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Who, What, and Where Influences on Skill Classification

Purpose
To identify how differences in personal characteristics (who), task demands (what), and performance contexts (where) can change the way in which a skill is classified.

Background
As mentioned in lab 1.1, skill classification is a valuable tool for understanding the demands presented by various movement activities. The process of classifying a motor skill helps the practitioner explore the relevant performance demands that a learner will face. For example, knowing that open skills are those that are performed in unpredictable environments tells the practitioner that decision making will be an important part of successful performance (e.g., an important part of fielding in baseball is deciding where to throw the ball once it has been caught). Conversely, knowing that closed skills are those performed in predictable environments indicates that performance success depends on movement execution (e.g., bowling emphasizes accuracy of movement; decisions are made before the action rather than during it).

How a skill is classified depends on a variety of factors relating the characteristics of the performer, the demands of the task, and the context in which performance occurs (i.e., the *who*, *what*, and *where* introduced in chapter 1). There are several ways in which skills can be classified in order to understand the demands that are placed on a performer.

Skills can be classified based on these factors:

1. Environmental predictability ranges from *open skills* (unpredictable environment) to *closed skills* (predictable environment).

    Examples: a. Mountain biking on an unfamiliar trail is a relatively *open skill* because of the high degree of unpredictability of the environment.
    b. Cycling on a track is a relatively *closed skill* because most of the uncertainty about environmental conditions would be eliminated.
    c. Riding your bike to school is somewhere between the previous two examples because there would be some unpredictability (i.e., traffic), but not as much as in the mountain biking example.

2. Task organization: Skills can be *discrete* (readily identifiable beginning and end), *serial* (a series of discrete actions), or *continuous* (no readily identifiable beginning and end).

    Examples:
    a. Springboard diving is a *discrete skill* because it is easy to identify the beginning (i.e., the first step) and the end (i.e., the entrance into the water).
    b. Pole vaulting is a *serial skill* because it involves a sequence of actions (i.e., the approach, the pole plant, and the vault).
    c. Walking is a *continuous skill* because there is no obvious beginning or end to the step cycle (does it start when the toe is first lifted from the ground or when the heel first hits the ground?).

3. Importance of motor and cognitive elements ranges from mostly *motor* to mostly *cognitive.*

    Examples:
    a. Powerlifting is mostly *motor* because it emphasizes movement and does not require much thinking.
    b. Chess is mostly *cognitive* because the movement demands do not really determine success in the task; for example, you can play chess on a computer with voice control.
    c. Dribbling a soccer ball downfield during a game involves both *motor* (e.g., running, dribbling) and *cognitive* (e.g., deciding to pass or shoot, reading a defense) elements, as do many sports.

4. Action requirements and environmental demands range from tasks requiring neither *body transport* nor *object manipulation* performed in an *unchanging environment* to tasks requiring both *body transport* and *object manipulation* performed in a *moving environment that also changes from performance to performance*.

    Examples:
    a. Mountain biking involves body transport and object manipulation (i.e., the bike) performed in an environment that changes from performance to performance (e.g., trail to trail, or even the changing condition of the same trail).
    b. Juggling involves object manipulation but not body transport: Environment typically does not move but may change from performance to performance (e.g., inside vs. outside).
    c. See table 1.4 and lab 1.1 for additional details and examples.

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The factors that might affect skill classification were introduced in chapter 1 as three questions to ask when using a situation-based approach to understanding performance and learning scenarios:

1. *Who* is the learner? Personal characteristics that will affect performance and learning (e.g., level of experience, age, disabilities, knowledge, personality, motivation, skill level).
2. *What* are the demands of the task? Requirements imposed by the task itself that must be met for successful performance and learning (e.g., open skill, discrete skill, object manipulation).
3. *Where* and when is the task to be performed? Aspects of the environment that will affect performance and learning (e.g., rain, high humidity, indoor facility, championship playoff, moving environment).

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Instructions

For this lab, you will work individually. Your instructor might want you to share ideas with other students as you proceed through the lab, but you should answer each part based on your own thoughts and experiences. List four different activities and classify each one in terms of environmental predictability, task organization, and importance of motor and cognitive components. Pick activities that are classified differently from one another.

For the environmental predictability classification, place an X on the line that represents where you think the activity falls between open and closed.

For the task organization classification, circle the classification (discrete, serial, or continuous).

For the importance of motor and cognitive components, place an X in the box that corresponds to how important (low or high) each type of component is for performance.

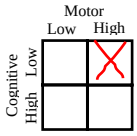
For each activity, describe one change to a *who*, *what*, or *where* factor that would result in a change to the task demands represented by one of your skill classifications and indicate what that change would be.

Example 1:

Activity: Backing a car into a parking space when cars are already parked in the adjacent spaces (experienced driver).

Open----------X----------Closed
(mark an X on the line)

Discrete Serial Continuous
(circle one)



(place an X in a box)

Rationale for classifications:

The environment is typically unchanging and predictable, so it is more closed than open. The task requires the performer to string together several discrete actions such as driving the correct distance past the spot, shifting to reverse, and backing into the spot, so it is a serial task. The task involves both motor (steering the car) and cognitive elements (keeping track of movements using mirrors), but for an experienced driver, the cognitive component would probably be fairly low.

Change to a who, what, or where factor:

Who—Assume there is a change in the driver's level of experience. For a newer driver, the task would probably have a stronger cognitive element because he or she would have to think quite a bit to use mirror images while steering the car.

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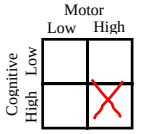
Example 2

Activity: Whitewater kayaking (moderate level of experience).

Open--X----------Closed
(mark an X on the line)

Discrete Serial Continuous
(circle one)



(place an X in a box)

Rationale for classifications:

The environment is constantly changing and probably fairly unpredictable for a person with a moderate level of experience, so it is more open than closed. The primary demand of the task is paddling, which is continuous in nature. The task involves both motor (paddling and balance) and cognitive elements (reading the water); for a person of this skill level, both motor and cognitive components would be given high importance.

Changes to a who, what, or where factor:

What and where—If the task was to practice a kayak roll in a pool (rolls are used in recovering from being capsized), then the task in the environment would become fairly predictable (i.e., it would become more of a closed skill). Because a roll has an identifiable beginning (capsizing) and end (righting oneself), the task would become discrete. The performer probably already knows how to perform the roll and would likely focus on perfecting technique, so the motor component would be high while the cognitive component would be low.

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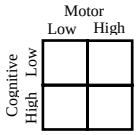
Worksheet

1. Activity:

Open----------Closed
(mark an X on the line)

Discrete Serial Continuous
(circle one)



(place an X in a box)

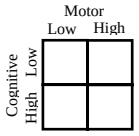
Rationale for classifications:

Changes to a who, what, or where factor:

2. Activity:

Open----------Closed
(mark an X on the line)

Discrete Serial Continuous
(circle one)



(place an X in a box)

Rationale for classifications:

Changes to a who, what, or where factor:

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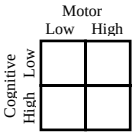
3. Activity:

Open----------Closed
(mark an X on the line)

Discrete Serial Continuous
(circle one)



(place an X in a box)

Rationale for classifications:

Changes to a who, what, or where factor: