Competencies, Goals, Objectives

William Raszkia
Objectives:

• Provide a framework for making goals, objectives, competencies
• Define goals, objectives, competencies and outcomes
• Compare and contrast objectives and competencies
• Define EPA (entrustable professional activities)
• Contemplate advantages of an EPA framework
Novice with no experience wants to work in a garage

Garage owner wants a new engine mechanic
Framework: alignment – all geared to the same end
Detailing?
Knowledge vs. skill?
Oil changes vs. diagnostics?

Novice with no experience wants to work in a garage

Garage owner wants a new engine mechanic

“Learning”
Assessment of performance

Demonstrations

Acquired skills, abilities, and knowledge

Competencies

Integrated learning experiences

Skills, abilities, and knowledge

Learning experiences

Developed in the learning process

Traits and characteristics

Foundation

Definitions

• Knowledge:
  • The condition of being aware of something that is acquired through training and experience

• Skill:
  • The ability to physically perform an activity or task and includes physical movement (including talking) and application of knowledge

• Ability:
  • The capacity to perform physical or mental activities that are associated with a particular task
You design a course for Novice. What should be the goal of the course?

Novice with no experience wants to work in a garage

Garage owner wants a new engine mechanic
Definition: goal

- A broad statement about the intended intent/purpose/outcome of the learning session/course
- Provides overall direction for the learning
- Achievable but not necessarily measurable or observable
- Serves as the foundation for objectives

Course X is designed to give the student a broad exposure to all aspect of auto mechanics
Course X will prepare the student to student to successfully apply for a job as an auto mechanic
Course X will prepare the student for a career in small engine repair
Definitions: objectives

• Statement that clearly expresses what the participant will be able to do at the completion of the course or program

• “SMART”
  • Specific
  • Identifies what a participant is intended to be able to do once the learning has occurred
  • Contains verbs that are observable and measurable
Writing objectives

• By the end of the session the participant will be able to:
  • (verb) (outcome of interest)
  • Knowledge
  • Skills
  • Attitudes
Task: Novice has enrolled in a course to prepare her for a new career.

- Course Goal: Course X will prepare the student to successfully apply for a job as an auto mechanic
- Her first learning session is on changing engine oil
- Write three objectives for the first learning session
Possible objectives

• By the end of this session, the participant will be able to:
  • Locate and remove the drain plug
  • Determine the appropriate oil weight to use
  • Add the appropriate amount of oil
  • Change the oil filter
  • Explain to a customer what they have done
  • Compare and contrast fully synthetic vs semi synthetic oil

*Are these aligned with the goal of the course?*
Immediately after the session, Novice is tested. Here are the three test items:

• Question 1:
  • List two advantages of fully synthetic oil over semi-synthetic oil

• Question 2:
  • Name three automobile manufacturers that only recommend Mobil Oil products

• Test item 3:
  • In this engine, show me where the drain plug is

Are these appropriate?
Assessment

Objective
• Compare and contrast fully synthetic vs semi synthetic oil
• Locate and remove the drain plug
• ?

Assessment
• List two advantages of fully synthetic oil over semi-synthetic oil
• In this engine, show me where the drain plug is
• Name three automobile manufacturers that only recommend Mobil Oil products
Assessment

• All assessment HAS to be linked to objectives
You decide that you need to change the oil on your 8 year old car. When you go the service station do you…?

• Ask if the mechanic can
  • Locate and remove the drain plug
  • Determine the appropriate oil weight to use
  • Add the appropriate amount of oil
  • Change the oil filter
  • Explain to a customer what they have done
  • Compare and contrast fully synthetic vs semi synthetic oil

• Ask them to change the oil and give advice as to whether this is a good time to use semi-synthetic oil for your high mileage car?
Definition: competencies:

• What an individual needs to be able to do to successfully perform their job or task
  • Bundles of essential knowledge, skills and abilities required to achieve an acceptable level of performance
  • More general than objectives
  • Still observable and measurable
Competency

• The student will be able correctly to change the engine oil and oil filter (in less than 20 minutes)

• The objectives related to the competency
  • Locate and remove the drain plug
  • Determine the appropriate oil weight to use
  • Add the appropriate amount of oil
  • Change the oil filter
Competency and outcomes

• Goals: purpose
• Objectives: intended outcomes
• Competencies: learner outcomes
Medical Education Program Objectives

1. Patient Care

*Provide patient-centered care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health*

1.1 Perform medical, diagnostic, and technical procedures considered essential to enter post-graduate training

1.2 Gather essential and accurate information about patients and their conditions through history-taking, physical examination, laboratory data, imaging, and other sources

1.3 Develop and prioritize a differential diagnosis through clinical reasoning

1.4 Order and interpret appropriate laboratory tests, imaging studies, and other tests based on scientific evidence and clinical judgment

1.5 Develop and carry out management plans that are patient-centered, safe, effective, and value based

1.6 Counsel and educate patients and their families to empower them to participate in their care, engage in preventative health, and facilitate shared decision-making

1.7 Recognize a patient requiring urgent or emergent care and initiate evaluation and management

1.8 Recognize and discuss end of life and palliative care with patients and families in the appropriate clinical context

1.9 Provide appropriate referral of patients, including ensuring continuity of care throughout transitions between providers or settings, and following up on patient progress and outcomes

1.10 Provide health care services to patients, families, and communities aimed at preventing health problems or maintaining health
Complications

• Classic objective:
  • The learner will be able to take an age-appropriate history and complete an age-appropriate physical examination

Think about this objective. You are bringing your febrile, irritable, autistic child to see a first year pediatric resident on July 1. Would you want to add any additional criteria to this objective?
Complications:

- Objectives/competencies can include measurement criteria
  - How often (e.g. 90%)
  - Degree of difficulty (acute minor illness)
  - Under what conditions (emergencies)
  - Compared to whom (a standard)

- Rarely include measurement criteria in clinical medicine
  - Assessment of medical knowledge
    - 70% correct or must achieve at the 5%
  - Clinical skills examination

How else could we decide that the auto mechanic can not only change the oil but figure out the squeaking sound

OR

The brand new pediatrician will provide excellent care
Entrustable Professional Activities (EPAs)

- *Units of professional practice* that constitute what clinicians do as daily work
  - Responsibilities or tasks that must be done in patient care
  - These tasks can be small or big
- EPAs constitute the description of work and are independent of persons
  - Competencies describe persons
- EPAs can be delegated to learners if they are deemed ready for them
- The decision to transfer a responsibility to a learner has been called an entrustment decision
Why EPAs in medical school?

• Medical school graduates seemed insufficiently prepared for indirect supervision at the start of residency

• Core EPAs define a shared set of clinical activities that residents are expected to perform on day 1
  • In situations of varying complexity
What in the world does entrustable mean?

- Trustworthiness in applying knowledge, skills, and attitudes in the performance of an EPA

Can you develop any standards of trustworthiness (for students)?
We all do this explicitly or implicitly every day!
<table>
<thead>
<tr>
<th><strong>Modified Chen entrustment scale:</strong> If you were to supervise this student again in a similar situation, which of the following statements aligns with how you would assign the task?</th>
<th>Corresponding excerpt from <strong>original Chen</strong> entrustment scale (Chen et al 2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1b. “Watch me do this.”</td>
<td>1b. Not allowed to practice EPA; allowed to observe</td>
</tr>
<tr>
<td>2a. “Let’s do this together.”</td>
<td>2a. Allowed to practice EPA only under proactive, full supervision as coactivity with supervisor</td>
</tr>
<tr>
<td>2b. “I’ll watch you.”</td>
<td>2b. Allowed to practice EPA only under proactive, full supervision with supervisor in room ready to step in as needed</td>
</tr>
<tr>
<td>3a. “You go ahead, and I’ll double-check all of your findings.”</td>
<td>3a. Allowed to practice EPA only under reactive/on-demand supervision with supervisor immediately available, all findings double-checked</td>
</tr>
<tr>
<td>3b. “You go ahead, and I’ll double-check key findings.”</td>
<td>3b. Allowed to practice EPA only under reactive/on-demand supervision with supervisor immediately available, key findings double-checked</td>
</tr>
<tr>
<td>Modified Ottawa scale: In supervising this student, how much did you participate in the task?</td>
<td>Original Ottawa scale (Rekman et al 2016)</td>
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<tr>
<td><strong>1. “I did it.”</strong> Student required complete guidance or was unprepared; I had to do most of the work myself.</td>
<td>1. “I had to do.” (i.e., requires complete hands-on guidance, did not do, or was not given the opportunity to do)</td>
</tr>
<tr>
<td><strong>2. “I talked them through it.”</strong> Student was able to perform some tasks but required repeated directions.</td>
<td>2. “I had to talk them through.” (i.e., able to perform tasks but requires constant direction)</td>
</tr>
<tr>
<td><strong>3. “I directed them from time to time.”</strong> Student demonstrated some independence and only required intermittent prompting.</td>
<td>3. “I had to prompt them from time to time.” (i.e., demonstrates some independence, but requires intermittent direction)</td>
</tr>
<tr>
<td><strong>4. “I was available just in case.”</strong> Student functioned fairly independently and only needed assistance with nuances or complex situations.</td>
<td>4. “I needed to be there in the room just in case.” (i.e., independence but unaware of risks and still requires supervision for safe practice)</td>
</tr>
<tr>
<td><strong>5. (No level 5: Students are ineligible for complete independence in our systems.)</strong></td>
<td>5. “I did not need to be there.” (i.e., complete independence, understands risks and performs safely, practice ready)</td>
</tr>
</tbody>
</table>
How do EPAs relate to competencies

• EPA reorganizes competencies into observable units of clinical work by function
  • Each function is a subunit of work required to perform an EPA
• EPA is the whole; the competencies are the parts
  • Can monitor the parts but focus on the whole
Patient Care (PC)

Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Medical Knowledge (MK)

Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.

Interpersonal and Communication Skills (ICS)

Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals. Residents are expected to:

- communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds;
- communicate effectively with physicians, other health professionals, and health related agencies;
- work effectively as a member or leader of a health care team or other professional group;
- act in a consultative role to other physicians and health professionals; and,
- maintain comprehensive, timely, and legible medical records, if applicable.
EPA 1: Gather a History and Perform a Physical Examination

### Key Functions with Related Competencies

<table>
<thead>
<tr>
<th>Key Functions</th>
<th>Related Competencies</th>
</tr>
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<tbody>
<tr>
<td>Gather a history and perform a physical exam</td>
<td></td>
</tr>
<tr>
<td>Demonstrate patient-centered interview skills</td>
<td>ICS1 ICS7 P1 P3 P6</td>
</tr>
<tr>
<td>Demonstrate clinical reasoning in gathering focused information relevant to a patient's care</td>
<td>KPI</td>
</tr>
<tr>
<td>Perform a clinically relevant, appropriately thorough physical exam pertinent to the setting and purpose of the patient visit</td>
<td>PC2</td>
</tr>
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### Behaviors Requires Corrective Response

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<tr>
<th>Key Functions</th>
<th>Behaviors Requires Corrective Response</th>
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<tbody>
<tr>
<td>Gather a complete and accurate history in an organized fashion</td>
<td>Obtain a complete and accurate historical data</td>
</tr>
<tr>
<td>PC2</td>
<td>Does not collect accurate historical data</td>
</tr>
<tr>
<td>Demonstrate patient-centered interview skills</td>
<td>Relies exclusively on secondary sources or documentation of others</td>
</tr>
<tr>
<td>ICS1 ICS7 P1 P3 P6</td>
<td>Is disrespectful in interactions with patients</td>
</tr>
<tr>
<td>Demonstrate clinical reasoning in gathering focused information relevant to a patient's care</td>
<td>Disregards patient privacy and autonomy</td>
</tr>
<tr>
<td>KPI</td>
<td>Fails to recognize patient's central problem</td>
</tr>
<tr>
<td>Perform a clinically relevant, appropriately thorough physical exam pertinent to the setting and purpose of the patient visit</td>
<td>Does not consider patient's privacy and comfort during examination</td>
</tr>
<tr>
<td>PC2</td>
<td>Incorrectly performs basic physical exam maneuvers</td>
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### Expected Behaviors for an Entrustable Learner

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<th>Behaviors Requires Corrective Response</th>
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<tbody>
<tr>
<td>Gather a complete and accurate history in an organized fashion</td>
<td>Communicates unidirectionally</td>
</tr>
<tr>
<td>PC2</td>
<td>Does not respond to patient verbal and nonverbal cues</td>
</tr>
<tr>
<td>Demonstrate patient-centered interview skills</td>
<td>May generate based on age, gender, culture, race, religion, disabilities, and/or sexual orientation</td>
</tr>
<tr>
<td>ICS1 ICS7 P1 P3 P6</td>
<td>Does not consistently consider patient privacy and autonomy</td>
</tr>
<tr>
<td>Demonstrate clinical reasoning in gathering focused information relevant to a patient's care</td>
<td>Questions are not guided by the evidence and data collected</td>
</tr>
<tr>
<td>KPI</td>
<td>Does not prioritize or filter information</td>
</tr>
<tr>
<td>Perform a clinically relevant, appropriately thorough physical exam pertinent to the setting and purpose of the patient visit</td>
<td>Questions reflect a narrow differential diagnosis</td>
</tr>
<tr>
<td>PC2</td>
<td>Does not consider patient's privacy and comfort during examination</td>
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### Developing Behaviors

- Uses a logical progression of questioning
- Questions are prioritized and not excessive
- Learner may be at different levels within a row

- Communicates unidirectionally
- Does not respond to patient verbal and nonverbal cues
- May generate based on age, gender, culture, race, religion, disabilities, and/or sexual orientation
- Does not consistently consider patient privacy and autonomy
- Questions are not guided by the evidence and data collected
- Does not prioritize or filter information
- Questions reflect a narrow differential diagnosis
- Does not consider patient's privacy and comfort during examination
- Incorrectly performs basic physical exam maneuvers

- Obtains a complete and accurate history in an organized fashion
- Seeks secondary sources of information when appropriate (e.g., family, primary care physician, living facility, pharmacy)
- Adapts to different care settings and encounters
- Communicates unidirectionally
- Does not respond to patient verbal and nonverbal cues
- May generate based on age, gender, culture, race, religion, disabilities, and/or sexual orientation
- Does not consistently consider patient privacy and autonomy
- Questions are not guided by the evidence and data collected
- Does not prioritize or filter information
- Questions reflect a narrow differential diagnosis
- Does not consider patient's privacy and comfort during examination
- Incorrectly performs basic physical exam maneuvers

- Demonstrates effective communication skills, including silence, open-ended questions, body language, listening, and uses jargon
- Anticipates and interprets patient's emotions
- Incorporates responses appropriate to age, gender, culture, race, religion, disabilities and/or sexual orientation
- Performs basic exam maneuvers correctly
- Does not perform exam in an organized fashion
- Relies on head-to-toe examination
- Misses key findings

- Performs an accurate exam in a logical and fluid sequence
- Uses the exam to explore and prioritize the working differential diagnosis
- Can identify and describe normal and abnormal findings
1. PATIENT CARE (PC): Provide patient-centered care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health

1.1 Perform all medical, diagnostic, and surgical procedures considered essential for the area of practice

1.2 Gather essential and accurate information about patients and their condition through history-taking, physical examination, and the use of laboratory data, imaging, and other tests

1.3 Organize and prioritize responsibilities to provide care that is safe, effective, and efficient

1.4 Interpret laboratory data, imaging studies, and other tests required for the area of practice

1.5 Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment

1.6 Develop and carry out patient management plans

1.7 Counsel and educate patients and their families to empower them to participate in their care and enable shared decision making

1.8 Provide appropriate referral of patients, including ensuring continuity of care throughout transitions between providers or settings and following up on patient progress and outcomes

1.9 Provide health care services to patients, families, and communities aimed at preventing health problems or maintaining health

1.10 Provide appropriate role modeling

1.11 Perform supervisory responsibilities commensurate with one’s roles, abilities, and qualifications
The chart is anxiety inducing! However

• What are some potential advantages to an EPA framework?
Objectives:

• Provide a framework for making goals, objectives, competencies
• Define goals, objectives, competencies and outcomes
• Compare and contrast objectives and competencies
• Define EPA (entrustable professional activities)
• Contemplate advantages of an EPA framework