

Bringing Education & Service Together (BEST) Faculty Guide - Session 6 -Teaching Procedures

Learning Objectives

By the end of this session, participating residents will be able to:

- Develop skills on teaching a learner how to perform a procedure
- Practice teaching procedures
- Identify the three phases of teaching procedures

Faculty Guides

We offer two faculty guides below, differing primarily in the amount of time available for the session.

- If you have 60 minutes for the session, please use Faculty Guide 1.
- If you can allot more than 60 minutes for the session, use Faculty Guide 2.

Faculty Guide 1: 60-minute session

Orientation and slide presentation (10 minutes total)

- Orientation to the session on teaching procedures (5 minutes)
 - Faculty introduce the session and explain the logistics of the session.
- Teaching procedures: slide presentation (5 minutes)
 - Faculty briefly review the slides.

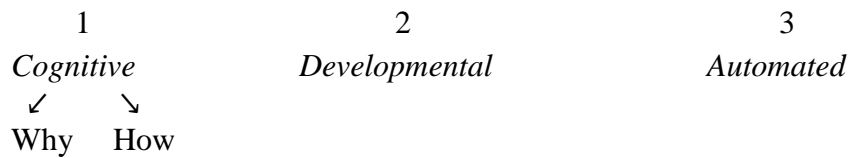
Note: Within the PowerPoint file, please select “view” and then “notes page” in order to see the talking points recommended for each slide.

Slide 1: Learning Objective

By the end of this session, participants will be able to teach a learner how to perform a procedure.

Slide 2: Approach to Teaching Procedures

Learners must go through three phases of psychomotor skills development:



Slide 3: Cognitive phase

Learners first need to understand the “why” components of the procedure:

- Why learn procedure?
- Indications
- Contraindications
- Risks/complications
- Benefits
- Alternatives

Slide 4: Cognitive phase

Since learners prefer active learning, teach through questioning:

- Has the learner done this procedure before?
- What does s/he recall about indications, risks, etc.?

Slide 5: Cognitive phase

- Then address the “how” components:
- Demonstrate procedure step by step.
- Ask learner to verbalize the steps.
- Ask for questions.

Slide 6: Developmental phase

- Next, learners need to practice.
- Have learner demonstrate procedure for you, explaining each step out loud.
- Provide guidance for each step, both verbally and physically.
- Evaluate learner's proficiency:
 - What did learner do right?
 - What could he or she do better?

Slide 7: Developmental phase

- Ask learner to self-evaluate, then give specific feedback, starting with the positive aspects of the performance.
- Does the learner have any questions, now that s/he has practiced the skills?

Slide 8: Developmental phase

- Rapid cycle deliberate practice is an effective technique of having learners cycle rapidly between deliberate practice and directed feedback.
- Dividing the procedure up into segments can make it easier to practice and learn.
 - Between segments, pause -> debrief -> rewind -> have the learner try again.

Slide 9: Automated phase

- Finally, learners begin achieving proficiency and are ready for independent performance. Observe performance again, this time with minimal interruption. You can now teach the fine points.

Slide 10: Automated phase

Encourage self-directed learning:

- What are the learner's future learning goals?
- How can the learner achieve them?
- What have you read or done that helped you learn?

Arrange for a follow-up session.

- Practice teaching procedures with feedback (35 minutes total)
 - Residents divide into pairs (5 minutes).
 - Depending upon the composition of the group, we recommend mixing up the pairs to encourage collaboration across training levels and departments.
 - The more faculty members available to facilitate the small-group component of the session, the better.
 - One faculty member assigned to supervise one or two pairs of residents is an ideal ratio.
 - The procedure cases below were used in the Bringing Education & Service Together (BEST) randomized trial, but medical educators teaching this session may feel free to substitute procedural simulations that are more relevant to their own residents.
 - For instance, a surgical residency program could substitute a different surgical procedure.
 - In any event, we recommend keeping the procedural simulations as simple as possible so as to keep the focus on teaching skills and preventing participants from becoming distracted by clinical complexities.

- Case 1: Drawing blood cultures (15 minutes total)
 - Each faculty member hands each participating resident only the instructions for his or her role, i.e., hand “Information for the resident teacher” instructions to the resident who will play the teacher first, and hand “Information for the ‘student’” to the resident who will play the student first.
 - The faculty member also provides each pair of residents with the materials needed for this case:
 - Newsprint and markers
 - Sterile gloves – need to have various sizes available
 - Blood culture bottles
 - Needles
 - Syringes
 - Povidone iodine
 - Alcohol wipes
 - Sterile gauze packets
 - To save costs, faculty may wish to look for expired supplies that would otherwise be destroyed.
 - Resident #1 of each pair teaches the procedure (10 minutes).
 - The faculty member watches resident #1 teach the procedure.
 - Limit interruptions except to call attention to time as needed.
 - Resident #2 (the “student”) fills out checklist then gives targeted feedback using checklist (5 minutes).
 - The faculty member provides one copy of the checklist to each participating resident.
 - Resident #2, who played the “student”, fills out the checklist.
 - It is helpful for resident #1 who played the teacher to start by giving self-feedback.
 - Next, the faculty member assists resident #2, who played the “student”, in going through the checklist to give constructive feedback to resident #1.

- Case 2: Incision and drainage of an abscess (15 minutes total)
 - Each faculty member hands each participating resident only the instructions for his or her role, i.e., hand “Information for the resident teacher” instructions to resident #2, who played the “student” in the first case, and hand “Information for the ‘student’” to resident #1, who played the teacher in the first case.
 - The faculty member also provides each pair of residents with the materials needed for this case:
 - Newsprint and markers
 - Sterile gloves – need to have various sizes available
 - Scalpels, #11 blade
 - Needles
 - Syringes
 - Povidone iodine
 - Alcohol wipes
 - Culture swabs
 - Iodoform gauze packing material
 - Plain sterile gauze packets
 - Protective goggles
 - Skin abscess model (e.g., <https://acpinternist.org/archives/2010/10/waxman.htm>):
 - Simulated skin suturing pad, which can be purchased from a medical supply business
 - One ounce of toothpaste squirted into a five-inch balloon and placed under a very shallow “skin” flap can be used to simulate “purulent” drainage.
 - Other techniques to create an inexpensive skin abscess model can be substituted at the discretion of the faculty.
 - To save costs, faculty may wish to look for expired supplies that would otherwise be destroyed.
 - Resident #2 of each pair teaches the procedure (10 minutes).
 - The faculty member watches resident #2 teach the procedure.
 - Limit interruptions except to call attention to time as needed.
 - Resident #1 (now the “student”) fills out checklist then gives targeted feedback using checklist (5 minutes).
 - The faculty member provides one copy of the checklist to each participating resident.

- Resident #1, who played the “student”, fills out the checklist.
- It is helpful for resident #2, who played the teacher this time, to start by giving self-feedback.
- Next, the faculty member assists resident #1, who played the “student” this time, in going through the checklist to give constructive feedback to resident #2.

Large-group summary of what was learned (5 minutes total)

Faculty Guide 2: 90-minute session

- Orientation and slide presentation (30 minutes total)
 - Orientation to the session on teaching procedures (10 minutes)
 - Faculty introduce the session and explain the logistics of the session.
 - Teaching procedures: slide presentation (20 minutes)
 - Faculty review the slides:

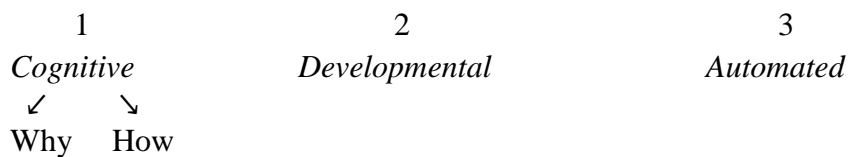
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- Next, learners need to practice.
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- Ask learner to self-evaluate, then give specific feedback, starting with the positive aspects of the performance.
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Slide 8: Developmental phase

- Rapid cycle deliberate practice is an effective technique of having learners cycle rapidly between deliberate practice and directed feedback.
- Dividing the procedure up into segments can make it easier to practice and learn.
 - Between segments, pause -> debrief -> rewind -> have the learner try again.

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Finally, learners begin achieving proficiency and are ready for independent performance. Observe performance again, this time with minimal interruption. You can now teach the fine points.

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Encourage self-directed learning:

- What are the learner's future learning goals?
- How can the learner achieve them?
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Arrange for a follow-up session.

- Practice teaching procedures with feedback (45 minutes total).
 - Residents divide into pairs (5 minutes):
 - Depending upon the composition of the group, we recommend mixing up the pairs to encourage collaboration across training levels and departments.
 - The more faculty members available to facilitate the small-group component of the session, the better.
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- In any event, we recommend keeping the procedural simulations as simple as possible so as to keep the focus on teaching skills and preventing participants from becoming distracted by clinical complexities.

- Case 1: Drawing blood cultures (20 minutes total)
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 - Next, the faculty member assists resident #2, who played the “student”, in going through the checklist to give constructive feedback to resident #1.

- Case 2: Incision and drainage of an abscess (20 minutes total)
 - Each faculty member hands each participating resident only the instructions for his or her role, i.e., hand “Information for the resident teacher” instructions to resident #2, who played the “student” in the first case, and hand “Information for the ‘student’” to resident #1, who played the teacher in the first case.
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- It is helpful for resident #2, who played the teacher this time, to start by giving self-feedback.
- Next, the faculty member assists resident #1, who played the “student” this time, in going through the checklist to give constructive feedback to resident #2.

Large-group summary of what was learned (15 minutes total)

References:

Dunnington GL, DaRosa D. *Instructor’s Guide for Teaching Residents to Teach*. Springfield, IL: Association for Surgical Education, 2000.

Edwards JC, Plauche WC, Marier RL. *Handbook of Conferences on Teaching Skills for Residents*. New Orleans: Louisiana State University, 1988.

Taras J and Everett T. Rapid cycle deliberate practice in medical education: a systematic review. [Cureus](#). 2017;19:e1180.

