

THE TRAINING FORMULA

©Brooke Broadbent
Tel 613 862-4459
brooke.broadbent@gmail.com
brookebroadbent.com

A shorter version of this article appeared in Training and Development magazine in October of 1998 on pages 41 to 43.

Calculating the effort required to design and develop leader-led training can be a challenge. The author outlines 12 criteria, or factors, to consider in crafting leader-led training and suggests ways for using them to accurately estimate the time required to complete an intervention. To ensure success, these 12 criteria and others identified in the course of a specific project may be combined with a detailed work plan and solid project management skills. This article also examines 10 tips for creating achievable work plans.

CALCULATING THE TIME IT TAKES TO CRAFT LEADER-LED TRAINING

Trainers place high value on accurately estimating the amount of time they will require to design and develop training materials. Their professional credibility and financial success is at stake. This is the case with external consultants who estimate effort in order to 'cost' a proposal. It is equally true of internal trainers who estimate effort in order to forecast project completion dates. Leader-led design ratios remain a hot topic because some three-quarters of all training given is leader-led - equaling annual expenditures in the United States of more than \$40 billion.

HELP

Instructional designers fret about the scant number of days they are granted to design training - with good reason - as we see in the following cry for help reconstructed from postings to Internet discussion groups.

From I. M. Concerned <aconsultant@isp.com>

Re Consulting ratios
Fellow list members,

Could someone please provide information about the standards they use for developing instructor-led courses? Our corporate training department has set a ratio of four hours of design and development time for each class hour. I find this extremely low. It will not work for all training . . . I need facts to support a higher design ratio . . .

Cheers,
I. M. Concerned

WHAT OTHERS HAVE SAID

Peter Block, author of the benchmark how-to consulting book, *Flawless consulting*,

advises that contracts need to include detailed information about deadlines, and duration. Geoffrey Bellman, author of *The Consultant's Calling* underlines the importance of spelling out remuneration (1990). Jim Fuller, author of *Managing Performance Improvement Projects*, suggests a series of questions related to scoping, resourcing, constraints and obstacles related to planning and managing projects. However, the literature does not lay out clear guidelines for calculating how many days it takes to design leader-led training.

SOLUTIONS

Put yourself in the shoes of concerned trainers who post calls for help like the preceding one. You are summoned to explain the amount of time required to design training - what would you say?

1. It can take from five to fifty days to design one day of leader-led training.
2. I can't scope training projects until I gather more data about who, what, and how.
3. I need to consider at least a dozen factors.
4. I need to develop a complete workplan that will help calculate total effort.
5. Whatever the amount of time granted to design training, one needs solid project management skills to realize a plan.
6. All of the above.

The correct answer will vary from one training intervention to another but chances are that # 6 is the best reply in most cases. But how do we convince managers or clients who contend that training can be designed at a 4:1 ratio? We need precise information, sound arguments, clear criteria.

DESIGN RATIOS

Instructional designers often refer to the amount of time it takes to design training as a 'ratio'. The ratio 40:1, for example, means it takes forty days of work, or 'effort' to craft one day of training. This effort might be spread over 50 days or more 'duration' to allow for clients comments, other work the instructional designer is undertaking - and weekend breaks.

For a real-world perspective of what it takes to develop training, let's compare three projects. To assemble a three-day communication program for a 20-member management team at a nursing home, it took 27 days of effort for a ration of 9:1. Developing 2.5 days of training to teach the Internet required 45 days - a ratio of 18 to 1. A designer ate up 40 days to craft one day of training for a continent-wide labor-management training program. Three projects. Three vastly different design ratios - the Goliath version being over four times larger than little David. Why? And more important, how - how can an instructional designer accurately estimate the number of days it will take to design a training program?

[Home](#) [Coaching](#) [Consulting and Training](#) [Camino](#) [Store](#) [Site map](#) [Contact](#)

THREE VARIABLES

The time it takes to craft leader-led training programs depends on at least three high-level

variables:

1. who is involved in the design process: the designer, target group and the client
2. what will be taught and what are the final components, content and packaging of the materials
3. how are the materials going to be designed, and how the designer deals with the client, as well as how interactive the program is

Nothing new here, perhaps - unless we dig a little deeper. These three factors cascade into at least 12 variables that determine how long it requires to develop training materials. They are examined below, along with criteria to determine whether a project requires a high, medium or low level of effort.

CONSIDERING 12 FACTORS

By considering the 12 factors in our table and adding others if needed from their individual situations, instructional designers can estimate the time it will take to forge training materials. Although this is not an airtight formula, a person with a fondness for figures could use the foregoing (verify at layout stage) table to estimate the effort required to craft one day of leader-led instruction. Simply multiply each factor that falls in the low column by plus or minus one, each factor in the medium column by plus or minus two and each one in the high column by plus or minus three.

CAUTION

Two words of caution. Firstly, we are talking about an artful formula not a strict standard. So you might have to tweak your numbers. For example, when developing time-consuming games, scenarios and other complex elements, one needs to factor in additional design time. Or if a client provides an electronic version of documentation that forms the base of your training, thus reducing keyboarding time, you might want to reduce the number of days you calculate for crafting the training. In the end, well-selected factors, combined with honest assessment of whether to ascribe low, medium or high values will help you set accurate plans. Even more important, this data will help to convince those you work with that your training design ratio is reasonable.

PLAN YOUR WORK AND WORK YOUR PLAN

The foregoing (verify at layout stage) calculations of the impact of the 12 variables complement the writing of a work plan. A good work plan reflects solid thinking about all the steps required to design training, it estimates everyone's time and commits calculations to paper. In a plan, the effort required to design training becomes clear to the trainer, to clients and to management. A complete workplan oozes credibility. It says to a client or management: the instructional designer who developed this plan knows her stuff; her calculations are accurate; she will complete the work as planned; we can trust her- her design ratios make sense.

A FOUR TO ONE RATIO?

What should we say to concerned instructional designers who pose questions to Internet mailing lists? Will they be able to design one day of sound training with four days of effort? Here is how we might reply.

From I. V. Ideas <ivideas@myisp.com>
Re Consulting ratios

Hello I. M. Concerned,

I read your question to the electronic mailing list about how long it takes to design training. I wish I could give you a quick answer about whether you can design your training programs at a 4:1 ratio. Unfortunately, there is no silver bullet - no precise mathematical standard - for establishing how long it takes to develop training. The range can be anywhere from 4:1 to 50:1 to design one day of leader-led training. You cannot estimate the time it takes to design training projects until you have collected information about who, what, why and how. There are at least 12 factors to consider. These 12 variable combined with other criteria in a specific project can generate a good estimate of how long it will take to design training. They also help test the quality of planning - help to justify tweaking a workplan. However, they do not replace a comprehensive work plan - a crucial tool. A comprehensive, clever and credible project plan helps designers and clients visualize what lies ahead and move ahead with unbridled confidence - mixed with realism. Whatever the amount of time granted to design training, you will also need to draw upon your project management skills to realize your plan.

It pays to do it right - professional credibility and financial success could depend on these calculations, on project management skills - and on systematic thinking.

Cheers,

I. V. Ideas

CONCLUSION

We have seen that there are several actions that training consultants can take to increase the accuracy of their estimates for designing leader-led training. A structured approach helps. One that looks at the key variables that will influence the output that is required and the people involved. Similarly, solid project management techniques help to estimate and manage the effort it takes to craft leader-led training.

Twelve variables that help to estimate the time it will take to design training
This section is best viewed in a table on the Web site of Training and Development magazine.

Key factors

Level of effort required to design training

For each of the 12 factors listed below we have indicated three levels: High, Medium and Low.

WHO

1. designer's knowledge and skills related to instructional design: extensive knowledge of instructional design (high); moderate knowledge of instructional design (medium); minimal knowledge of instructional design (low)
2. designer's knowledge of the subject matter being taught: extensive knowledge of the subject matter; some knowledge of the subject matter; no knowledge of the subject matter
3. size and complexity of the target group: a small and homogeneous target group a

medium size and moderately complex target group; a large and complex target group
4. designer's and client's track records in sticking to plans: they always stick to a plan; they sometimes stick to a plan; they never stick to a plan

WHAT

5. number of modules of instruction: low number (5 modules); medium number (8 modules); high number (12 modules)
6. what components are included in materials: participant materials only an instructor manual, and participant manual an instructor manual, overheads, participant manual and job aids
7. what client expects for packaging: client has modest expectations client; has medium expectations (desktop publishing); client has great expectations (high-quality desktop publishing)
8. what is considered a final product: designer completes the first draft; client does the rest designer completes up to the pilot designer completes all drafts; and finalizes after a pilot

HOW

9. how data is collected: one focus group meeting with a few well-informed people; a focus group meeting and a few interviews; several focus group meetings and several interviews
10. how designer deals with the client: designer deals directly with a client with decision-making authority; designer deals with more than one level of decision-making authority; designer deals with a complex labor-management committee
11. how client is involved in the process: client approves general direction and the final draft; client reviews and approves key materials; client reviews and approves all materials
12. how interactive is the program: modest interactivity moderate interactivity extensive interactivity

Totals _____ x 1 = _____ x 2 = _____ x 3 = _____

Weighted totals

Ten tips for making your workplan achievable

Here are 10 tips for building an achievable workplan for crafting leader-led instruction.

1. If there are gaps in your knowledge, learn about instructional design techniques; project management software and training needs analysis techniques, if you need to. Choose from plenty of good courses, tutorials and books. Free, detailed information about project planning is available at the Web site of the 35,000 member - Project Planning Institute at <http://www.pmi.com/>.
2. Learn as much as possible about a client and the context of the project before committing to a workplan. When a client fits squarely into the high effort column of our matrix, avoid a fixed price contract if possible, because one can't be certain how long it will take to complete the work. Instead, opt for a phased project in which you do a piece of work, and then estimate the next phase based on the amount of time it took for the last

- one. A day-to-day contract might also work well, where the client pays for each day of work completed, rather than a fixed price for completing the project deliverables.
3. Consider the 12 factors described above and weave them or others into your planning as appropriate.
 4. Build review time into a workplan, so a client can critique your work at different stages.
 5. Make a clear distinction in your mind and plans between effort (the number of days you need to devote to completing the work) and duration (the amount of time to complete the project, including review time for the client's representatives).
 6. Use project management software like Microsoft Project J or Corel 7 Time Line 7 to plan your work and help forecast effort and duration. Clients love a clear plan.
 7. When you do develop a workplan and a client approves it, stick to it. If revisions are necessary, make them formally.
 8. Learn to get full value from word processing software by using automated features like styles, templates and graphics that will help you quickly compose spiffy status reports.
 9. Make regular reports to your clients to keep them abreast of progress and challenges.
 10. When completing a task, keep a scrupulous record of how much time it takes you. You will be able to use this information next time in your estimates, if you miscalculate the first time.

References

Bellman, Geoffrey M. (1990) *The Consultant's Calling*. San Francisco, CA.: Jossey-Bass/Pfeiffer.

Block, Peter. (1981). *Flawless Consulting*. San Francisco, CA.: Jossey-Bass/Pfeiffer.

Fuller, Jim. (1997). *Managing Performance Improvement Projects*. San Francisco, CA.: Jossey-Bass/Pfeiffer.

Jackson, S., and Addison, R. (1992) "Planning and Managing projects." In H. Stolovitch and E.

Keeps (ed.), *Handbook of Human Performance Technology: A Comprehensive Guide for Analyzing and Solving Performance Problems in Organizations*. San Francisco, CA.: Jossey-Bass/Pfeiffer.

©Brooke Broadbent

Tel 613 862-4459

brooke.broadbent@gmail.com

brookebroadbent.com