates four credit hours. The opposite situation occurs in Thermodynamics. Since Phil and Andy share similar notes and teaching styles, they were able to conduct a study to examine the effects of covering the same material within different time frames.⁷ They distributed identical surveys to their students and even compared scores when they administered the same exam problems.

Another example: A few years ago, Andy purchased a new-to-the-market thermodynamics student laboratory experiment and incorporated it into the LTU curriculum. Phil soon purchased the same unit and incorporated it into the UE curriculum. They both noted that the unit had not been comprehensively analyzed either from a technical or a pedagogical perspective. Assessment, detailed mathematical modeling, and student surveys were conducted at both universities for comparisons. Consequently, the equipment has been assessed without a bias arising due to analysis from a single institution and demographic student base. The partnership also allowed for a strong collaboration with the company that produces the equipment. Three papers were published that (we trust) have been beneficial to the users of the equipment and the company that produces it.^{8, 9, 10}

Yet another example beyond paper writing: Phil's university (UE) owns and operates a college in England – Harlaxton College. UE engineering students can study in England for a semester, take courses that apply to their degrees, and travel throughout Europe on the extended weekends. UE has established partnerships with other schools which send students and visiting faculty to Harlaxton. Andy was able to effectively communicate to LTU administrators the benefits of becoming a partner institution, and consequently, LTU students can now take part in this wonderful study abroad opportunity.

In a similar example of collaboration, one of Andy's colleagues at LTU (we'll call him "Floyd") became acquainted with Phil and UE. When Floyd's son was preparing to go to college, it turned out that LTU did not offer the degree options (and some campus life experiences) that he was considering, which was unfortunate since LTU offers tuition reimbursement for employees' dependents. UE did offer the degree desired by Floyd's son, and Floyd's son really wanted to go to UE, because of what he had learned about the school. As a result Floyd was motivated to find out about a tuition exchange program but, at the time, LTU was not a participant. As a result, LTU entered the tuition exchange program and Floyd's son now attends UE, is studying Creative Writing, and has spent a semester at Harlaxton (where Floyd and his wife got to visit him for a week!). So the benefit of the collaboration was many-fold; UE gained a student (and more in the future), LTU joined the tuition exchange program and became eligible to attract UE dependents as future students, and LTU employees now have added benefit for their dependents.

Phil and Andy have been able to discuss textbook options for use in their classes. In a poignant example, Phil tried a new textbook that did not work well for either the instructor or the students. Andy was able to avoid this book and so not submit his students to the same trauma. Without the ability to speak frankly and honestly about the consequences, this could not occur. Lacking a family or close mentoring relationship, there might be a possibility of making inadvertently

offensive comments about a textbook to the other person who may have contributed to the book or has a relationship with the authors.

One of the joys of a close relationship between faculty members in the same discipline is the (seemingly endless) discussion and comparison of the inner workings of academic departments, colleges, and even entire institutions. Items discussed between Phil and Andy include accreditation and the latest ABET reviews (especially useful to Andy since Phil is an ABET evaluator), student affairs, enrollment, curriculum (what changes are being made and how they are faring), new initiatives (leadership programs, entrepreneurial programs), competition project teams (Formula SAE, Aero Design, etc.), hiring practices, tenure and promotion practices, and even pay scales. Because of the close relationship, these items can be discussed openly. Accurate, trustworthy information on successes (and failures) of the “other” institution can be relayed to university administrators, where the information can help formulate action plans. Of course this should only occur when the two institutions are not strong competitors for the same student population or other resources.

Because of the similar interests and background of a parent and child (or a properly matched mentor and mentee), it is beneficial to become involved with similar professional societies and committees. Phil has dedicated many years to the American Society of Mechanical Engineers (ASME) Performance Test Codes (PTC) activity. Consequently, Phil encouraged Andy to volunteer for an ASME PTC committee. The committee work turned out to be a worthwhile and rewarding experience for Andy, the new engineering educator. He was able to collaborate with industry professionals, contribute to an ASME publication, bring his experiences back to the classroom, and travel to various committee meeting locations, often at interesting industrial sites. Through collaboration with the ASME staff, Phil and Andy were able to incorporate various Performance Test Code documents into course projects and assignments, something normally difficult to do (from an expense and copyright standpoint). This ultimately led to a paper documenting ways to use ASME PTC documents for the benefit of the students.¹¹

The young engineering educator might consider collaboration with a close mentor on writing all or part of a textbook (including end-of-chapter problems), or web content supporting a textbook. Phil and Andy approached the preparation of problems and web-based content under contract to a publisher by splitting the writing and reviewing responsibilities. For example, Phil wrote problems for chapter 3 and Andy reviewed them. Andy wrote chapter 4 problems, and Phil reviewed them. They found that reviewing each other’s work is much easier and more efficient than when collaborating with other colleagues. There are several reasons for this: it is easier to reach each other by phone (office, cell, or home!); and there is no fear of offending each other. When two people think alike, they can interpret and review each other’s work with ease and appropriateness, so there exists “the knack” for understanding what the other person meant, and consequently rephrasing the problem appropriately.

Ease of review and understanding is also an advantage of writing papers together (such as this one); Andy was certain that the first draft of this paper would be improved by review by father Phil. Phil indeed knows what Andy meant to say and can often phrase it more appropriately with a fresh pair of eyes. Use this advantage cautiously; since Phil and Andy think alike, they can

sometimes phrase a statement or textbook problem that no one else will understand. When in doubt, get a third-party review.

Even if they are not formally collaborating on a project or publication, they will often review each other's work. Technical and pedagogical papers can be reviewed before they are sent for formal peer review. This can save embarrassment and possible paper rejection. When creating a new course syllabus, send it to your parent/child/mentor/mentee for review. Do the same for a newly developed exam problem or project assignment that you may have doubts about (Is it too easy; too hard; impossible?).

Here are a few additional ideas and examples: Attend conferences together and share a hotel room. You will get a chance to spend time together and save money for each university. Maybe even take the rest of the family for a visit. Serve as co-moderators for conference sessions. It relieves the burden of moderating alone, and the presenters and audience find it quaint, if not amusing. An amused audience will often be more engaged.

One other advantage is worth mentioning here; a technical problem/issue may arise that you feel you should know the answer, but are drawing a blank. Usually, you can call a parent (or child) to ask a technical question without the fear of embarrassment. This tactic also comes in handy when advising a student who has a non-subject-related question to which you have no answer (*e.g.*, the student may have a project team member that is not contributing and is seeking your advice in handling the situation; or maybe even a personal problem). Your parent will likely have encountered a similar situation in the past, and will offer some good advice – or the child will better understand the generational issue involved.

Here is a fun advantage. Phil has a Fall Break at UE; LTU does not have a Fall Break. In addition, the UE Spring Break and LTU Spring Break have not fallen during the same week over the past seven years. Therefore, each fall and spring, Phil visits Andy (and his family) at LTU. Phil drops-in on Andy's Fluid Mechanics or Viscous Flow course. The students are wondering why there is an "official-looking" person in the room. Is our professor being evaluated? Halfway through the lecture, they will announce the relationship, and Phil will take over the lecture. The students get a good laugh, a break from the normal routine, a slightly different perspective on the material, and perhaps most importantly, a memorable experience. Andy has found that the students retain that particular material especially well. And of course it is fun for Andy and Phil to rib each other during their lectures.

Many, if not most, of the advantages and ideas presented in this paper are a "two-way street". For example, the son uses his father's valuable insight and time-tested resources to aid in career advancement. It is a form of apprenticeship. In turn, the son's fresh perspective and efforts necessary for promotion aids the father in remaining active and current in the discipline. This is rejuvenation. For example, the father adds input and co-authorship to papers to stay current in publishing. In addition, the son helps to alleviate burn-out or loss of interest. Also, the son is closer in age to the current crop of students, so the father see first-hand the latest methods and best-practices that are effective with the current generation of students.

Finally, do not overlook any career enhancement that can be gained because of the experiences and resources of your parent/child. Watch for committees to join or avoid, based on either your mentor's/mentee's previous experience or the people that he knows from those committees. Use the wider range of contacts to investigate career opportunities. Before applying to job openings, use your mentor's/mentee's personal connections to discover if the job would or would not be a good fit for you. But use caution not to accept a position because of these personal connections. Attain any position based on your merits and not as a favor.

5. Conclusion

In conclusion, a father and son that are faculty members in the same discipline but at separate universities shared their experiences and insight so that they can be applied to a mentor relationship. Examples of their professional and personality similarities were presented to serve as a model for identifying a beneficial mentor/mentee. If you are a parent, mentor, or former graduate advisor, you can use the ideas presented here to reinvigorate your work. You will benefit and so will your students. If you are a child of a professor, a mentee, or a former graduate student, you can use the ideas to save time/effort, become a better educator, and thrive in your career.

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