

SIMS Medical Center – A Virtual Hospital @ STCC™
Train the Trainer Workshop | Patient Simulation Technician
Effective Teaching Guide

Introduction

The purpose of this document is to provide a guide for effective teaching. Many give the appearance of teaching, but effective teaching is backed up by a process of learning that includes documentation of success. That means, you can prove the student learned what they were expected to learn. Not an easy task even for an experienced educator. It is not possible to read this guide and become an effective teacher. What this guide does do is get you started on the right path. You are strongly urged to seek formal training in effective teaching. In addition to formal training in education you should attend not only technical conferences but also those dealing specifically with teaching.

This guide is designed to be used with the Patient Simulation Technician manual written for SIMS Medical Center™. Topics to be covered are; characteristics of “good” teachers, finding what the student needs to learn, helping the student understand what is to be learned, knowing how the student has learned, helping the student realize progress and basic teaching methods.

Characteristics of a Good Teacher

Everyone is familiar with the old stereotype of the brilliant, but absent minded college professor who needs help to find his way to the classroom. You have undoubtedly sat through a class where the lecture was so boring that you had to pinch yourself to stay awake. If you think back to all the things that made you feel lost during a class and then look at the opposite, you begin to see what a good teacher might “look like.”

A few of the commonly mentioned characteristics of good teachers are:

- *knows the subject well*
 - At a level beyond that needed by the student
- *well organized*

SIMS Medical Center – A Virtual Hospital @ STCC™
Train the Trainer Workshop | Patient Simulation Technician
Effective Teaching Guide

Know the goal and how you are to get the student there.

(Lesson Plan)

- *creative and interesting*
 - The attention span of an adult is not very long. You must find a way to get and keep the learner engaged.
- *uses different approaches to address different learning styles*
 - Not everyone learns the same way. It is your job to find the best way for each student to learn.
 - Give time for the learner to think about an answer
 - Guide students to discover the “correct” answer
- *respectful and supportive*
 - You cannot expect to receive respect if you do not give respect.
 - Be supportive of your students with words of encouragement.
- *life long learners*
 - Simulation is changing rapidly and you need to “keep up.”
 - Visit other centers
 - Read the journals and attend regional and national meetings
- *interactive, engaging students in the learning process*
 - Keep the learning lively with your own energy.
 - Stand while you teach change sides of the room
 - Give the students something to do, not just listen to.
- *knows their “audience”*
 - Everyone shows engagement differently. A student who looks half asleep may be processing what you just said.
 - Watch for note taking
 - Do they follow you when you move and look at modes, images, etc.?
 - Are they eager to try to solve a problem / participate?

The limited list of characteristics of a good teacher provides goals that you, the instructor should embrace. Even though the list is fairly descriptive,

SIMS Medical Center – A Virtual Hospital @ STCC™
Train the Trainer Workshop | Patient Simulation Technician
Effective Teaching Guide

if someone were to use these characteristics to evaluate your performance as a teacher there might be some confusion about what “well organized” really means. Just how organized are you to be for a “good” evaluation? You will see later just how important it is to clarify each goal so as to minimize the confusion of expected outcomes. All of the characteristics listed of a good teacher are important, but “well organized” deserves additional mention. It is amazing how smart an instructor can be when well organized.

Getting Organized: The lesson Plan

Rarely does an effective instructor walk into the classroom without having thought about what was to be covered that day and how it was to be accomplished. Sometimes it is easy to determine what will be done and how. Other times, though, such as in technical education, keeping all the details in your head just does not work well. You should have a plan for the day’s lesson whether formal, following a template, or informal as hand written notes as you think about the lesson. You will develop you own method over time, but below are some of the most commonly listed items in a typical lesson plan. The whole purpose of the lesson plan is to provide a process where you can get and keep organized.

Components

- *introduction with link back to previous lesson / explain plan for the day*
 - o Referring back to a previous lesson helps students to form the “big picture” of what they are to learn. (Previous information “fit” with overall goal.)
 - o Laying out the day’s plan helps students to focus.
- *Objective(s) to be covered*
 - o Reminding students of the objective (especially if the objective is covered in multiple lessons) establishes the goal for the day.
- *Timeline for class including breaks*
 - o Establishes time limit on day / specific activities.
 - o Helps you determine how much material to cover in the lesson.

SIMS Medical Center – A Virtual Hospital @ STCC™
Train the Trainer Workshop | Patient Simulation Technician
Effective Teaching Guide

- *Activities*
 - o These are things you want to do or you want the students to do.
- *Activity equipment / supplies*
 - o All the “stuff” you will need for the activities
- *Additional materials needed / handouts*
 - o Notes, directions, tests, articles, etc.
- *Audio Visual equipment*
 - o In addition to the equipment needed for activities, such as computer with video projector, screen, document camera, etc. (Be sure to test this equipment BEFORE you have students in the room. Always have a backup plan when you use AV. Bulbs burn out, computers die and software gets ignored for no apparent reason.)
- *Review / evaluation*
 - o It is absolutely critical to have a short review of what was covered for the lesson. This is when both you and the student form an idea about how much actual learning is taking place. Be sure to allow time for clarifying questions.
- *Assignments*
 - o Keep the simple and directly related to the objectives and competencies.
 - o Provides some evidence that learning is taking place.
- *Link to next class / next steps*
 - o Helps prepare the student for the next lesson.
 - o Indicates that previous and future lessons are heading toward a common goal (the Big Picture.)
 - o Forces the instructor to think ahead and remain goal focused.

Whatever method you use to organize for a class will work just fine. Please though, do lesson plans if only on the back of a napkin. It is better, in my opinion, to reschedule a class than to go in unprepared. To not be organized is a waste of your and the student’s time.

SIMS Medical Center – A Virtual Hospital @ STCC™
Train the Trainer Workshop | Patient Simulation Technician
Effective Teaching Guide

Effective teaching is a tough job.

So far we have talked about some of the characteristics of a good teacher and how a teacher might plan for individual lessons. It is not possible to plan teaching unless you first know what the student is to learn. From that point, you determine the method of teaching. If you have never taught before, it will take several years to feel comfortable. Even then, you will have days when you are pretty sure you should quit and become a bartender in Aruba. Do not fret. If you can answer these four questions, you have at least a good start on becoming an educator. This guide is directed at technical learning in general and specifically, patient simulation.

1. How do you, as the teacher, know what the student is to learn?

2. How does the student know what they are to learn?

3. How do you, as the teacher, know when the student has learned?

4. How does the student know when they have learned?

Finding out what the student is to learn

It is probably safe to say that everyone has participated in some variety of formal education. Usually, at the beginning of the class the teacher will hand the student a syllabus or outline of what is expected of the student for that particular class. The syllabus or outline of expectations should let the student know what they are going to learn, some idea of how they will learn the material and how they will be evaluated (graded.) The purpose of the syllabus or outline is to provide direction to the student, but also to the teacher.

You will need to do the same for training people to be patient simulation technicians (sometimes also called environmental control specialist.) Unlike many topics in education, patient simulation is very new

SIMS Medical Center – A Virtual Hospital @ STCC™
Train the Trainer Workshop | Patient Simulation Technician
Effective Teaching Guide

and still in early formative stages. There is no readily available, published, standard syllabus for this job. How do you then, now as the teacher, know what to expect of your student?

You are fortunate in that you are a sim tech and should be able to put to paper the major components of your job. Pull your own job description and use it as a guide for developing a list of expectations for your students. This may be an opportunity to expand or update your job description to more closely reflect what you actually do as compared to when you were first hired. Since you are part of a state wide alliance, it would be a very good idea to compare many job descriptions, looking for common requirements.

If you must start from a blank paper, you can perform a task analysis. The task analysis is performed by watching a person doing their work. A detailed list of performances is kept and later reviewed to create categories of duties. From the duty list comes the job description. Years ago, I had to do a task analysis for an entry level diagnostic medical sonographer. The results were surprising in that the list of duties was considerably longer and at a higher level than the administration had previously thought. A new job description was created along with a different salary scale. I suspect that a task analysis or at least an in depth review of the patient simulation technician's job should be performed every couple of years. As the field grows, so should the job description and hopefully the pay.

For now, you can use the list of *sample duties* under the section "What does a simulation technician do?" in the SIMS Medical manual. They are listed here for your convenience:

- Demonstrate understanding of a variety of patient simulators by using them in a range of clinical situations and by performing maintenance on them.
- Demonstrate ability to troubleshoot hardware, software and audio-visual problems.
- Use audio-visual equipment to chronicle simulation events and for debriefing purposes.

SIMS Medical Center – A Virtual Hospital @ STCC™
Train the Trainer Workshop | Patient Simulation Technician
Effective Teaching Guide

- Use an environmental checklist necessary for managing patient simulation events.
- Develop a plan for managing resources necessary for implementation of patient simulation events.
- Implement policies and procedures necessary for managing a patient simulation center.

As you look at this list, you should be getting some ideas about how to “flesh out” each example. Notice the words used at the beginning of each example. “Demonstrate”, “use”, “develop”, and “implement” are used to indicate what the person is to do. The word “demonstrate” is not terribly clear to some, but look later in the sentence and you will see very clearly that the student must use certain items, or troubleshoot a list of items. Words used in job duties should be carefully selected so that anyone reading the duty will know what has to be done. You can use the list of job duties as goals from which to develop objectives and competencies. There will be more on goals later. We will also explore how a well written plan will make it much easier for you to decide how you will know when the student has learned.

Helping the student know what they are to learn

It would seem so simple, just hand the student the list of job duties and everyone should know exactly what to do. In reality, finding a way to make sure the student understands what is to be done is considerably more difficult. Let’s look at the example we used for a simple task analysis while looking at how a cup of coffee was made. As you remember, there were many questions that were raised as we looked closely at each step of the process. If your group had many questions imagine the confusion from a student who has never before even seen coffee made at home, let alone at our fictional company.

Also remember, that there were some steps that we were not concerned as much about as others. Holding our imaginary employee to the

SIMS Medical Center – A Virtual Hospital @ STCC™
Train the Trainer Workshop | Patient Simulation Technician
Effective Teaching Guide

“company standard” for making coffee would have been unfair and inefficient if the student were not aware of and understood ahead of time, the standards for each step. It became obvious to you that there had to be clear language used for the student to know what they had to learn and do.

Here are some of the questions raised when the job duty was “Make a cup of coffee.”

You want just one cup of coffee?

What type of coffee: regular, decafe, espresso, flavored or brand?

What type and size filters have to be used?

What type of coffee maker?

What grind of beans should be used?

The list could have gone on even longer, but you get the idea. Just telling a student to perform some particular task simply raises a multitude of questions. As the teacher, you are to think ahead of time about those questions and be able to help the student find the right answers. At the very least, to help the student know what question they should ask to clarify what they need to do to perform the task requested.

To carry this one step forward, look at the simple request to have a new sim tech provide real-time voice communications for a Laerdal Vital-Sim Mega-Code Kelly. You, as the instructor, want the student to “hook up” the microphone. Bear in mind that your student has never seen this particular patient simulator. How will you teach the student this task? Walk through the procedure yourself, gathering all the equipment, connectors, adaptors, cables, electronics, and then actually perform the task. As you go along record each step or have someone else do that for you. If the person recording for you does not know the task, they will most likely ask very good questions about the process. Listen to those questions. Think about the decisions you are making. For instance, you have done this about a bazillion times, and you know that this particular set up will require an audio adapter for the voice input of the link box. How did you know that? When did you find that out and how did you “reason out” a solution? The more you think about

SIMS Medical Center – A Virtual Hospital @ STCC™
Train the Trainer Workshop | Patient Simulation Technician
Effective Teaching Guide

how you learned this particular task and all the questions you raised, the more likely you will be able to explain to your student what is expected and how to meet those expectations.

During this process, you may decide that you want the student to encounter the “missing adapter” issue and demonstrate to you problem solving skills. You may decide instead, that problem solving skills is not so important, but rather you want the student to simply remember that a particular adapter will be needed. While having the student simply remember about the need for the adapter would appear an easier route to take, it may not serve the student well in the future. In the grand scheme of learning, it would seem better to have the student learn and demonstrate problem solving skills. Simulation is new and will surely change pretty dramatically in the near future. Sim techs will need to be able to “think on their feet” and know how to adapt to an ever changing list of tasks.

In your previous encounters with formal education, you have surely been presented with a syllabus or at least an outline of topics to be covered during a course. Unlike an outline of topics, a syllabus describes the content, how it will be presented, what the student is expected to do, and how and when the student will be evaluated. A well constructed syllabus is very useful to both the student and the instructor. In the next section, we will introduce key components of one type of syllabus. You will see how clear language allows both you and the student understand what is expected and when you accomplish the task to satisfaction.

How you, as the instructor knows when the student has learned.

You have all had to take formal exams. Sometimes they are nasty things with big blanks on a huge sheet of paper or what seems like an endless list of choices for answers, none of which look familiar to you. That would be a formal method of evaluating a student’s progress and in reality, when well written, can be of great use. Most of the time in training someone to be a good sim tech, you will be able to use informal evaluation methods. A good

SIMS Medical Center – A Virtual Hospital @ STCC™
Train the Trainer Workshop | Patient Simulation Technician
Effective Teaching Guide

possibility is that you will develop a check list of things you want the student to do so you feel as though you can prove progress. As the student learns and demonstrates skills, you may literally check off that skill, indicating mastery. To get to that simple check off list, you need to look carefully at what you expect the student to be able to do. Go back to the list of job duties for the budding sim tech (listed in the front section of the SIMS Medical Center™ Manual) and look at just one duty, listed below.

- Use audio-visual equipment to chronicle simulation events and for debriefing purposes.

Upon first glance the statement may seem sufficient, but it does not state how to teach or evaluate the student. It does a pretty good job of telling you what the student must be able to do in general, but you now need some language that will state how the student will demonstrate to you that he/she can perform this particular duty. As you look at what must be demonstrated, you will discover evaluation methods (proof of success.)

Let's break up this duty statement into two parts. Part 1 is "use audio-visual equipment to chronicle simulation events, and Part 2 "use audio-visual equipment for debriefing purposes." Note that even though Parts 1 and 2 both use audio-visual (AV) equipment, it is used for two different purposes. As an example, debriefing may be recorded in a space separate from patient simulation and might be captured by way of a single camera with a built-in microphone or with a separate audio system. The camera may be "locked down" (fixed) with perhaps a wide angle lens. Recording simulation events may take multiple cameras (some of which may need to be steered); special effects generator, multiple monitors, and a separate "parallel" multiple input audio system. The simulation may be "on the go" requiring the use of a hand held "camcorder" with an extension microphone or wireless system for the audio component.

Which of these tasks do you expect your student to be able to demonstrate to your satisfaction? It may be all of them and if so, you need to decide which task is the simplest, have the student master that task, then

SIMS Medical Center – A Virtual Hospital @ STCC™
Train the Trainer Workshop | Patient Simulation Technician
Effective Teaching Guide

move on to a more difficult task. Let's say you have a multiple camera system with a separate audio system for recording patient events. A good way for a student to begin learning how to use this type of system is to perform camera switching. This is a useful competency that can make a big difference in capturing all the action. It will allow the student to get more comfortable with the environment while you are there to provide direction. Once you feel that the student can perform switching of the cameras as to include all the action by students and patients with NO assistance, then add recording, or maybe sound levels to the routine. You get the idea. Do not overwhelm your student with too many competencies at one time. Add new competencies as the student demonstrates ability to perform previous competencies.

So, how will you as the instructor, know when the student has learned these tasks? You will know because you will have specified the task and the performance level required. Remember the statement from above "...the student can perform switching of the cameras as to include all the action by students and patients with NO assistance." The task was "to perform switching of the cameras." The performance level is "to include all the action by students and patients with NO assistance." Think about what would happen if you did not include a performance level statement. The student will switch the cameras, but only captures images of the action about half the time. Not good enough, but you need to say that ahead of time for both you and the student. If capturing only half of the action is just fine by you, say it. Clear expectations are essential to effective teaching.

The statement "*The student will be able to use audio-visual equipment to chronicle simulation events,*" is an objective. It clearly states what the student will be able to do after your wonderful teaching. You now know there are multiple tasks that the student must demonstrate to your satisfaction before you believe that the student is actually able to use audio-visual equipment for simulation events. Just one of those tasks we have discussed, is "...the student will perform switching of the cameras as to include all the action by

SIMS Medical Center – A Virtual Hospital @ STCC™
Train the Trainer Workshop | Patient Simulation Technician
Effective Teaching Guide

students and patients with NO assistance.” This is an example of a *competency that states what the student will have to demonstrate to you, the instructor*. Note that the level of competency is stated clearly, “with NO assistance.” You may also want to include a time factor. For instance, you may want part of your standard to include how much time will be allowed for the performance of a particular competency. It is up to you to determine if a new sim tech can spend an hour connecting say, a wireless microphone set to a patient versus ten to fifteen minutes. Just be careful about getting too “snug” with time factors. Experience will make everything go faster.

Every objective has at least two competencies. Think of a competency as one step toward an objective. Each competency mastered will put the student one step closer to the objective. A competency not mastered is a “miss-step” and the student will not have all the skills needed to reach the objective. Imagine an airline pilot that can perform all competencies to land a specific plane except one....deployment of wing mounted air brakes. Even if there are other methods of slowing the plane, not being competent in this particular method will eventually cause a problem.

By now you are wondering why we just do not provide you with the objectives and competencies for a simulation technician. We cannot do that because your needs will be different from other simulation center’s needs. The equipment you use, including patient simulators, may not be the same or used for the same purposes. You know from earlier in the text that you must create your own job description and then develop objectives and competencies that make sense to you.

Here are a few examples of how to determine what type of evaluation method you might use.

- Use an environmental checklist necessary for managing patient simulation events.
The statement does not ask the student to develop the check list, just use one. That means you have to provide the check list and have the student actually use it for managing patient simulation. You will need to show the student how to use the checklist and the “proper” method for its use. Explain what “proper method” means to you and to what standard the

SIMS Medical Center – A Virtual Hospital @ STCC™
Train the Trainer Workshop | Patient Simulation Technician
Effective Teaching Guide

student will be held for a “pass.” See the environment check list provided in the appendix of the SIMS Medical Center™ Manual.

- Develop a plan for managing resources necessary for implementation of patient simulation events.
This time the student does have to develop something...a plan for managing resources. This is a very different task than the one described above. It will require critical thinking to a higher degree. The statement does not say what the limitations are, such as “develop an Excel based plan for.....” If you student shows up with a chalk board that works, you have to congratulate them on a job well done. Do you want them to actually manage resources, because this statement does not say that resources have to be managed? You cannot hold a student to an unspoken standard. Make your expectations very, very clear.
- Implement policies and procedures necessary for managing a patient simulation center.
You got this I bet. Is the student expected to develop “policies and procedures or just implement them?”

The syllabus is your overall educational plan for a particular course or segment of your training workshop. You share this with the student so that everyone knows what is expected. A good syllabus will list the objectives, competencies, evaluation process (how the student knows they “passed) and related materials or equipment the student must provide. The syllabus should also provide a time line for assignments, evaluations, and last day of the workshop.

Helping the student know when they have learned.

I remember holding a flashlight for my Dad while he worked on our old Chevy. It was getting dark and therefore getting harder to see what he was doing. Dad worked in silence for some time then quietly asked, “Son....can you see alright?” I said, “Yes sir, I can see just fine.” Dad’s reply was, “Well then could you hold that darn flashlight so I can see too?” I thought I was doing just fine until I finally got some feedback about my real progress. You should know that from then on I held that light so that Dad could see what he was doing. Dad did a little formative evaluation, that is, he provided feedback

SIMS Medical Center – A Virtual Hospital @ STCC™
Train the Trainer Workshop | Patient Simulation Technician
Effective Teaching Guide

while I performed a task. He let me know that just holding the light was not enough, but that it needed to provide light so he could see to do his work. I did not know that up front, but you think it would have been common sense. It is a common mistake in education to assume that someone knows your expectations. When Dad found out I did not understand what “hold the flashlight” really meant, he provided (almost) immediate feedback, a bit of a course correction if you will.

Summative evaluation, on the other hand provides feedback at the end of the task. An example for us would be to hand our neophyte sim tech a letter grade after attempting all job duties. Do not miss the opportunity to provide feedback as often as possible, but of course, not to the point of driving the student insane. Be sure to provide positive, supportive comments instead of using negative words. I know an instructor who loves to bellow out “WRONG!” when some poor student guesses the incorrect answer. Help the student to reach the correct conclusion. Give them time to think. Have patience.

How does your student finally know that all the tasks have been learned? Go back to your objectives and competencies. Are they all “checked off?” Did your student do what was expected? Ultimately, when you show them trust by letting them eventually work without assistance to complete each of the job duties both of you will realize success. Just think. One day you may actually get to take a vacation because you have trained a new sim tech to high standards.

Summary

“Effective Teaching” is a guide that provides suggestions to help you teach others how to perform patient simulation. We have talked about characteristics of good teachers and you know that the list contained here is just the beginning. Each of the following four questions have been explored and you should have formed some good ideas on how to find the answers to

SIMS Medical Center – A Virtual Hospital @ STCC™
Train the Trainer Workshop | Patient Simulation Technician
Effective Teaching Guide

each question. After each question are some memory cues that will help you organize your final thoughts on this topic.

1. How do you, as the teacher, know what the student is to learn?

Job descriptions

Task analysis

Performing the task yourself and taking notes

2. How does the student know what they are to learn?

Using a syllabus

Clear expectations

3. How do you, as the teacher, know when the student has learned?

Objectives

Competencies

Evaluation methods

4. How does the student know when they have learned?

Formative evaluation

Summative evaluation

Gentle feedback and encouragement

Working without assistance

Consider this guide along with the SIMS Medical Center™ Manual as your first set of teaching tools. As you gain experience you will create your own tool kit that meets your particular needs. Remember that teachers are always learning, can admit mistakes, listen to and learn from their students, and have a huge reserve of patience. Good luck and have fun.