Preface

Written primarily to you, the coach or prospective coach, this overview provides general guidelines to the approach we have adopted to coaching students who take project-based courses. As the coaching needs for particular courses may vary, specific guidelines should be followed. Graduate mechanical engineering courses (e.g., ME310), undergraduate courses (e.g., ME113) and multidisciplinary design courses (e.g., ME325/CS447) represent varying approaches to coaching. For instance, since Undergraduate Mechanical Engineering Design (ME113) student teams and their projects are monitored weekly only by their coaches, unlike in other courses, the coaches of assume some functions of the teaching team.

Although the language of this overview addresses the coaches, it will be informative for students and instructors as well. Students will learn how to best use their coach and members of teaching teams how to work with the coaches.

1 This overview is based on over 5-year experience, coaching over 20 ME310 and ME113 teams, instructing and coaching ME325/CS447 and observing ME206/OIT333 and on conversations with other coaches and teaching teams’ members.

2 I am thankful for the comments and suggestions that I received from Larry Leifer, Professor (ME310 and other courses), CDR Founding Director; Professor George Kembel, Executive Director of Stanford Institute for Design and of the Product Design Program; Machiel Van der Loos (see below); Becky Currano ME310 alumnus and coach and Graduate Research Assistant at CDR; and Georg Ullmann, Visiting Researcher studying coaching, CDR;

3 Machiel Van der Loos, studying coaching at CDR, VA Hospital, Palo Alto, ME310 coach in charge of global-team coaching.
Introduction

To be a coach you need to establish informal relationships between you and the individual students you coach and their team as a whole. Yet, this informality must be anchored within the formal teaching framework of the course. You have a formal role in helping the teaching team (T-team), in guiding the students, to whom you are assigned, individually and collectively as a team. The T-team will give the students a sound technical framework, explicitly or implicitly, and your value to both teams will often be as a bridging-partner between them.

So, what is a coach? What is expected from you? How can you best serve the students?

Coaching or mentoring as it is also known, has been recognized to be a valuable teaching tool. At Stanford, especially in the Mechanical Engineering Department’s project-based courses, coaching has been an important integral component of instruction for many years. Not to be confused with or modeled after sport coaching, academic coaches do not have the authority that athletics or football coaches do.

Being a coach you are neither a member of the T-team nor a formal member of the student team you are coaching. Somewhere in between — in some cases the students may accept you as an adjunct member of their team — you should make the students comfortable to confide in you with any issue they are not ready to discuss with the T-team. At the same time you need to be familiar with the thinking of the T-team, how the faculty plans and runs the course, their expectations and how you can best assist it.

The fact that you have real-world engineering and design experience, for example as a professional from industry, is the reason the course faculty invited you to participate in educating future generations of professionals. To be effective you must be enthusiastic about imparting your knowledge to the students. We advise the students that, in some respect, they can view their team as a startup company. By this analogy you are the startup’s advisory committee. But, as you will see, your role is not limited to advising the students in the fields of your expertise. The students need you to share with them the intangible knowledge, like teamwork, work ethic and researching information in fields with which you are not familiar, that you have gathered through years of work and the many professional relationships you have formed.

There are no specific rules for assigning you to a team. The professor may match you to a project, based on your skill set or simple constraints, such as the time you are available to meet with the students may dictate which team you work with. In some graduate courses the student teams select their coaches while for undergraduate courses the T-team makes the assignments.

What Sort of a Coach

The ideal coach is the understanding and patient coach. The most important assets you bring to the team are your expertise in specific fields and your experience working with others, both within teams and on your own. Often the team initially focuses narrowly on your technical know-how, asking questions regarding specific issues that concern them or they may wish to explore your broad understanding of your particular field or industry. No one expects you to have all the answers, even within your own field, let alone in others. Actually not being able to answer a question is just as valuable as the answer, perhaps more so. For this is an excellent opportunity to share your research experience where and how to look for the information they are after. Students “own” the answers they discover, they then have deeper understanding and make better use of their knowledge.

For this reason, often, as time permits, it is important that you do not give the answers outright. At times, you should hold back your excitement to share your knowledge and even refrain from posing the questions. To best serve the students you need to let them explore and discover on their own. You are available to them to support and guide, not to solve and design.

Balancing these contrasting needs, between informality and formality, sharing your knowledge and holding your tongue, is what will make you a successful coach.
Failures Are Excellent Learning Opportunities

After seeking your knowledge and opinion, just as they do from the T-team and expert consultants, the students will proceed their own way, at times without accepting your suggestions. When this happens you need to keep in mind that all of us like, indeed need, to learn from our own mistakes before having a sense of ownership of what we learn. The course setting provides a safe environment for erring and failing. These courses may be the last opportunity the students have to be professionally adventurous. Teaching these courses often encourages the students to take risks and adopt the least conventional — some call it “dark horse” — solutions. We subscribe to the view held by IDEO designers when they say: “fail often to succeed sooner.” Moreover, failure to accomplish a task for the project is by no means a failure to learn. For the project itself is a learning vehicle; it teaches the design process regardless of success. When students opt for a “safe” solution, they may produce a solution for the project, but can short-change their own education. In short, we, teachers, students and coaches, must always keep in mind that failure is an important component of the learning process and is essential to successful design.

In short, do not take rejections of your educated opinion personally, and do not be offended by actions that counter your advice. You should have no “ego” invested in the advice you offer. Students and teams are free to accept or reject any portion or the whole of their views, recommendations and comments. They should not fear they may hurt your feelings or risk your support. In other words, once you provide information, express your view, make a suggestion or speak your mind, step aside and let the students make their decision on their own and then proceed with implementing their choices. Be there, available to take part in follow-up discussions and help revising the course of action. Whatever they decide and however they proceed, a future reflection on how they made their decisions and what led them along the chosen path will provide valuable insight and improve their design-process skills.

The Coaching Context

Figure 1. The Coaching Context

From “Interdisciplinary Design Innovation”, a presentation to the Design and Manufacturing Forum (ME 396), Spring 2004. Based on research by Larry Leifer and his team at the Stanford Center for Design Research (CDR)
Coaching is a specific pedagogic educational layer in interdisciplinary project-based courses. In these courses the students learn by putting into practice the knowledge they have acquired thus far, not by receiving information from a lecturing professor. The projects for most of these design courses at Stanford originate from within industry; corporate clients pay university departments to place teams of students on the projects they propose. In other cases, government or other interested organizations originate the projects. The sponsors want fresh minds, uninhibited by corporate culture and constraints, to explore the issues that concern them; they do not need the students to duplicate the work their own engineers and technical staff perform regularly. What they do want is for the students to explore areas that their own people do not.

The course and its T-team are not about teaching how to solve a specific problem. They are about teaching a process that can be used for solving any design problem. It is possible for the students to be more knowledgeable about the issue at hand than the faculty of the course. But this is not how their learning is assessed, nor is it what their grading is based on.

**Multidisciplinary Learning**

Since every design project requires work in multiple fields, professionals like yourself, from various industries, having experience in various areas, coach the students. The diagram below illustrates the schematic organization of the various disciplines. You can see that your expertise may fall within some of these domains or the intersection thereof.

![Multidisciplinary Design Diagram](image)

**You Are Not a Member of the T-team...**

The most important implication of this point is that you have no role in grading any of the students’ or the team’s work. In some courses, at the discretion of the T-team, peer review may be a component of the grading process. Sometimes, during team presentations, audience members are asked to fill-in what appear as grading sheets. As far as you, the coach, are concerned, this is an informal assessment or evaluation. If you are concerned that you may influence the grading, you may avoid entering a grade, especially when assessing your own team(s), or deliver your evaluation directly to the team. Since often placing your name on these sheets is optional, be aware that if you do not do so, the T-team may not be aware a specific evaluation is from you, so your feedback could influence your team’s grade.
In some undergraduate courses (ME113, for instance) the coach is the dominant teacher. For most of the duration of the course, the students have little individual contact with any member of the T-team as such. In fact, for this reason, both the professor and the course assistance serve as coaches. During the final presentation, especially if given in the format of a trade show, the coaches join the members of the T-team in evaluating the work results of every team. If you coach such a course and face such a situation, it is strongly recommended that you avoid any action that influences the grading of any of the teams you coach. Instead, give your teams your feedback directly. A similar course of action is recommended if you are asked to review any of the reports or other documents the students write.

...You Are Sort of a Team Member

In some respects the student team can consider you as a non-voting team member. We often recommend to the teams to include you in the team’s e-mail mailing list. Although you may be flooded with messages of secondary importance, such as “who’s up for pizza?”, the lack of such social exchanges may alert you to a social problem that may be brewing under the surface. The value of regularly reading the team’s e-mail is being up-to-date on where they are at and where they are going with respect to all of the issues that concern them. You may notice, for example, that while they pay a lot of attention to all the technical aspects, no scheduling has been done. Other examples include workload is not being evenly distributed between the students, one student overwhelming the rest of the team, one is being ignored by the teammates, or the team having yet to address a human-factors concern.

You are the second line of the team’s defense. (The students themselves are at the forefront.) If you notice that your team is on the wrong track, you should do your best to alert its members to any potential problem, and how you propose they address it, but remain within your informal advisory role.

Areas for Your Attention

![Coaching Areas](image)

**Coaching**
- Professional Coaching
- Cultural Coaching
- Team-Relations Coaching

**Figure 3. Coaching Areas**
Being a coach, you serve the team in any single function or any combination thereof.

**Professional Coaching**

In the broad sense, technical coaching covers all aspects of design:
- Technical
- Human factors
- Business

Topics in these categories are first on the minds of the students, for they are excited to tackle their task, design a solution and fabricate a prototype that will demonstrate their vision. You know that paying attention to the details is
what will make or break a successful project. Yet, keep in mind that it is not your job to solve problems for the students.

If you do have professional expertise and your team indeed seeks it, be sure to let them know that, at such time, you may change your role from a coach to an expert consultant.

**Be an Advocate**

You may need to voice underrepresented concerns and issues, to be an advocate of specific constituencies. For instance, when the team discusses some possible solutions, you may raise the viewpoint of a specific segment among target users that the team has neglected to consider. On other occasions you may point out manufacturability considerations. For example, during the development of water collection, storage and distribution products for use by third-world farmers, whose annual income is under $300, the distributors and support agents live with the farmers in the same villages. But their needs and their economic motivations differ from those of the farmers’. The coaches of these projects made sure that these groups were not overlooked and their needs were taken into account just as the farmers’ needs were.

Similarly you may need to advocate the financier, who will finance the product, the manufacturer who will produce it, the educator who will teach the end-user about the product, the maintenance shop owner who will maintain it, and so forth.

**Cultural Coaching**

Outside the realm of technical considerations the students will work with a client, the sponsor of their project, and will have to study intangible aspects concerning the client and the target users of the product.

- **Organizational culture**
  - Corporate vs. Government vs. Non-profit Organizations;
  - Startup vs. large and well-established corporation;

- **Social**
  - North America vs. Europe vs. Asia vs. South America;
  - Developed vs. developing societies
  - Secular vs. religious
  - Sexual equity vs. male dominated (due to other cultures, traditions, religions)

Social coaching is about making sure that the observation phase of the team’s research, needfinding, pays the necessary attention to social considerations that may not be immediately apparent during the research at-hand. For example, during some disaster relief efforts in the 1980s and 1990s, American relief workers distributed peanut butter for obvious nutritional reasons. Yet this effort failed because the people who received peanut butter had no idea what it was and how to use it — that you eat it — not to mention that they had no bread with which to eat it.

As is the case for technical issues, if the project requires cultural and social considerations, the students should seek experts and other people who are steeped in the culture. When no such person is available, you should assume the responsibility to be an advocate for the target culture.
Team-Relations Coaching

Team-Dynamics. We often advise student teams that, in some respects, each team is like a startup business. Considering themselves as such, they should clearly assign duties and responsibility to each member and assume their roles as if it was the case. The students you are coaching may have little experience operating under such intense conditions, delegating tasks, sharing decision-making and accepting the opinions of others. Friction among teammates is not uncommon. This is when you can step in and assist the students sort out the problems, identify the specifics and work out solutions.

As part of their learning experience, it is best if the students resolve team-dynamic issues on their own. Students recognize that bringing such a problem to the attention of the T-team escalates its severity and therefore hesitate to do so.

This is when, being an informal member of the team, you have an excellent opportunity to guide the team toward resolution. In fact, you may be the first person to recognize a developing personality conflict or team-dynamic concern. You may be able to steer the team away from potential trouble, and if one occurs, help the team to defuse it before it gets out of control.

Team Relations with the T-team. Sometimes you will find yourself between the T-team and the students. The student may approach you with questions ranging from teaching expectations to the mechanics of the course. On rare occasions the students may seek your advice with respect to their dealing with the faculty and, even rarer, request your assistance in resolving a conflict they may have with some member of the teaching team. As in all other situations, your first role is to help the students develop the tools, experience and confidence in their ability to resolving such complications on their own. Direct intervention is a last resort.

Team Relations with the project’s sponsor. As in dealing with their instructors, the students may need your counseling and wisdom in dealing with their client. Again, guide them and let them form their own strategy for dealing with the client. When things get rough, if they have yet to do so, the students should bring the T-team into the picture and get their advice.

Your Role, Should You Choose to Accept It…

As a coach you need to maintain a broad and independent perspective over the project and, most of all, over the team’s needs, to consider all aspects that influence its progress and enable the students to achieve their learning goals.

- Be a consultant, a patient consultant. If you are an expert in some technical field, answer your students’ questions carefully when they ask them, rather than offering information. You may see answers and may be tempted to offer them before the students have realized what the questions are. We strongly urge you to be patient. One needs to own her or his knowledge. To achieve this and to own the answers, students also need to first discover the questions on their own. Then they may be able to develop the answers based on what they already know. Or, they may request information on specific subjects. As much as it may be tempting to tell them all you know about the topic, by doing so, you may be short-circuiting the learning process and thereby shortchanging the students.

Remember the ah-ha moments in your career, when you felt like shouting “Eureka”? These moments infuse excitement into learning, and keep us wanting to learn more; these are the most powerful motivators for working longer hours, trying harder, doing our best. We should not deprive students of these experiences just because of our own excitement to impart the knowledge we cannot wait to share.

- Be a tutor. If asked, feel free to conduct a “just in time” tutorial for your team and students from other teams, covering some areas within your expertise. These may be teaching about using specific actuators, how to use a specific software product for data collection, conducting a field survey, delivering a presentation, interviewing a sample of potential users, and so forth.
• **Be a resource.** No one expects you to have the answers to all questions. In fact, the subject matter the students raise may be completely new to you, too. But you know how to go about finding information and turning raw data into working knowledge. This is where the students should be able to depend on you.

• **Be a motivator.** Working on their projects, especially on those that span longer than a single quarter, the students experience high- and low-intensity cycles. At times some students may lose interest in their project or be overwhelmed by accumulated responsibilities, including demands from other courses and their personal lives. This is the time for you to rally the troops. You may suggest an impromptu coaching meeting at a local eatery to refocus the team and infuse excitement or adopt some other measures as you see fit.

• **Be a counselor.** As is the case in companies, government, and other organizations, teams are formed ad hoc, to address the needs of specific tasks. In the real world, management may not be aware, choose to ignore or may not be able to address organizational concerns with respect to the composition of the team. The bottom line is that often teams do not have the ideal composition. You have likely seen this happen and have learned to deal with personnel problems. Your job is to counsel your students about team dynamics, teamwork and the relationships between the teammates.

The students should feel free to approach you with concerns, even express grievances regarding teammates, before they raise such an issue with the T-team.

• **Be a liaison between the team and the teaching team.** It is a delicate situation when students seek intermediary assistance dealing with the teaching team. You must make sure your students, individually and together as a team, feel comfortable to confide in you. In many cases, you may see the roots of the problem. Just as with technical coaching, the best you can do for the students is, having this knowledge, guide them to approach the instructors or their assistants, get the answers and resolve the issue by themselves. These circumstances often call for diplomacy and acting behind the scenes.

You never discipline any student you work with. If discipline is ever an issue, it is reserved for the T-team.

• **Be an intermediary between the team and the sponsor’s designated project liaison.** On the client side, the project often originates with one person or within a team. This person is usually the sponsor of the project and most likely is the liaison. But at times, for various reasons, another person — usually another employee but it may turn out to be a consultant — is assigned to serve as the liaison. The sponsor represents the client’s needs, views and wishes, and takes care of the team’s needs. The liaison should be on top of the team’s progress, be responsive in a timely fashion, be proactive in resolving issues, and provide information and technical assistance as the team requests them. However, due to changing circumstances, the liaison may not always be able to serve the student team needs within the course timetable.

The student team is responsible for maintaining the primary relationship with the corporate liaison(s) or sponsor(s). Anyone else who may interact with the corporate sponsor is secondary to that relationship.

It is important for the students to keep in mind that they are the first clients of the course. The project is merely a teaching tool. As previously stated, failure to provide a solution to the client of the project is rarely a failure in the course. We know that, no matter how much we emphasize this point, the students inevitably put too much emphasis on pleasing their sponsor and strive to accomplish a successful solution for the project. The result may, therefore, meet the primary goal of the class, which is to teach the design process. Further, opting for the safe rather than the daring approach, the team may not satisfy the sponsor’s pursuit of fresh and innovative solutions.

Clients may also be unresponsive or uncooperative due to various reasons (shifting responsibilities within their own organization, being away, losing interest, etc.) As a coach, you should first advise the students how to address such real-world situations on their own. Only when they are unable to produce the desired outcome within the time frame available to them, you may opt to intervene on their behalf or advise the students to seek the professor’s advice and assistance.

As a common practice, you do not need to attend the team meetings with the sponsor unless the team requests you to attend.
• **Client liaison presence in coaching meetings.** For various reasons, it is not common for the sponsor to attend coaching meetings. They are the team’s working meetings. Progress reports to the client or meeting to discuss issues that concern the client should be scheduled separately. Unless the team so requests, they should deal with the client without the coach’s intervention. By the same token, internal-working discussions often do not concern the client. This situation is as if the client has hired a consulting firm (the student team); the firm’s internal meetings are not open to the client. If the team is doing well, it may wish to reserve announcing its success in a dazzling presentation to the client later. And when the team faces a problem, it should work to resolve it internally first. Either way, inviting the client to the coaching meeting should be considered with care. Also, the team needs to have a forum where members can voice their concerns regarding the client.

If the team does invite the client’s liaison to a coaching meeting, all should all should be reminded that during this occasion it is not appropriate to vent any negative thoughts about the client or raise other issues that do not concern the client.

In fact, having the liaison present is likely to turn a coaching meeting into a client meeting.

• **Coach presence in client meetings.** If the team has concerns that the client has failed to address to their satisfaction, they may invite you, usually with the client liaison’s approval, to their meeting.

• **Multiple coaches.** To avoid overwhelming the students with opinions, each team is assigned a single coach. However, they may seek the input of others, and depending on their needs or the relationships they may develop with other professionals, the team may have more than one coach.

### A Word About d.School Courses

In the d.School courses are grouped by target end-users among several tracks, a.k.a. studios. This distinction suggests that the d.School does place significant value on the final prototypes. To a certain extent this is true. However, the main mission of the d.School is the teaching of design thinking, not specific engineering skills. Therefore you need to adjust your perspective regarding coaching accordingly. For instance, in some cases engaging the team in a technical discussion is the right opportunity to stimulate their thinking and exploration of design issues.

d.School courses are still “work in progress”. In a sense current courses are prototypes of what they will be once the institute opens formally and perhaps even beyond.

### Coaching Multi-site and Global Teams

**Machiel Van der Loos**

In some cases, a project may be charged to a multi-site team. Often such teams are located in different countries having language and cultural barriers that must be overcome.

These teams must address and resolve some important issues before they can even start collaborating on their assigned project. Communication between the remote sub-teams must be established. Due to time zone, language differences, communication means and channels, at times, semi-formal protocols, have to be established. Often the sub-teams visit each other but, due to time and budgetary constraints, these visits rarely take place at the optimal timing, often right after the teams are formed. Personal visits are essential to create a “global-team spirit”, just as the social spirit of the local teams is created early on.

So, if you coach an international-project team and you have experience in such matters, you have an important role in helping the team bridging the geographic, temporal, cultural and communication media gaps.
The Educational Environment. In some cases you are transplanted from one site to the other for the duration of the project. As a culture coach, you have instant credibility locally by representing the other culture and back home by physically being at the other site. Your role will involve representing some combination of another language, societal culture, university spirit, design philosophy, climate, geography, time zone, etc., that the partner team may see as an obstacle to cohesion. “Culture” does not just refer to the country or society of the partner site — although this is an important factor in many cases — but more crucially the culture of the design course itself. Only you know how the department is put together, the quirks of the T-team back home, how easy or hard it is to get help from other departments, whom to call in which situations, and how to manage the local logistics from afar. At the transplant site, only you can communicate back to your university group the particularities and difference you’re experiencing, and can interpret those in terms understood back home.

In summary, your role is symmetric: Where you are now you can assist the team in understanding the situation at the university you came from; via videoconference you can assist the students there understand the culture of the university to which you’ve been transplanted.

Preparation: As coach, you should become familiar with the distance partner teaching culture and course logistics, timing, deliverables, and tools at hand. Have a videoconference or two with the other team’s coaches and T-team; backfill with email and other means of communication to come up to speed. Be sure to mesh well with the culture coaches if there are any. If there are none, you are also the culture coach and must be prepared to shoulder this aspect as well.

At project start-up: The T-team or the coaches may assist in setting up the first videoconference, help smooth out the technical wrinkles and get the local team somewhat tuned to the situation at the other site. Make specific suggestions to promote cohesion (e.g., perhaps each team half should adopt the same team name.) However, be prepared for the distance relationship between the students to take off faster than you can keep up with. Teams thrown in this situation are highly motivated to learn, share, and get moving. Specifically tune to differences in these areas, and make sure they are covered one way or another:

- **Level of education at each site** (1st year MS, 2nd year, etc.); one- or two-year disparities are OK, as long as they are acknowledged. It is a natural effect of the educational process that students of the same age everywhere are roughly at the same stage of their education. Since universities have different paths to achieve their goals, being embedded in different cultures, it becomes our challenge to find the most productive way to work together in distributed design team scenarios.

- **Course and student specialization** (product design vs. industrial design vs. mechatronics, etc.) It is important to understand the context of the distance partner course so that you can help the students identify the other’s relative strengths and weaknesses, and use these differences to the advantage of the project.

- **Learning context** (project-based learning course, such as ME310, vs. research assistant-type experience vs. independent study vs. thesis) and **synchronicity**. Since the start and end of the normal academic year often do not line up between universities, the synchronicity with distance partners is at times strained. To make it possible to collaborate at all, one university may have to use a special logistical mechanism to stay in step with the other. For example, one university that normally works in multi-week, intensive “modules” of learning – in this case the “Design Module” was to be the only activity for the students in the month of June – agreed to let a team of students pursue a less-intense process stretching from January to June to link with a team in the ME310BC sequence. The students were essentially involved in an “Independent Study” mechanism, with lack of T-team support locally. This poses extra stress on students and T-team, and was a significant topic for the several coaches to assist the team in managing.

Other universities have dealt with this issue by having students pursue a thesis project at one university, teamed up with ME310BC at the other site. The “thesis project” students had graduate students mentoring them, but there was no formal course context except that offered by ME310BC at the other Stanford site. In this scenario, again, the role of the coach in understanding the situation provided guidance to the student teams in handling the differences in deliverables, timelines, etc.

- **Deliverable format**, including written documents, demonstrations, presentations, small and large-group meetings (SGM and LGM respectively) and such considerations as level of detail, level of formality. Different universities understandably place different expectations on their students, depending on the didactic goals of the
course, the intensity of the curriculum, the structure of the department, and the educational level of the students. As a coach, you should be aware of the situation at the distance site so that the students do not have unrealistic expectations of the distance partner and form linkages that play to each team’s strength.

In the absence of coaching activity, these differences may only come out well after a project has started, for example when a deliverable is due and one site’s team doesn’t really understand how the other team is functioning. The T-team, although also in the loop from the beginning for coordinating with the distance partners, may not be able to provide the time-critical interventions that you as a coach can.

**During the project:** Be sure to maintain a rich, continual, backchannel conversation with the other coaches and distance T-team. Keep up the coaches’ communication throughout the course to resolve issues that come up. It is useful to sit in on some of the student team videoconferences, of course, especially in the beginning, so you can guide the conversation to items and issues that should get resolved early. As time goes on, your role will evolve from assisting in issues between teams to assisting in matters that involve the project as a whole.

**Promoting trust through communication logging and record keeping:** It is likely that the communication between the teams will evolve to have some formal (videoconference) sessions, perhaps once per week, and a large number of other communications involving instant messaging, email, fax, and phone calls. Each of the 2 team halves will also have significant communication amongst themselves only, largely face-to-face. As much as possible, encourage the team to keep a log and minutes of what is transacted, and to post those in an archive that all team members, especially the distant ones, can access easily. This is important because it might otherwise be easy to infer that no communication obviously means that the other team is doing no work. Even if other team members only scan the logs and emails, that will promote openness, trust, and better cohesion across the distance. While this does mean more overhead, it is a catalyst for more effective collaboration. You, the coach, should also be scanning these communications, not so much for content, but for tone and value as team-building artifacts.

**Promoting trust through shared experiences unrelated to the project at hand:** The coach (and culture coach) can have a large effect by promoting non-project-related activities. For example, a coach on each end can help get the provisions for and prepare a meal, game, movie, assortment of favorite libations and candies from the other site to promote conversation, discussion at the personal level, beyond the project level. This can offer some of the same rewards as the face-to-face meetings that each team has locally, and the meetings teams have when one half travels to the other site.

**Mid-to-end-game of the project:** As the team starts to reduce ambiguity, make decisions on its own and solidify rationale for its own design, there will likely be some friction with the company liaison and client. This heat is actually quite healthy because the client is being forced to rethink the problem and accept the notion of alternate solutions in the context of company mores and criteria. You need to be vigilant during this phase and remind the students that they are in charge, and, at times, being knowledgeable about their assignment, it may be part of their job to educate their client about the project. When it involves a distance team (and possibly client), this can be a daunting task due to the difficulty of establishing a rich communication medium. Exploit personal connections, culture coaches, and any other means to make sure the rationale is conveyed in the proper spirit.

**End result:** At the end of a project, a coach’s highest reward is to feel that his/her personal, largely informal presence over the long run has made a difference in the dynamics of the run of the project. The students can hopefully feel that they have been steered clear of the biggest potholes, have been emboldened to confront some problems that seemed insurmountable, and have learned some human-focused lessons they wouldn’t have seen without the coach. The purpose of the course is to teach the process of design: do the students feel that the role of the coach is distinct from that of the T-team and the client? Will they take this viewpoint to their next station in their professional lives?

**Summary**

Coaching is a rewarding experience on many levels. Obviously, imparting your experience and expertise to a new generation of professionals is very satisfying. But your interaction with young women and men and their fresh
minds, is likely to reinvigorate the excitement that originally motivated you to select your profession and which may have laid dormant for many years of routine work. We have seen how much the students appreciate the assistance you and your colleague coaches afford them. Often, within a few years after graduation, these students return to serve as coaches themselves. This may be the strongest indicator for the value of your work.