Gentile's Taxonomy: Developing and Assessing Appropriate Skill Progressions

JONES, JACKSON, HARTMAN, & STANEC

BOISE STATE UNIVERSITY

Pacific University Oregon

Gardner-Webb University

ST. FRANCIS XAVIER UNIVERSITY
ANTIGONISH, NOVA SCOTIA, CANADA

TAMPA 2009
Tampa Convention Center
March 31 - April 4, 2009

124th American Alliance for Health, Physical Education, Recreation and Dance National Convention & Exposition

MANY VOICES ... ONE MISSION

In partnership with Southern District AAHPERD and Florida AHPERDS

Designing Practice / Learning Environments (Adams, 1999)

- It is suggested that students should experience approximately 80% success.
- How do we create success for our students?
  - Modify skills for all levels (beginner, intermediate, advanced)
    - Extensions - inviting students to perform variations that make the skill easier or harder.
    - Challenges - giving a measurable task that focuses on mastery
    - Choices- inviting students to become more actively engaged in the learning process via self-regulation.

Gentile's Taxonomy (2000)

Every action we carry out it is a result of the complex interaction between the performer, task, and the environment

Closed Skills	Open Skills
Highly Predictable	Unpredictable
Stable Environments	Variable Environment

Gentile's Taxonomy (2000)

		Action Function			
		Body Stability		Body Transport	
Environmental Context		No Object Manipulation	Object Manipulation	No Object Manipulation	Object Manipulation
Stationary Regulatory Conditions	No Intertrial Variability	1A	1B	1C	1D
	Intertrial Variability	2A	2B	2C	2D
In-Motion Regulatory Conditions	No Intertrial Variability	3A	3B	3C	3D
	Intertrial Variability	4A	4B	4C	4D

Adapted from Magill (2007)

Gentile's Taxonomy: 4 Questions

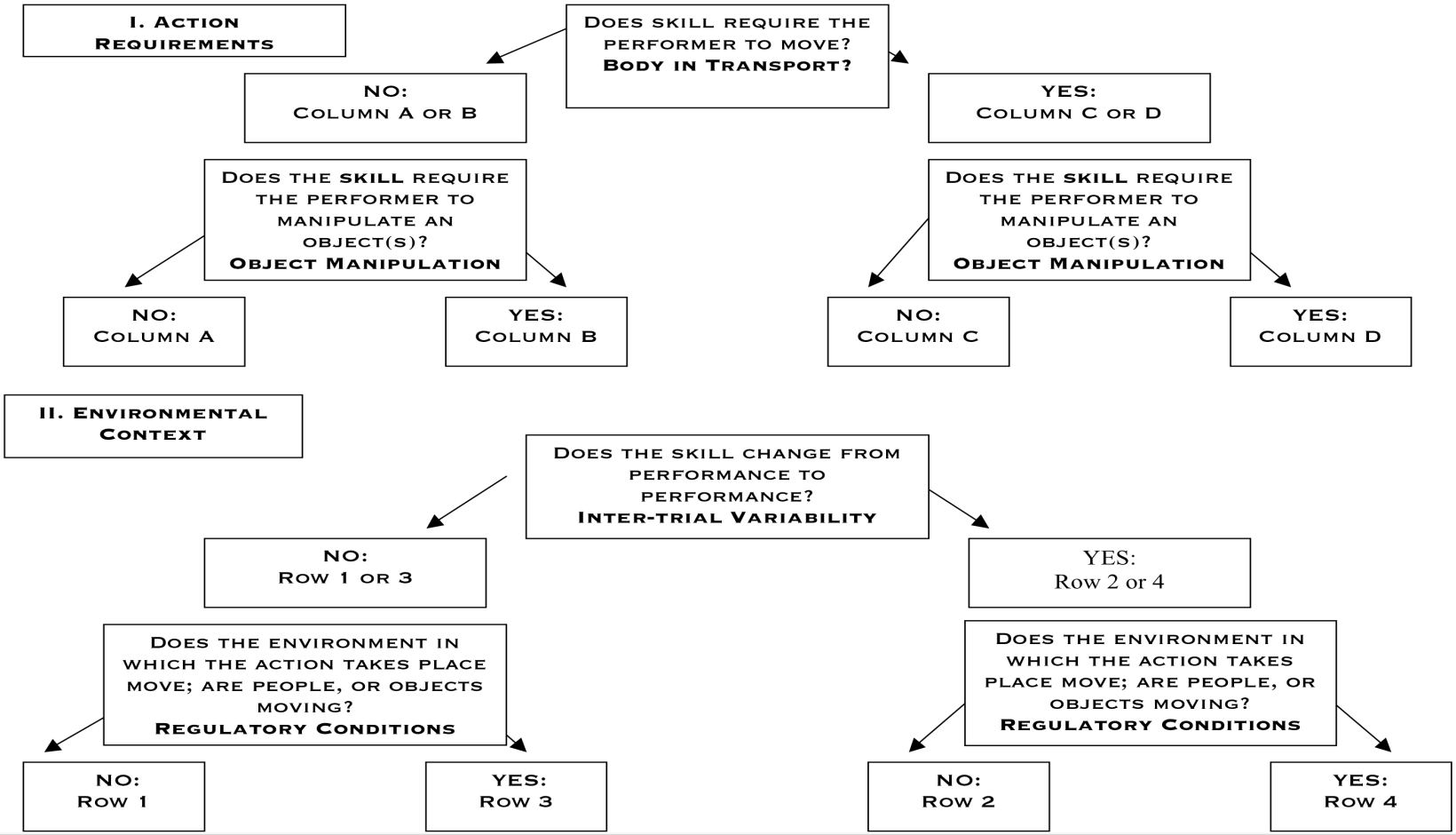
Environmental Context

1. Is the environmental context (i.e., regulatory conditions) in-motion or stationary?
2. Does the skill change from trial-to-trial (i.e., intertrial variation)?

Action Function

1. Does the performer move from one location to another while performing this skill (i.e., body transport)?
2. Does the performer manipulate an object in this task?

Gentile's Taxonomy: Flowchart



Modified from Schmidt & Wrisberg (2008)

How would you categorize….

- Juggling

		Action Function			
		Body Stability		Body Transport	
Environmental Context		No Object Manipulation	Object Manipulation	No Object Manipulation	Object Manipulation
Stationary Regulatory Conditions	No Intertrial Variability	1A	1B	1C	1D
	Intertrial Variability	2A	2B	2C	2D
In-Motion Regulatory Conditions	No Intertrial Variability	3A	3B	3C	3D
	Intertrial Variability	4A	4B	4C	4D

How would you categorize….

- Hitting a golf chip shot

		Action Function			
		Body Stability		Body Transport	
Environmental Context		No Object Manipulation	Object Manipulation	No Object Manipulation	Object Manipulation
Stationary Regulatory Conditions	No Intertrial Variability	1A	1B	1C	1D
	Intertrial Variability	2A	2B	2C	2D
In-Motion Regulatory Conditions	No Intertrial Variability	3A	3B	3C	3D
	Intertrial Variability	4A	4B	4C	4D

Basketball Lay-Up (with no defender)

		Action Function			
		Body Stability		Body Transport	
Environmental Context		No Object Manipulation	Object Manipulation	No Object Manipulation	Object Manipulation
Stationary Regulatory Conditions	No Intertrial Variability	1A	1B	1C	1D
	Intertrial Variability	2A	2B	2C	2D
In-Motion Regulatory Conditions	No Intertrial Variability	3A	3B	3C	3D
	Intertrial Variability	4A	4B	4C	4D

Basketball Lay-Up (with no defender)

		Action Function			
		Body Stability		Body Transport	
Environmental Context		No Object Manipulation	Object Manipulation	No Object Manipulation	Object Manipulation
Stationary Regulatory Conditions	No Intertrial Variability	1A	1B	1C	1D
	Intertrial Variability	2A	2B	2C	2D
In-Motion Regulatory Conditions	No Intertrial Variability	3A	3B	3C	3D
	Intertrial Variability	4A	4B	4C	4D

Football Pass (to a receiver)

		Action Function			
		Body Stability		Body Transport	
Environmental Context		No Object Manipulation	Object Manipulation	No Object Manipulation	Object Manipulation
Stationary Regulatory Conditions	No Intertrial Variability	1A	1B	1C	1D
	Intertrial Variability	2A	2B	2C	2D
In-Motion Regulatory Conditions	No Intertrial Variability	3A	3B	3C	3D
	Intertrial Variability	4A	4B	4C	4D

Football Pass (to a receiver)

		Action Function			
		Body Stability		Body Transport	
Environmental Context		No Object Manipulation	Object Manipulation	No Object Manipulation	Object Manipulation
Stationary Regulatory Conditions	No Intertrial Variability	1A	1B	1C	1D
	Intertrial Variability	2A	2B	2C	2D
In-Motion Regulatory Conditions	No Intertrial Variability	3A	3B	3C	3D
	Intertrial Variability	4A	4B	4C	4D

Volleyball Pass (off of a bump)

		Action Function			
		Body Stability		Body Transport	
Environmental Context		No Object Manipulation	Object Manipulation	No Object Manipulation	Object Manipulation
Stationary Regulatory Conditions	No Intertrial Variability	1A	1B	1C	1D
	Intertrial Variability	2A	2B	2C	2D
In-Motion Regulatory Conditions	No Intertrial Variability	3A	3B	3C	3D
	Intertrial Variability	4A	4B	4C	4D

Volleyball Pass (off of a bump)

		Action Function			
		Body Stability		Body Transport	
Environmental Context		No Object Manipulation	Object Manipulation	No Object Manipulation	Object Manipulation
Stationary Regulatory Conditions	No Intertrial Variability	1A	1B	1C	1D
	Intertrial Variability	2A	2B	2C	2D
In-Motion Regulatory Conditions	No Intertrial Variability	3A	3B	3C	3D
	Intertrial Variability	4A	4B	4C	4D

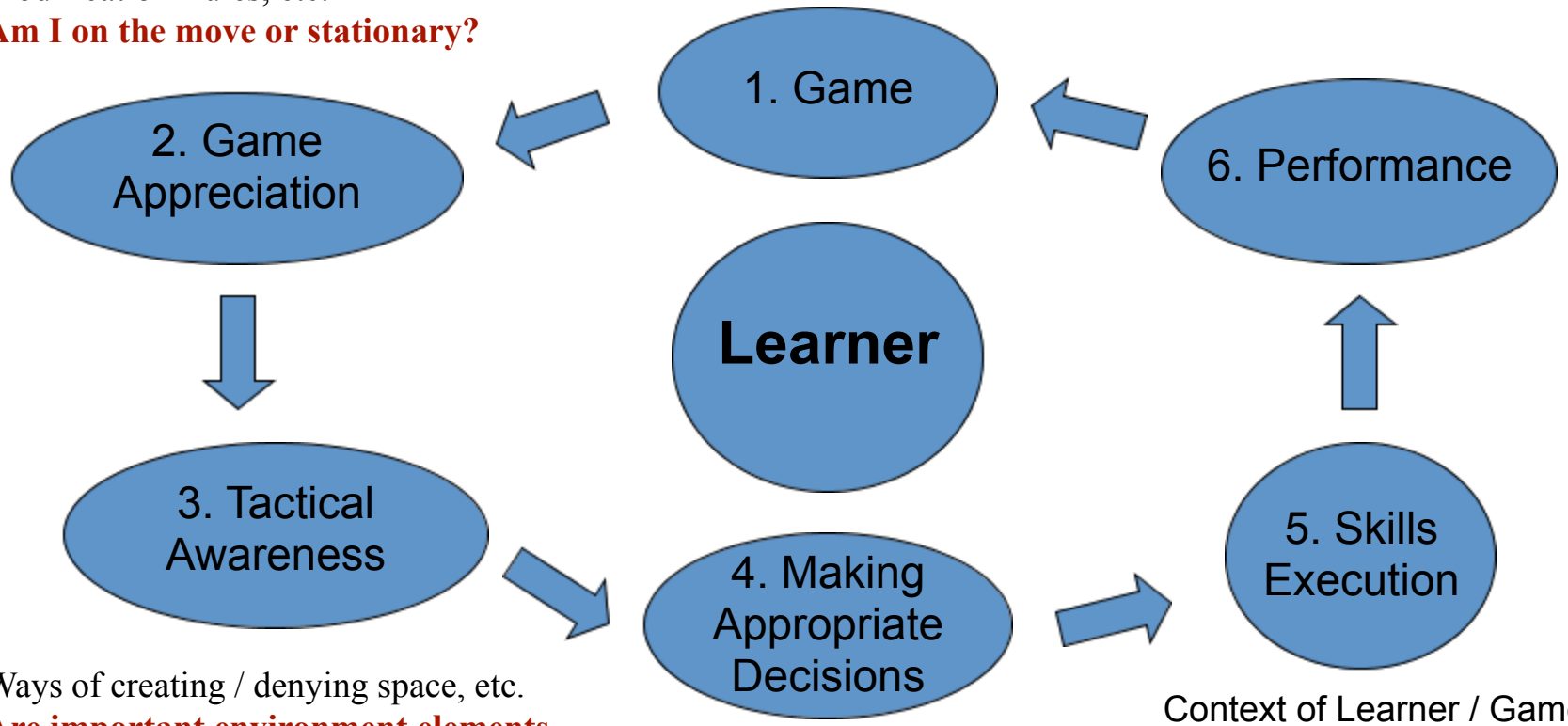
Why bother? How PE teachers might utilize the taxonomy?

- To aid in IPP / IEP planning process
- Charting individual progress
- To help determine how to differentiate instruction (Individual and Class)
- Selecting a progression of functional appropriate activities (e.g., continuum)
- Evaluation of movement capabilities and limitations (e.g, might alter unit plan).

Limitations / Considerations: Outcomes / Depends on the skills / Progression is not always the route that it may seem.

Teaching Games for Understanding the Model

Modification Rules, etc.
Am I on the move or stationary?



Ways of creating / denying space, etc.
Are important environment elements moving or stationary?

Context of Learner / Game.

Closed - Open

References

Adams, D.L. (1999). Develop better motor skill progressions with Gentile's Taxonomy of tasks. JOPERD, 70 (8), 35-38.

Gentile, A.M. (2000). Skill acquisition: Action, movement, and neuromotor processes. In J.H. Carr & R.B. Shepard (Eds.), Movement Science: Foundations for Physical Therapy (2nd ed., pp.111-187). Rockville, MD: Aspen.

Magill, R.A. (2007). Motor learning and control: Concepts and applications (8th ed.). McGraw-Hill: New York, NY.

Schmidt, R.A. & Wrisberg, C.A. (2008). Motor learning and performance (4th ed.). Human Kinetics: Champaign, IL.

Thank You and Questions

JONES, JACKSON, HARTMAN, & STANEC

BOISE STATE UNIVERSITY

Pacific University Oregon

Gardner-Webb University

St. Francis Xavier University
Antigonish, Nova Scotia, Canada