Using Skill Classification to Identify Performance Demands

Purpose
To use the process of skill classification to understand the performance demands imposed by various tasks and performance contexts.

Background
Skill classification is a useful tool for understanding the demands presented by various movement activities. As a tool, its purpose is to help the practitioner explore the relevant performance demands that a learner will face. For example, the process of classifying a motor skill as either an open skill or a closed skill is extremely informative. Open skills are those that are performed in an unpredictable environment, whereas closed skills are those that are performed in a predictable environment. This distinction indicates whether the skill emphasizes decision making (open skills) or movement execution (closed skills), which is important information to consider when developing instructional assistance. As you read about the skill classification schemes in chapter 1 of your textbook, it will be helpful if you think about how the information you use in classifying a skill also provides you with insight into the performance demands of the skill (and how they might change in different performance contexts).

The most detailed of the classification schemes presented in chapter 1 is the extension of Gentile’s two-dimensional classification system presented in table 1.4. It is pictured in the following section, and each box is labeled with a letter and a number (e.g., B2). This table describes two dimensions of performance demands:

1. Action requirements—demands created by the task itself (columns A to D).
   *Example:* Returning a tennis serve requires the player to move into position and swing the racket.

2. Environmental demands—demands created by the environment or context in which the action takes place (rows 1 to 4).
   *Example:* Playing tennis on a grass court imposes different demands than playing on a clay court.

Both of these dimensions are further divided into two subcategories:

1. Action requirements
   a. Body transport—moving the body from one place to another.
      *Examples:* 1. Moving into position to return a tennis serve.
                   2. The approach and vault in pole vaulting.
b. Object manipulation—controlling an inanimate object.
   \textit{Example:} 1. Swinging a tennis racket.
   2. Holding the pole during the approach and placing it in the box to begin the vault in pole vaulting.

2. Environmental demands

   a. Context variability—dealing with changes in the environment from performance to performance.
      \textit{Example:} 1. Playing tennis when the temperature is 85 degrees differs from playing tennis when the temperature is 98 degrees.
      2. Pole vaulting during a regular-season meet differs from pole vaulting during the Olympics.

   b. Regulatory variability—dealing with movement of the environment or people or objects within the environment.
      \textit{Example:} 1. Tennis requires the player to interact with a moving ball.
      2. The aspects of the environment that are important during pole vaulting are all stable, so there is no regulatory variability.

\begin{table}
\centering
\begin{tabular}{|c|c|c|c|}
\hline
Environmental demands & Neither body transport nor object manipulation & Object manipulation only & Body transport only & Both body transport and object manipulation \\
\hline
Neither regulatory variability nor context variability & A1 & B1 & C1 & D1 \\
\hline
Context variability only & A2 & B2 & C2 & D2 \\
\hline
Regulatory variability only & A3 & B3 & C3 & D3 \\
\hline
Both regulatory variability and context variability & A4 & B4 & C4 & D4 \\
\hline
\end{tabular}
\end{table}
Classification of a skill is accomplished by asking four yes-or-no questions about the skill, one for each subcategory. In the following example, each question is asked and answered for the task of walking on a city sidewalk while pulling a wagon.

1. Does the skill require the performer to move from one location to another?
   Yes. Task is in column C or D (i.e., it involves body transport).

2. Does the skill require the performer to manipulate an object or objects?
   Yes. Task is in column D (i.e., it involves both body transport and object manipulation).

3. Does the environment in which the action takes place change from performance to performance?
   No. Task is in row 1 or 3 (i.e., there is no context variability).

4. Does the environment in which the action takes place move, or are people or objects moving? (Note: This does not count the performer or any objects that only the performer manipulates.)
   No. Task is in row 1 (i.e., there is neither context variability nor regulatory variability).

   Classification: D1—both body transport and object manipulation; neither context nor regulatory variability.

Here’s a second example, using the task of pouring milk onto a bowl of cereal.

5. Does the skill require the performer to move from one location to another?
   No. Task is in column A or B (i.e., it does not involve body transport).

6. Does the skill require the performer to manipulate an object or objects?
   Yes. Task is in column B (i.e., it involves object manipulation but not body transport).

7. Does the environment in which the action takes place change from performance to performance?
   No. Task is in row 1 or 3 (i.e., there is no context variability).

8. Does the environment in which the action takes place move, or are people or objects moving? (Note: This does not count the performer or any objects that only the performer manipulates.)
   No. Task is in row 1 (i.e., there is neither context variability nor regulatory variability).
Classification: B1—object manipulation only, no body transport; neither context nor regulatory variability.

It is important to note that when the answer to any of the questions is no, it does not indicate that the skill is less demanding than when the answer is yes. For example, holding a handstand (no to body transport) is considerably more challenging than walking across campus (yes to body transport). Another important consideration is that yes answers simply indicate the presence of a demand, not the extent of the demand. So, it does not, for example, distinguish between three-ball juggling and four-ball juggling (yes to object manipulation).
Lab 1.1

Instructions
For this lab, you will be working 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. Pick four different cells in table 1.4, each from a different row and column (e.g., A1, B4, C2, and D3). For each cell, think of an activity not already in the table that fits the corresponding classification, and provide a rationale for your classification. The following is an example of one activity. Please note that you might classify this example differently, which is fine as long as you provide a sound rationale. **The goal of the activity is to consider performance demands, not just to put every activity in a correct box.**

*Example:*

Activity: Pouring milk onto a bowl of cereal  
Box: **B1**

*Rationale:* This action requires object manipulation (the milk). I *assumed* that retrieving the milk from the refrigerator is not part of this action, so body transport is not involved. This action *typically* occurs in the kitchen as part of breakfast preparation. Movement in the environment is not a primary demand (although your roommate might occasionally bump into you while you are pouring), and the context is fairly stable from day to day. This means that there is neither context nor regulatory variability.
Lab 1.1

Name: ______________________

Worksheet

1. Activity: ____________________________   Box: ______
   Rationale:

2. Activity: ____________________________   Box: ______
   Rationale:

3. Activity: ____________________________   Box: ______
   Rationale:

4. Activity: ____________________________   Box: ______
   Rationale: