

## **How to Develop a Job Aid Presented by Tony Moore**

---

**Ed Kelly:** I'm going to reintroduce our technical leader for the day, Tony Moore, and he's going to walk us through a seven-step program for developing job aids for those of us who are performance addicted. It's designed to be a real roll-up-your-sleeves type course, in part because I think Tony normally does this thing over a week—two to three days.

**Tony Moore:** This slide is intended to set job aids in a larger context of all of the factors that influence performance and need to be in place to get star performance. The reason for this is, if you want a star performer, and by the way, if you line up a lot of star performers, each with this underneath them, and have them point their arrows up, what do you get? A star organization. Everybody in the organization performing at their best, everyone.

To get this star performance, your performers have to have relevant skills and knowledge, they have to have a supportive environment, an environment free of barriers that prevent them from doing their jobs. How's the lighting, how's the temperature, you've got all these ambience kinds of things. How are the distractions? Knowledge workers. You cannot believe the number of companies with knowledge workers with these PA systems. Beep beep! Al Sharpton, please call 456. You know what happens? People in knowledge work are buried away down there and they hear something in the background but they're finishing this thought. If you were up high and you could look down into the cubes, the cells, what do you see? Everybody's head raises. How many people in the room? At USAID, how many people are in the cellular forest up there?

The interesting thing is, now they're waiting to hear it a second time because it always comes again, they didn't hear the name the first time, they just heard the noise. Now it's Al Sharpton, now they know it's not them, back down they go. Are they right back to work? There's been some research that's been done that says when a knowledge worker is interrupted from deep thought it takes 15 minutes to recover. Now think about it. Where was I, what was my train of thought, what preceded this, it just interrupts everything, you've now come to a dead stop from—what is the new buzzword, the flow state? Flow state interrupted, now you've got to achieve flow again and it takes time to ramp it back up to speed. Some of the people up there may have lost that thought forever now. Now multiply that 15 minutes for that single interruption by the number of people in that room. It only takes four and you've lost an hour of productivity for that department. How many times does that speaker go off? It's incredibly expensive. So there's all kinds of environmental things to think about. Any barrier that's external to the employee is a barrier to their being a star performer.

Motivations and incentives. Something else we have to consider. Motivation is an internal thing and I don't like personally messing with people's motivation. Their motives are their business and I'm not a trained psychologist and I have no business meddling there, that's their personal private life. As long as that personal private life doesn't interfere with productivity, I don't care. However, I do care a lot about incentives because I can do a lot with incentives. The problem with incentives is that they are such a personal thing. What motivates you is probably different than what motivates her, which is different from what motivates her. So that complicates issues for supervisors. To complicate it further, what motivated you five minutes ago probably isn't going to motivate you next month. When I was a child, my mother found that she could get me to do anything around the house for a piece of cherry pie. She obviously fed me a lot of cherry pie. But there got to be a point where I got saturated on cherry pie and I couldn't look at another cherry pie and it ceased to be a motivator. So these are things you need to be aware of.

*Job Aids Symposium*  
*May 24, 2001*  
*International Trade Center, Washington DC*  
*Tony Moore: How to Develop a Job Aid*  
*Partially Edited Transcript*

Capacity. This is the personal capacity of the people. This deals, basically, with three things: mental capacity, emotional capacity, and physical capacity. Now, our tendency today is to try and go out and hire people with maximum capacity. Guess what you're going to have to do to get them?

Don't make the mistake of having only one pill in your medicine bag. Job aids are a pill and a medicine. Levitor lowers cholesterol. But what if you prescribed it for a broken leg? If I prescribe a job aid for the wrong cause, it's an equivalent thing. Job aids are really powerful and I'm sure this drug you just talked about is probably very good for the cholesterol thing, a lot better than aspirin. Job aids are really good when you've got them targeted to the right thing. I don't want to tell you not to use job aids. What I am going to try and tell you is don't use them inappropriately; prescribe your solutions wisely. We don't want to start developing job aids resistance.

Here's skill and knowledge. That's one factor and look what falls under new skill or knowledge. Where do you get skill or knowledge? Through training? Through experience, more honestly called trial and error, and job aids. What's the difference? These two store this skill, this knowledge, this data, however you want to call it, in the head. Job aids stores it in the hands. All three deal with information deficits as contributors to performance problems. If the problem is caused by something, a barrier in the environment, this is going to fix it. But if you've got a skill and knowledge problem, and this, and you take care of the skill or knowledge, you may not see any results here because that barrier is still there.

When you're making your recommendations, because you want to maintain your credibility with your clients, you want to take this systematic, or holistic, view of performance. Say, "I think job aids will help to some degree but you're not going to realize the power until you take care of this as well. I'll do the job aids, you take care of your end of the deal and maybe together we can improve performance around here."

The first thing you have to know is whether or not the performance problem is caused by a lack of knowledge. Here are some questions that will help you do it. Ask "Has the target population, target audience, ever performed the task correctly?" If they have, guess what? They know how to do it. Chances are the answer to this is going to improve the probability that new skill or knowledge is not the issue here. However, if they did it, but the last time they had an opportunity to do it was last year. Guess what? Unless it's a fairly simple, overt task, they've probably forgotten how and that is a legitimate issue.

Next issue, could they do it if their lives depended upon it? If you put a gun to their heads and said, "Now I want to see you do this well." All of a sudden, you get a great product out of these people. It wasn't skill or knowledge, it was a motivation issue and you just provided it.

Have they ever received training? If not, that's an indicator this might be a skill or knowledge problem. If so, then you have to go beyond. How much time passed between the training and the on-the-job application? In manufacturing, manufacturers like to get their raw materials just in time to apply it to their product, they don't want a huge inventory of raw materials sitting around, it's expensive, all that capital tied up in inventory.

The same thing is true with training, we don't want these people trained and then not applying it. Why? They'll forget. In 24 hours you've lost 50 percent of what you learn? I kind of suspect that has more to do with knowledge-based courses as opposed to performance-based courses, but it's still true in the sense that your training raises them to a level. After that it needs doing to maintain that level, otherwise performance starts to degrade.

What was the quality of the training? Lots of controversy in this area because, unfortunately in our profession there's no real agreement about what defines quality training. There are two major schools of thought and a lot of minor ones floating around, and people get very, very emotional about it. The only answer I've got to it is, I find mine useful in my situation and if you think yours is going to be more useful, that's fine, I'll rise to

*Job Aids Symposium*  
*May 24, 2001*  
*International Trade Center, Washington DC*  
*Tony Moore: How to Develop a Job Aid*  
*Partially Edited Transcript*

the challenge. Let's each create a course to attack this performance problem and let's put our money where our mouths are. Will you give up your salary for the period of time it takes to develop this course? I'll give up my fee for developing it if I don't beat you, and beat you is measurable improvement of performance on the job -- with one caveat. I'll beat you in the final practice in the classroom under simulated conditions where I've got control of the environment. I'm confident enough I will, I'll work for six months to develop a course and I won't charge a fee if it doesn't meet the performance standards we set. Will the others make the same—will they put their money where their mouths are? Some might, and if you get good performance out of what they develop, wonderful. If it is better than mine, please send them my business card and have them invite me to their next workshop; I want to learn a better system. I'm not wedded to mine other than temporarily. We could be divorced any minute, the minute you show me a technique that works better.

Is there a job aid? If there's a job aid, chances are it's not a skill or knowledge issue. If there isn't, chances are that's another indicator it might be skill or knowledge. If there is a job aid, though, you better ask these questions about the job aid. (Again, this is a quality issue.) Does this job aid tell when and how to do the steps of the task? Is it up to date, have recent changes in the process or the software been incorporated, and is it in enough detail to minimize mistakes while using it? And finally, do the performers actually use it? That last question addresses, more than anything else, the format. Is this an easy-to-use format, lots of white space, numbered so you can see the steps and you know the sequence to go in? We'll get to the rest of the rules later on. So that's how to determine if it's a skill or a knowledge deficit.

Now, at this point, you've got three options if you decide if this is a skill or knowledge problem. As I recall you've got three medicines available to treat that. Which one is the best for this circumstance? How to determine if a job aid is needed? If a job aid is mandated by government fiat, by organization policy, just do it, you're probably not going to win that battle, just do it and pray for the best. If there are severe consequences of error, in other words if the performer makes a mistake while doing this task will the consequences be significant. Is the task not done frequently? Frequently is an iffy thing, it depends on a lot of factors, but generally speaking if it's done less than two or three times a month, in other words if it's done weekly it's probably frequent enough to maintain performance. With a caveat—the more complex this task, the more cognitive this task, the more steps in this task, the more frequent you want the behavior to be done on the job, the more you should think about using a job aid. Otherwise you're going to have a hard time remembering.

On the other hand, the more overt the behavior, the fewer the number of steps, the simpler (simpler defined as easy discriminations not fine discriminations) rules that have no exceptions versus rules that have lots of exceptions. Those are the kinds of things you think about. We're talking about the number of steps, how complex are the decisions, are your budget and time limited? Is this task likely to change in the near future?

If any of these show up, then you ask, is there time to refer to a job aid when doing the task, or will the job aid slow it down enough that performance will be unacceptable? So if any of these factors are here and there's time, then write a job aid for it.

On the other hand, if the task is simple, which is really the inverse of these things, if none of these are there, by definition it's simple, do not write a job aid for this task. Train it for recall. If this job is done daily, or more than once a day, or two or three times a week, you know, you might as well train people to do it. If they use the job aid two or three times a week, sheer repetition is going to drive it into memory anyway unless it's got 500 steps or something. But 500 steps keeps you from dropping down to that box, doesn't it? Is this making sense?

There are sometimes other reasons for not job aiding. Doctors, imagine a patient sitting in front of you, what's one reason that you can think of for not using a job aid while you're diagnosing this patient? Psycho-social issues, embarrassment, my credibility is threatened. So that's one potential. The key is, just don't give up at this point because the value of job aids is significant. What you can get out of them is significant if you look

*Job Aids Symposium*  
*May 24, 2001*  
*International Trade Center, Washington DC*  
*Tony Moore: How to Develop a Job Aid*  
*Partially Edited Transcript*

for a way. If you cannot minimize these barriers, turn that into rule. Look for ways to minimize or eliminate those barriers, and if you can't, then don't do a job aid. If you can eliminate those barriers, then do the job aid.

Reconsider the way you do your traditional training. Write a job aid anyway, even if it tells you not to here, but just call it a learning aid. Then build your training around how to use that learning aid until, in the classroom, they can do it from recall. Just feed it to them in little pieces and keep repeating it. Start off easy, go to complex, get right down to the nitty gritty of what's my job?

You're going to have a job aid that has these tables in it, by the way. Simple rules, when skills and knowledge are deficient, consider job aids first. I'm unabashedly biased in favor of job aids. The corollary is, think of training as the last resort because it is so expensive. Joe Harless has estimated it takes four to five times more time to train to recall than to train to use a job aid, and three to four times as long to develop a training course that takes you to recall as to develop a job aid. Think about it.

I develop a job aid. I have you practice using it a couple of times, and you're off. If I have to get it to memory, I have to develop the job aid and call it a learning aid. Now I have to develop simulations for you to use it in and all these practices and repetitions. With job aids, you don't need repetitions, because the intent of repetition is to drive it into the memory. Job aids say, "I don't want it memorized, I want you to use it here so you eliminate that repetition."

Job aids cannot solve all performance problems. They can't solve barriers in the environment, they can't solve motivation incentive, and they certainly can't solve capacity issues unless the job aid is how to hire an employee who can do it, but that's not the employee's job, that's the supervisor's job. Always look for ways to minimize barriers to using them, so that kind of sums up where we've been. Make sure your job aids are easy to use.

I want to look at how to minimize barriers to job aids and I want to look at how to train using a job aid. Then we're going to go into how to decide the correct format, how to write a job aid, give you some writing guidelines, and then how to create a decision table and then, if time permits, how to sell a job aid. "Sell" in quotes because I don't mean go out and market them and get Wal-Mart to carry them for you. I mean how to get the employees, supervisors, and people like that to use them.

Here are some of the common barriers. A severe speed requirement to the task. Hands are occupied all the time; therefore, I can't climb a utility pole and work on the wires and hang onto the pole and have a manual at the same time. Not really good. Embarrassing to use. Prejudice against use, because so many job aids (i.e., manuals, user documentation) have been so poorly written that we've been conditioned to try and figure it out ourselves rather than go through this painful experience of trying to figure out the manual.

The other real prejudice against using job aids is intellectual. I'm convinced somehow that job aids are feminine in nature, because real men, real employees, real experts, don't use job aids. They think experts should be able to do it from memory. Well, if that were really true, we wouldn't see that wide variation that Jim showed us this morning. Those are people who feel, "I'm the one who does it well, I don't want my hospital telling me how to perform this surgery, unless it's my method. Let everybody learn my method and then fine, standardize away." What is it, 20 percent of all people who go into American hospitals today get sick in the hospital? Pick up infections that could have been avoided? That's scary business. There's a big opportunity in this field, people, big opportunity.

Here are common minimizing techniques. Do what I call a prompt-to-recall job aid. Rather than recall, than develop a job aid that's in that level of detail I talked about, raise the level of detail. Do some training and then put up a job aid that simply tickles the memory and you hope that you get the performance out of it. To a large degree, the job aids we saw with the illustrations that had the father participating and people smiling and all

*Job Aids Symposium*  
*May 24, 2001*  
*International Trade Center, Washington DC*  
*Tony Moore: How to Develop a Job Aid*  
*Partially Edited Transcript*

that, are this kind of prompt, because when the health care worker presents this job aid, it describes to them what these pictures mean. So all the detail is now in memory but when the patient or the mother goes home and looks at the picture, that stimulates recall of what they heard in the doctor's office. It's a prompting device; it's a job aid in that sense.

Use an assistant job aid. In the cockpit, frequently co-pilots will be assistants to the pilot and read off the checklist of things that have to be checked. Flaps, ten percent, Roger. Another assistant I saw one time just blew me away and I had to try it myself and I couldn't handle it. A talent we used on a training table said, "send me a tape of the script with the inflection you want, with the pronunciations correct, and I'll be in ready to shoot tomorrow." Well, we couriered it over, and that morning, just before the shoot, we listened to the tape. But then when it was time for the shoot, with a wire to the ear and a tape in the back, he said, are you ready? Press the button, listen to it in the ear and speak. It was a prompt, it was an assistant, it was telling what to say and he said it. Try it. It is so disorienting! Because you're trying to listen and speak at the same time and I don't know about you but I can't walk and chew gum simultaneously, much less do something really difficult like that! But he had it down to a science. That's an assistant.

To get over the embarrassment, psycho-social factors, find a way to hide it. In the job aid we saw this morning, the instructions were built right into the patient record, so you fill out the questions. Everything you have to do is there, you write in the answer and then that sheet becomes a permanent part of the record. You've been guided through what questions to ask by the form itself. Now the patient doesn't see it as a job aid. The patient says "Oh, this must be where they're keeping the record, that's all that is." There are all kinds of clever ways to hide it.

I want you to think about this on your own. I'm going to give you thirty seconds or so after I've revealed all of them. Here's the situation. Clinic assistants have not been accurately or completely capturing and presenting systems and histories, resulting in a high incidence of delayed diagnosis, misdiagnosis, and medication errors. The assistants are young and eager to do a good job, they are inexperienced, they feel pressured by the large queues, and they are too self-conscious to use the laminated list of questions they were given during the actual interview. Their work space presents no significant barriers, they sit across from the patients at a desk that happens to have a glass top on it. There's a large wall immediately behind the patient with fresh paint and nothing else. The clinical systems notes are written on a sheet of paper and given to the patient who then, in turn, gets into the next queue and gives it to the doctor. Solve the problem in the first one, just to yourself, how would you do it. What is the problem here?

Not getting the history correctly is the problem. Not asking—well the cause is not asking the right questions. What's the root cause though, what drives not asking the right questions? Not using their job aid, the laminate. Why? They're embarrassed. Solve the problem. Under the glass, on the wall? Others? Writing on the piece of paper with the questions on it. An acronym, a memory device, a mnemonic, and that could be up on the wall but it's a cue, it's an assistant job aid that cues memorized behavior.

Once you've got the cue, if it's been really well learned, it will just help me get it out in the right order. I like that one, I haven't thought of that. I've got a new solution to our problem. That's what consultants do, they get the answers from somebody else and then take the credit for them.

How to use job aids in training. This is typically one-on-one or one on a few. With your target audience there, you preview the things that are going to be trained. "Today I'm going to show you how to correctly operate this respirator. We have to do this because the patient's life depends on it, first of all, and secondly you're going to get into a lot of trouble from central service when they find out that you've sent out a broken machine that's not broken." Tell why it's important. You know, last year we had X number of incidents filed against us, we've got a lawsuit presently pending because an un-named nurse didn't do it correctly and it created

*Job Aids Symposium*  
*May 24, 2001*  
*International Trade Center, Washington DC*  
*Tony Moore: How to Develop a Job Aid*  
*Partially Edited Transcript*

problems for a patient, and we want to try and avoid that in the future. You certainly don't want to be the object of a lawsuit.

Tell why it's important, you can do that on several levels. The most effective level is why is it important to the worker, what does the worker get out of it? Secondly, what does the worker's department get out of it and coworkers? Third, what does the organization get out of it? Fourth, what does society get out of it? All those are good but in order to have an impact on your target audience, you really want to find something that will make that person sit up and make them attend, give them a reason for listening to you.

If needed, teach subtasks to recall. That's kind of a large category. I tell them, in order to use this job aid, you're going to have to know how to do this particular procedure and we don't put it in the job aid, so I'm going to show you how to do it. I'm going to give you three or four times to do it. That way I don't have to have my procedure overwhelmed with minutiae. I will teach it to you and then cue it in the job aid. I would tend to do that if they do that particular thing lots of times and maybe this is a fundamental skill that's used in other job aids as well. So it's going to be done frequently, even though that one particular job aid may not be used frequently, that particular subtask might.

Vocabulary—you might have words in this job aid that they don't know the meaning of. Once you start showing them how to do it, you don't want to interrupt it and say, "oh by the way, I forgot to tell you this means..." Or you don't want them to say, "what does this word mean?" Worse, you don't want to go on thinking they know what it means and they're too embarrassed to stop and show you how stupid they are by asking. It wasn't they who were stupid; it was the job aid or the trainer who failed to recognize that word wasn't part of their vocabulary.

Keep in mind, if it doesn't improve performance, it's not the performer's fault. It's the job aid designer's, maybe in collaboration with the trainer. The old saying goes, if the student didn't learn the teacher didn't teach.

Demonstrate using the job aid. You've got to model using it, you've got to show them how to use it. A good technique, if it's feasible, is to give them the job aid and say, "I want you to read the first step or the first couple of steps," and while they read it you do it. Now here are some of the cues. Do a few steps at a time. But you don't want to overload that short-term memory, thirty seconds is about as much as they can handle in the audible channel, through the ears. Two minutes for most people if they're reading, give or take a couple of minutes.

Tell why each step is done. You can't demonstrate why, that's a cognitive thing. What you want to do is demonstrate what they can see and tell what they can't see. "I do that because..." Use interactive questions to direct attention to key, visible actions. If in removing the vial from the jet inoculator—I'm just making this up—but in removing the vial from the jet inoculator it is important, first to push down and then twist before you take it off or you break the top of the vial off the inoculator. They may not notice that, so what you do, as they just read it to you and you start to work on this, you say, "I want you to notice real closely what I do first here, did you see it? Let me do it again, what did I do?" And they say, "you pushed it in." Right! And the reason I did that is—bingo! Now, which way do I turn it? Bingo! You turned it counter-clockwise. Right, if I go the other way I just put it right back in. You say, "gee, do you have to do that all the time?" That was my first reaction until I experienced it as a student. Until I listened to the reactions of students who had been through training this way.

You started early in the morning and the next thing you know it is time to break for lunch. They'll say, "Already? We just started!" Is that a typical response to most training? No, a typical response is, after the first half hour, "Isn't it time to eat yet?" What's the difference? In other trainings, their minds wander. Now, their minds can't wander because they know you're going to ask a question and you expect an answer. They have to

*Job Aids Symposium*  
*May 24, 2001*  
*International Trade Center, Washington DC*  
*Tony Moore: How to Develop a Job Aid*  
*Partially Edited Transcript*

focus on what you're doing very, very closely and that focus, that attention, makes time fly. It also makes sure they don't miss anything. It's really neat.

Practice it first because it's very difficult to do. If you're not used to teaching by asking, it's very difficult to do because you're all subject to Pavlovian laws. You put the audience in front of you, and best intentions are going to fade out to the stimulus response. I've lectured all my life as a teacher, I put the audience in front, I said, "This time I'm not going to talk all day," and then you do! You really have to set it up so you can succeed.

Allow the trainee to try each action right after each demo. This is another reason why this thing moves so fast. You demo about thirty seconds' worth of steps, asking interactive questions. You say "okay, now it's your turn, you try just those steps, let me set it up for you. Tell me what you're doing as you do it." If it's a particularly dangerous kind of thing, where somebody could get hurt or an expensive piece of equipment could be broken, modify that instruction. Tell the trainee "I want you to do it next, but before you do it I want you to tell me exactly what you're going to do first." If they're wrong, you stop them, direct them, and then try it again. Does that make sense?

Finally, now you've gone through the whole job aid, a couple of steps, two, three, four, whatever you can do in thirty seconds. They've tried and practiced it, now you say "Okay, you've been through everything, now I want you to do it from beginning to end." Now they pull all these little pieces together into one smooth whole. There is no need to repeat beyond that, because we're not trying to get them to memorize it. If they feel uncomfortable with it, someone might say, "Can I try that one more time?" Sure, I want you to be confident that you can do it, but the intent is to build the confidence now, not to build memorization, because the job aid is the memory now.

How to select the right format? We're getting down to the nitty gritty now. If the task involves steps in a sequence, then consider using a cookbook, a worksheet or a checklist, or some combination depending upon the task. What is most appropriate in that situation, but these three are what you ought to think of whenever the behavior or any part of the behavior is a sequence. Cookbook, number one, number two, number three. A worksheet if written responses are required. If the directions are long and complex, consider separating the cookbook from the worksheet and have the worksheet separate. If the worksheet is going to be kept as part of a record, consider keeping it separate from the directions.

A checklist is used when order is not necessarily important, but you need to have some sort of visual thing, at least mentally, to check off as you do them. If there's a chance there could be a long period of time between the check boxes, I would make it a requirement to actually write the checks in. Otherwise they'll overlook one of those. We have a short-term memory of about 15 seconds, if we don't begin the behavior within 15 seconds of having read the instruction, believe it or not, you're going to lose it.

As an example, how many times have you been at the airport, and you say, "I'll take this chance to call my friend who lives in this town." You dial, phone is busy, you hang up. I'll try again. Guess what? You have to look the number up again. It's gone. For those of you for whom that is not true, you're able to remember it from now on, please understand you're the exception. You're out on that tail, way away from the rest of us and don't do what most of us do and say, "Well, everybody else must be just like me, it's easy for me, it must be easy for them." Not true.

If what you're dealing with are decisions, discriminations, rules, rules with exceptions, problem-solving, also called diagnosis or troubleshooting, these are synonyms. What problem-solving, diagnosis and troubleshooting are is a sequence of decisions. Start here, make a decision, you either go this way or that way down the tree. You make the next decision, you either go this way or that way and you're going to end up, the ending point could be any one of maybe hundreds of possible ending points, so where you end up is strictly

*Job Aids Symposium  
May 24, 2001  
International Trade Center, Washington DC  
Tony Moore: How to Develop a Job Aid  
Partially Edited Transcript*

dependent upon the answer to the questions. I've got this symptom that modifies the next question, so I ask this instead of that. You get the next answer.... For decision tables or algorithms, keep it simple, none of those fancy symbols.

If there are combinations of any of the above in the same task, then mix them as appropriate, for the sequence part of the task, cookbook perhaps, for the decision part, maybe a decision table. If it's a simple yes, no, binary kind of decision, though, sometimes I tend to just say, ask the question, do you have this situation, and yes or no listed underneath as two bullets instead of an actual table. Or I'll just have two indented bullets underneath the question and in capital letters, if yes, comma, lowercase, then go to this question. If no, no in capital letters, comma, then go to this question. So you route them through the job aid that way and most people seem to be able to handle that quite nicely.

- Determine whether to use the malaria treatment job aid or the measles treatment job aid. What is that, what format would you use? Algorithm? Decision table? You're definitely making a decision between one job aid or the other. Or, maybe my question, do you have this symptom or that symptom, fever versus something. Two bullets to say if yes, go to this job aid, if not, go to that job aid.
- Assemble the jet gun inoculator. Try to imagine what that's involved with. Cookbook. Most assembly tasks are strictly sequential with some rare exceptions.
- Select the appropriate crutch size. You can tell my medical experience is really limited. I really stretched with these. What did you come up with? Decision table. Is it this one, this one, or this one?
- Decide when mother should return with her sick child. Either one, algorithm or decision table, I'm not sure IMCI didn't do this as a decision table. I turned it into a decision table and it ceased to work at that point? We're giving you these rules but I try to be real careful and call them guidelines.

The last step in this process, or the next to the last step, is test it on a real audience. I don't mean to be disrespectful, but from a business point of view, we don't need a year-long study with hundreds of cases under tightly controlled conditions. We pick one or two, we try it out, if one has problems with it, our assumption is that everybody is going to have trouble with it, we scratch it out, rewrite it, hand it back to them and say, try it now. If they can do it, voila, we found the problem. We just assume we're wrong, they're always right.

Notice I didn't ask their opinion. "What would you prefer?" I said, "Here's the job aid, do the job." Then I watch where they have trouble. When I see they stumbled on a step or hesitated, I say, "what if I changed the wording here, would this make a difference?" And they say, "Now I can do it. Hey! Solved a problem."

For me to say, "How would you do this?" kind of abandons my responsibility. It's saying, "Well, I don't know what I'm doing, you probably can do it as well as me." Right now in medicine we want the patient to participate with the doctor but I think I would find another doctor if he said, "What medicine would you like today? You want the little red pills?"

- Diagnose and prescribe pretreatment for patient. Algorithm, or maybe, combination? There could be some sequence here, but frequent decisions, algorithm perhaps.

How to write a job aid. Put the name of the task at the top. If you've got a lot of job aids, it's right where you're going to look to find out. Is this the one I want? The title is like a tool for helping you find it. Write the purpose, when to start, and what materials are needed next. You don't have to take notes, by the way.

*Job Aids Symposium*  
*May 24, 2001*  
*International Trade Center, Washington DC*  
*Tony Moore: How to Develop a Job Aid*  
*Partially Edited Transcript*

I'm going to give you a job aid, if that's what you're doing, trying to capture all this, I've got a job aid that captures all this.

Write the purpose, when to start and what materials are needed next. Now, let me tell you where I vary this sometimes. I sometimes will say, purpose, colon, when to do it, when not to do it, colon, whatever that is, but I sometimes move the materials down to step one. Gather these things first. It's amazing the power of a #1. People tend to not even look at the front matter of job aids. So they're going to skip that materials list because it's such a pain to read, and then they get into the middle of the procedure, they say "nurse, where's that clamp?" "You didn't tell me to get that clamp." "Put your hand right here in that patient till I come back." Not the time to be looking for the materials. As an auto mechanic I'm the perfect example, I'm a slow learner. I can't tell you the number of times I crawled underneath the car when I was younger, just to find out I don't have the tools I need. Get out, go get the toolbox and crawl back underneath. An expert mechanic picks out the tools they know they're going to use ahead of time. They don't have to keep going back and forth, they've got what they need—not one tool more—everything they're going to use is with them, that's one of the primary differences between novices and experts, the way they prepare to do the task. As part of the front matter it's likely to be overlooked. As a numbered step, it's not.

Write the actions or the steps. Up here, this is what you're going to do, this is how you're going to do it, this is the actual step-by-step directions. Consider using pictures. I am of the school that emphasizes the idea of using pictures only if they contribute to improving the performance. I'm not one to add pictures just to make it pretty and attractive. Real workers really don't care, it might be cute the first time, after that they never look at it.

Real workers really want to do good work. Do you want to do good work? I'm sure you do. Please get all these barriers out of my way and pictures are distracting, they're competing stimuli. Just make this a business document, and that's what I want in there, is get down to business, get to it. And if it helps them do their jobs better, quicker, faster, better, they're going to love that job aid.

If they can read -- otherwise, load it up with pictures, absolutely. The question brings up a very good point. When they can't read you teach them how to read. That's exactly what I saw this morning. You add this beautiful job aid with these illustrations, and what you said was, "when you see this think this." How is that different from "when you see this word think this." Rather than go through the alphabet and words and sentences and all that, you go right to the symbol, a pictorial symbol, and it says, when you see this I want you to think this. It's the same thing, it's reading.

Partly, I am illustrating an example with examples or I'm entertaining, or a little of both. A job aid sometimes has places for notes and for examples, but I wouldn't want to get carried away with it, just an example. When I get to examples, what I typically will do is make a decision at this point. I'm going to go to a two-column job aid, the steps in the left column, and the notes in the right column. Otherwise, steps are interrupted by notes.

The result of good training is a competent student. Measure me on competence afterwards and on your competence, not my competence. Now I focus on what I should be focusing on. You see the subtle difference?

Performance is two things. Performance is what we do on the job and what is produced by what we do. What we do is the verb, present or past. I don't care, but that's what we do. But doing has to have a purpose, and the purpose is the accomplishment or the result. So there are behaviors and accomplishments, or behaviors and outputs, behaviors and results. Behaviors are always verbs. Results, outputs, and accomplishments are always nouns. Sounds easy, doesn't it? You'll struggle. Almost everyone does. It's like a foreign language all of the sudden.

*Job Aids Symposium*  
*May 24, 2001*  
*International Trade Center, Washington DC*  
*Tony Moore: How to Develop a Job Aid*  
*Partially Edited Transcript*

Not only do you put the result down, but you put the task standards. In other words, how are you going to be measured. I've not only done it, but I've done it to standard. Remember the high standards that we set? Not mediocre standards. Exemplary standards. Something I didn't have on the training part, though, is when you're training, right after you tell them what you're going to be talking about, what you're going to be teaching them, show them an example of the result.

Get them to read the standards. This is what you're going to produce when you've learned to do this, this is how we're going to measure you, now let's learn how to do it. It gives them an idea where you're headed.

Guidelines for writing job aids. Use "act" for the steps. Use an action verb plus the object. Do this. Do that. Turn left.

Highlight important information. Here's one form of highlighting, highlighting doesn't necessarily mean with yellow marker, all caps is a way of highlighting. But, be careful. Highlight only the truly important things—otherwise what stands out, if you over-highlight, is what you haven't highlighted. Absolutely true, and it's an ugly page, a truly ugly page, it's not inviting to use.

Now, the interesting thing about all caps—boy, limit how much you use all caps, all caps are very difficult to read. Typically, what advanced readers do when they're reading is they catch the first letter or two and then they look at the shape of the word. And then those two things they combine and take the context of what they're reading and they take a guess at what the word is and move on. They don't bother—when you're learning to read you sounded out every syllable, but eventually you saw that word often enough that the first syllable and the shape was enough and you read it and moved on, that's where fluent reading comes from. Look what's missing when you go all caps. What's the shape of that word? The outline, the outline. If you drew a box around the outline of the letters, what would be the shape if we did that in lower case? Considerably different. Children have a very difficult time reading "was", w-a-s, and "saw". Three letters, no shape, and they confuse the "s" and the "w" and will guess the wrong word, over and over. Yet, you can teach them to read the word "elephant" with no trouble at all.

Why? Because lower case has got a unique shape all of its own and there's no other word in the English language like it. They latch onto that, they don't know they're doing that, but they latch onto it right away. So upper case slows reading. Upper case is good for the important words, because we want to slow them down at that point and bring them to a stop to think about it and decode it and move on. They've not just brushed over it, you've forced them to read it. Other ways. Boxing. Lots of white space. There's just all kinds of ways to highlight.

Follow the one-stop shopping rule. The one-stop shopping rule means, if you refer to a picture, cut it right in where the step is or at least, if for some overwhelming reason you can't do that, keep it on the same page or at least the facing page. Don't make them flip around, you don't have to make several stops, you don't refer them to a separate book.

Don't make the job aid hard. Job aids aren't easy to use, don't make it any more difficult than it is so put everything they need on that page. If that means you have to repeat that picture over and over and over, if you refer to it several times on one page, put it at the top of the page. Put numbered call-outs with it and refer to those call-outs, or number the callouts the same number as the step that refers to it, pointing right to what you're talking about, that uses that picture once on that page.

If you turn the page and you need to refer to that picture again, put that picture in. But that's so expensive! Now I've got all these additional costs and graphic costs, and now I'm going to have more pages! Let me tell you, folks, even in Zambia, where paper is as valuable as gold it seems, boy, you can't believe what

*Job Aids Symposium*  
*May 24, 2001*  
*International Trade Center, Washington DC*  
*Tony Moore: How to Develop a Job Aid*  
*Partially Edited Transcript*

that pediatric hospital did to get paper. Even in that situation, paper is cheaper than mistakes. The problem is we don't get punished for the mistakes. Usually, we get punished on our budget for the printing. So we don't have incentive to do it right, we have incentive to make difficult job aids.

Follow the look away rule. Here's the look away rule. On average, the short-term memory is 15 seconds. Okay? You want them to be able to look at that rule, read it, turn away, and be able to complete the step, first of all without having to look back. Then, when they do look back, you want to be able to quickly find where they left off and not have to hunt through a whole paragraph of text, lots of white space, numbering, all helps in that respect. Not putting too much behavior in a step helps.

Now, a step might be 20 minutes long. That's all right, if it's only been 15 seconds that you initiate the last new behavior from the time you read the thing. So the step might be, remove the lug nuts from the tire. Now, I don't know about you but that takes me a long time. That doesn't mean I have to say, remove lug nut one, remove lug nut two, I've started it and I'll remember it till I'm done and then I'll want to go back. Hey, I'm telling you, there are some people who do that, they take these rules and go to extremes with them. Think of these as guidelines, common sense is not so common, but this is common. The problem you get into if you put two things in there, like do this and then that, you can get away with it as long as "that" begins within 15 seconds. If this takes more than 15 seconds, chances are they're going to even forget that existed and go on to the next step and the second part won't get done.

Put warnings before each step. How helpful is it when your husband warns you about that low beam after you've struck your head? "Watch out honey!" "Thanks." You want the warning before you execute the action so you're prepared as you're executing. I'm telling you, we put warnings below every time, people do a step and then they're in trouble because they didn't read beyond the step, they read that part of the step and they say, oh, I can do that and then they go off and do it. They won't read beyond that. They'll fill up that short-term memory, stop reading, and go start. Put that caution up front.

Consider call out worksheets or checklists. If pictures will make it easier to understand what to do, consider callouts to improve their usefulness, only if they'll improve their usefulness. You don't want to use callouts just for the sake of callouts. A callout is where you put a numbered bubble with an arrow pointing to some part.

For complicated pictures, show the entire item and then a close-up view of what you're talking about, linked to it but blown up and pulled out to the side that shows where it came from. The big picture acts as a context setter. Here's the motor and this is where this thing is found on the motor but you can't see it well enough for me to describe it, so let me pull it over here where you can really see what I want you to see. Does that make sense? If you just show that close up without showing them where it is on the motor or where it is in the body or wherever, they're going to spend an inordinate amount of time trying to find it, so this thing acts as a locator.

Use two columns for sub-steps. This allows two levels. I normally am really strict about not trying to make job aids serve more than one audience. The more generic we tend to make our job aids, the more generic we tend to make our instruction, the less useful they are for the user, the less likely they are to be used on the job, the less likely it will transfer.

So I'm a real stickler about that, but here is an exception. If you've got novices and experts, both are going to use the same job aid, column one for the experts, high-level description of what to do, step one do this, step two, do this, step three, do this. An expert says, "no problem, I've been doing this for years, I can handle it, all I have to do is remember the order it came in." The novice user is going to say, "oh, I don't know how to do that!" Well, go over to column two where I've got A,B,C,D. Here's how to do step one. A,B,C, that make sense? So that job aid now is useful for two people.

*Job Aids Symposium*  
*May 24, 2001*  
*International Trade Center, Washington DC*  
*Tony Moore: How to Develop a Job Aid*  
*Partially Edited Transcript*

Use a second column for examples. We talked about that, use it for notes, or leave it blank in some cases, for the performers to take notes right on the job aid. As experience teaches them something about that step, they may want to add it and then you, as the job aid developer, periodically go around and say, "let me look at your job aid." You'll find incredible suggestions for improving just by looking at what they've written on them.

Just real quick, what format would you use to improve this path? Keep in mind what I just went over. What was that? I've got some confidence here. Obviously I've left some steps out but I'm trying to drive the idea home, my job is only to start and stop the machine.

Why decision tables? Well, read that. How useful is that? Think of a page like that. Or would you rather see it this way? The problem with embedding decisions in text is now you are forcing short-term memory. You have to read the entire paragraph and hold onto these bits of information in short-term memory. Time and memory are working against you, so the more things you've got buried in this decision, the more difficult it is for them to keep it all in here. It's very difficult to read when you put things in prose.

But look at this! I don't have to read this whole thing! Once people have learned how to use a job aid, they go down until they find what's important and they go over and find the action. They have not read this, they have not read this, they have not read that.

Now, a corollary rule is, try and find some way to order this column. Job aids slow behavior? So let's find a way to order it so I can get them in and out as fast as possible. If I know that some things occur more frequently than others, say 80 percent of the time, it's going to be this. Put it at the top. Don't put it at the bottom and make them read 80 percent of the time, through the whole thing.

Make sense? In other cases you might want to order it alphabetically. If you've got a huge list, order it alphabetically and they can say: "well, that's near the end of the alphabet. I'll just zing right down and start reading near the bottom." If you think about it you can probably come up with several very clever ways of making this thing more useful.

Guidelines for writing decision tables. Put the "if" on the left, the "then" on the right, unless you're in a country that reads in the other direction or reads down. Especially for me, in a foreign country, I am so naïve in this area. Job aid testing becomes really critical for me, I think, "well, everybody does it this way." No, it may not be true, so you need to have your target audience help you in this way.

Now, not everybody—you're accomplished performer. Make one person responsible for it, don't do it by committee. Committees extend the length of a project by 10 to 20 percent. The more sign-offs you have, it extends the life of the project. In the business world, that's money. I'm sorry, we can't afford it, we'll get this thing out and working on some assumptions, and then we'll let you brilliant people come in and do the validation testing where you gather all the tons of data. If we find out we made a mistake, we'll beat our breasts, say mea culpa three times and change it. If it's wrong we change it, performance is what we want, and we certainly want measurable data.

Again, when you're talking about people performance, the impact is almost immediate and it's so significant, it's going to be hard to deny. The only other thing to rule out is, were there any other factors that might become responsible for this, you know, not my job aid. My arrogance makes me want to say it's my job aid, but something else may have changed at the same time.

By the way, "if" on the left, why? We're stimulus driven. "If" is the signal they see in the real world. The response is what they do. This is what they encounter first, and then they do this, so left to right. Put what

*Job Aids Symposium*  
*May 24, 2001*  
*International Trade Center, Washington DC*  
*Tony Moore: How to Develop a Job Aid*  
*Partially Edited Transcript*

they encounter first in that order. Use “and” for intermediate conditions. Use an arrow, if you’ve got an “and” column sitting in between the “if” and the “then,” and this particular instance doesn’t make use of that. Put an arrow in that cell to draw their eye through it, kind of like “this cell intentionally left blank,” but I don’t want words, just an arrow to drive their eyes through from the “if” to the “then.”

Two or more “ifs” may lead to one “then.” If this or this, then this. So you’ve got two cells here, one cell here that covers both of those cells. An “if” should never lead directly to two or more “thens.” That’s like saying, if there is this symptom, do this or do that. I’m sorry, pick one and stick to it. If it truly doesn’t make a difference which one of those “thens,” just pick one. Don’t confuse them. You lose stimulus control of the subject when you do that. Just say if “this,” we’ve arbitrarily decided to do “that”. My expert, who has gotten much better performance data than you, does it this way, so that’s the way you’re going to start doing it. I know you did it the other way, but we’re going to start doing it this way now, because when your numbers get up there, then you can start telling me how to design the job.

There is a trick I use if my expert says it really doesn’t make a difference. It is not my job to make my clients’ decisions for them. I make recommendations; it’s their job to make a decision. If my subject matter expert tells me it truly makes no difference, what I am going to do is say, “You pick one and then I want you to initial or sign that you said it’s okay to just have this one, that it will work in every case.” I’ll write this out and you sign it. Please.

You know that signing your name to a statement is a big deal. It’s real easy for people to just agree to something and not really give it the thought it deserves. However, when they have to put their name on it, all of a sudden accountability is tied to them and not to you. Oooh, man, if that’s wrong, that could come back to haunt me, let me think about this. What you might find out is you really don’t have an “if” with two possibilities, you’ve got a discrimination that you missed. If “this”, do the first “then”, but if “this” varies by this, under these other circumstances that are different, but it’s such a finite difference I didn’t really realize it, then do “that”. Now you’ve discovered you’ve really got a decision between two things with two different results. And it does make a difference, which “then” is tied to which “if.”

How to sell job aids. Sell your boss first. Even before you go out and try and sell your client. If you’re trying to sell your client and you don’t have your boss’s support, you’re fighting a war on two fronts and you aren’t going to win that battle. You’ve got to sell your boss on the value of them, get your boss lined up behind you and supportive.

Always start from performance, not from subject matter. Subject matter is just too high a level, most people can’t make the leap from theory to real-world practice. You have to define it, how do you do this, what are the decisions, find out what those are, and really grow. You said if this, then this. Is there any other time that you might also do that? “Well, yeah, I hadn’t thought of...”

You know, normally you do this, but can you think of any time, last month or last year when you were in this situation and you did something else? “Well, yeah, actually, once.” Well, you did something else, what caused you to do something else in this same situation? “Oh, well, in that case I didn’t have this in the bin.” Oh, so if this, do that, if this, and nothing in the bin, then do that. We’ve now probed a little deeper.

You’ve got to help them think through it. Your subject matter experts are unconsciously competent, they know what they’re doing, they just don’t know how to do it. They’ve been so long, not forgotten, but it’s been buried in the subconscious and they have a real hard time pulling it out.

Start from performance. Describe the performance to be influenced to at least the step level where you can start recognizing where the discriminations and sequences and rules are. Capture cost of not improving performance. If we don’t do anything about this, what happens, how much will that cost? Is this just an irritant

*Job Aids Symposium*  
*May 24, 2001*  
*International Trade Center, Washington DC*  
*Tony Moore: How to Develop a Job Aid*  
*Partially Edited Transcript*

that you want me to take care of because it upsets you every time you see it, but it doesn't really affect the organization, it affects you personally? Well, my workload's not so bad, sure boss, okay, my workload is so irrelevant. Which one of these real projects do you want me to drop so I can pick up yours?

Determine whether the poor performance is due to a skill or knowledge deficiency. Determine whether job aids are appropriate, go through that job aid versus memory, rule out other causes or solutions to this problem, other contribution factors. Rule them out before you just say a job aid will handle it. If you can't rule them out, then include them in your solution recommendation; you need job aids and this and this. They're being rewarded for doing this other thing and as long as that reward is there, we're not going to change that behavior. We've got to remove that reward or give them a stronger reward for doing what we want. We also have to show them how with a job aid.

Part two, the sequel. Appeal to each buyer's vested interest—buyer being the performer who's going to use your job aid, that performer's supervisor, and that performer's manager. Each one of them has different needs that this job aid is going to meet. Think about how each of these people are measured, and how will this job aid impact them? With the performer, it's performer-focused—will this generally make my life easier, how it will make me appear more competent, how will it impact me personally? Find out how this job aid will help them, if you can.

The supervisor is generally measured on like department productivity, department costs, those kinds of issues. The manager is even a higher level, ROI, return on investment. Again, in PVOs, I'm not sure what you guys are measured on. Are you? I'm sorry, I don't know only because of ignorance, I have not ever worked in a PVO so I have absolutely no idea. I mean, I hope you guys are all honorable—if I walk out is the FBI going to greet me?

Focus on the benefits and the value gained. Frankly, these people are not the least bit interested in this neat technology you've just learned about job aiding. They're interested in results, they're interested in the value they're going to derive from using it, they don't care how you went about getting it. And tactfully, but forcefully, and frankly, in writing, keep the client responsible for the consequences of not using it when it's appropriate. Conversely, keep them responsible for the consequences of using it when it's not appropriate.

Wait a minute, you say, does that make any sense? Sure, they're going to spend the money in your development time, in the materials, in the dissemination, in the credibility of your organization, and if it isn't the right solution, there are not going to be any results and somebody's likely to notice. And you don't want them coming back and saying, "she designed it." No, pal, I've got the note, remember? "I told you to do this and you said no, no, no!" It's CYA, I mean we are in DC.

If you need more information, what you have seen—this is why I got real nervous when you talked about the copyrights—I have unabashedly lifted, in wholesale from Jeff Nelson's Expert OJT Workshop and from Joe Harless's Job Aid Workshop now owned by Performance Technologies Limited in Annapolis. By the way, Jeff Nelson is down in Newport News. And Joe Harless is retired and he sold it to Paul Elliott who's over here.

The Expert OJT Workshop takes you farther than what I—you just had a teaser, really. This is done, typically, in a day and a half to two days. It's more or less self-paced, all the way through. Both of these are very consistent in approach; Jeff tends to be simplified, Joe's tends to be more advanced, and Joe's takes two to three days. Both of them tend to be self-instructional. Jeff's tends to get you started and send you home. No, Jeff's a neat guy, they're both nice guys. So if you really want to take this farther, I would point you in their direction.

I wish I had time for your questions, but maybe you can get a hold of me while I'm taxiing down the runway. Was my e-mail address put on the brochure? Oh, thank you, give out the job aid, my phone number is

*Job Aids Symposium*  
*May 24, 2001*  
*International Trade Center, Washington DC*  
*Tony Moore: How to Develop a Job Aid*  
*Partially Edited Transcript*

on there if nothing else. I hope this was useful, I hope you walk out of here with some ideas that you might be able to apply.