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Measuring Success for All: Assessment through Universal Design for Learning in Physical Education

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ABSTRACT

In an era of rapidly changing demographics that also includes the move by many schools to provide access to the curriculum in the general physical education setting, educators have begun to give serious attention to accessibility, diversity, equity, and inclusion particularly as it applies to educational practices. The purpose of this article to is to describe assessment using Universal Design for Learning (UDL) as a tool for developing assessments. When assessing student learning through UDL, it is essential to provide flexible options to reduce barriers and enhance access to the curriculum (Lieberman et al., 2021). Some options include visual supports (e.g., pictures, physical modeling, videos) and natural supports such as student peers and paraprofessionals. Teachers should align lessons with the Society of Health and Physical Educators (SHAPE) America standards by offering relevant, authentic options that encourage students to showcase skills and reduce any barriers to learning that may prevent students from fully demonstrating their skills.

Keywords: accessibility, diversity, students with disabilities, action and expression

1. INTRODUCTION

A successful classroom in physical education (PE) involves many factors including class size, the students themselves, instruction, and environmental design including student arrangements, equipment, assessment and access to the content. Many of the traditional assessment practices often focus on the average user and are standardized which can exclude many students with disabilities (Barber, 2018). The UDL approach has been promoted by educators to streamline access and accommodations by reducing instructional and environmental barriers (Center for Applied Special Technology (CAST), 2021; Lieberman et al., 2021) as students vary in the ways they navigate the PE learning environment and express what they know (Kohl & Cook, 2013). For example, children with significant support needs (i.e., moderate-to-severe disabilities) or those who experience difficulty processing instructional cues may approach learning skills very differently. Advocates of UDL recommend determining the needs of students and encouraging educators to create flexible designs for learning and assessment (CAST, 2011a, 2014).

In this article, planning and assessment examples are provided that focuses on reducing or eliminating barriers for assessing student learning (CAST, 2018). Teachers need to consider how to reduce barriers to create more inclusive spaces by utilizing a UDL approach to learning. As a pedagogical practice, UDL seeks to renew goals for education and learning to include skills that prepare all learners to be physically literate and life-long learners who can contribute within their community.

2. The Basics of UDL

As described earlier, UDL is a strategy for eliminating barriers to student learning. A UDL embedded curriculum in PE provides students with disabilities access to the same or similar learning outcomes as their typically developing peers (Lieberman et al., 2021). Rather than thinking a student needs to change, UDL looks at the learning environment and considers obstacles to learning. These may include the physical layout of the gymnasium, the way instruction is provided, or the use of peers as natural supports. As an educator, consider what within the environment is a barrier to learning and alternatively, what can support learning.

There are three main components of UDL. These include engagement (motivating students), representation (how the instructor delivers the content to be learned) and action and expression (the way students show the teacher what they know; CAST, 2018). Combined, these three components help the teacher examine their curriculum and make the

necessary changes so that all students can be included. UDL drives the *why, what,* and *how* of learning: multiple means of engagement, multiple means of representation, and multiple means of action and expression. This structured and methodical approach will reduce the stigma many students feel when they are excluded and their abilities are not considered in teacher planning (Alves et al., 2021; Lieberman et al., 2021).

3. Action and Expression Using a UDL Approach

Guidelines under the UDL component of Action and Expression provide a few of the following recommendations: provide options for physical action, vary the methods of response, and access to tools and assistive technologies and establish appropriate goals (CAST, 2011). Students differ widely in the way they respond to instruction and skill development so offer options for assessment. For example, encourage choice. During a gymnastics unit, they can choose the piece of equipment or the skills they would like to demonstrate and compose a unique movement sequence. In a table tennis unit, some students will need alternative means to show what they can do related to a concept or skill. Create assessments that meet the students at their level using functional assessments. They may need to demonstrate how to grip a racket using supports or assistive technology with visual markers and pictorial illustrations. Measuring student growth towards standards or grade level exit outcomes should be a commonplace practice. The Individuals with Disabilities Education Improvement Act (IDEIA, 2004) emphasizes the involvement and progress of students with disabilities in the general education curriculum. IDEIA defines the general education curriculum as the same for all children, including those with disabilities. Further specifications provided by the 2004 reauthorization of IDEIA mandate that all students have the opportunity to learn grade-level content based on standards, participate in state assessment of those standards, and have individualized education programs (IEPs) that address how students will participate in the general education curriculum.

Learning the students' skills and functionality is essential in aligning lesson goals to meet students' learning needs. When uncertain, collaborate with related service providers including the physical, occupations and speech therapists to assist in understanding students' strengths and needs (Grenier & Lieberman, 2018; Lieberman et al., 2024). This will be essential for assessing students, particularly those whose abilities fall outside the typical assessments the teacher may be using.

Assessments involve the process of gathering and discussing information from multiple and diverse sources to develop a deep understanding of what students know, understand, and can do with their

knowledge because of their educational experiences. When developing assessments, consider ease of conducting and administering the assessments. Teachers have continually expressed barriers related to implementing assessments in physical education including time and ease of use (France et al., 2011).

Utilizing a UDL approach incorporating Action and Expression in PE requires thought and planning. There is not one means of action and expression that will be optimal for all students, so the teacher should provide options for how students show what they know related to the content they have learned. Thoughtful skill assessments can improve learning in PE class. To provide numerous and flexible means of expression is to offer students alternatives for demonstrating and sharing what they have learned (Lieberman et al., 2021). Provide alternatives in the requirements for rate, timing, speed, and range of motor action required to interact with instructional materials, physical manipulatives, and technologies (CAST: http://udlguidelines.cast.org/action-expression/physical-action/response-navigation). The table below offers a list of barriers and UDL tips to reduce barriers.

Table 1

Barriers and Options for Assessments

Possible Barriers	UDL Points to Consider
Assessments that **create anxiety** in some students. Assessments that **do not engage** some students. Assessments that **are difficult** for students to understand. Assessments that are cumbersome and take too much time away from teaching.	Offering **choice and variety** in assessment conditions can reduce barriers. For example, developing a video *vs.* demonstrating a skill. Offering options **between** quizzes, demonstrations, and videos can provide choice. Utilize peers as natural supports in cooperative learning (Grenier & Yeaton, 2019).

There are a few key questions to consider when beginning the process of assessment. At the forefront, it is important to align assessments to your state or national learning goals (Lieberman et al., 2022).

1. What is the standard or grade level outcome you are targeting?

2. Do all your students have to be working towards the same grade specific exit outcome?

3. If not, how are they similar? What the some overlapping features of the outcome that can address the different learning abilities in the class?

4. What are the ways you are ensuring students can meet the outcome criteria?

5. If they are unable to demonstrate physically, are there other ways students can demonstrate learning? Computer generated choices, verbal descriptions, and choosing the correct from for a skill in photos are just a few options to choose from.

6. What specific skills do you want your student to learn? Ensure that you document the exact process and product ranges that you want them to know.

7. Do you know the needs of your students? Read the Supplementary aides page of the student's Individual Education Plan (IEP). Do they need: visuals, work chunked, larger font, etc.?

8. What equipment will help your students demonstrate the skills and knowledge you are teaching? Provide modified equipment, variations in task execution, assistance from teaching assistant or a peer buddy, and other task variations to support student assessment.

The following jump rope and tumbling assessments provide examples of how to support students' demonstration of the skill.

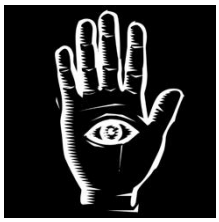
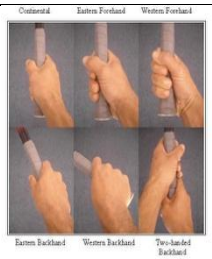
3. Using Cues, Visuals, and Embedded Supports

In the following section, examples of a variety of assessment methods are provided to allow students to express what they know in multiple ways. The following assessment is for skills needed for striking in table tennis. This functional assessment may assist in determining the students' present level of performance while reinforcing future learning. Using the grade level outcome provides a guide for directing instruction.

The grade level outcome for the following assessment (Table 2) demonstrates the correct form for a forearm and backhand stroke with a short-handled implement in a variety of striking skills.

Table 2

Functional Assessment

Student Skill	Functionality	Verbal prompts/physical assistance	Emerging	Proficient
Hand-Eye Coordination: Recognize the spatial relationship between the racket and the ball				
Gripping the racket: Able to maintain grip and hold of the racket				
Forehand/Backhand: Recognize the spatial relationship between the racket and the ball				
Makes contact with the ball				
Demonstrate a proper serve				

Ready position for serving				
Additional Comments:				
List any current equipment or accommodations provided to the student:				

The next example (Figure 1) provides uses a variety of skills and visuals to assess jump rope skills.

Figure 1

Long Rope Skills

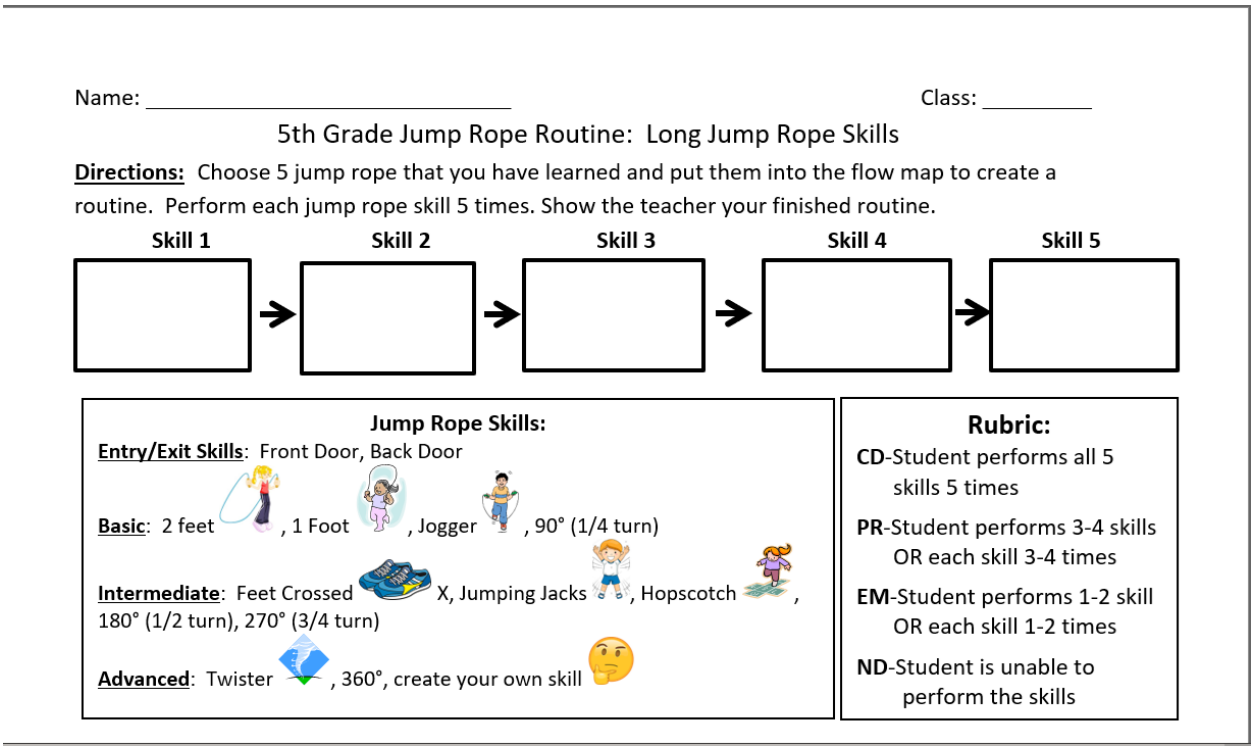


Figure 2 and Figure 3 assess gymnastics skills while providing a choice of options for demonstrating tumbling with an accompanying rubric.

Figure 2

Gymnastics Worksheet

Name: _____ Class: _____

My Tumbling Sequence: 2nd Grade

Directions: Write 1 skill from each section into the flow map to create your sequence. Practice your sequence and show a partner in your group. Perform the sequence for the teacher for your grade.

Balance	Roll	Animal Walk	Weight Transfer Stunt
★ 1	★ Pencil	★ Bear	★ Turk Stand
★ 2	★ Log	★ Crab	★ Rocker
★ 3	★ Egg	★ Snake	★ Coffee Grinder
★ 4	★ Eggs & Bacon	★ Frog	★ Circle Hand Walk
		★ Caterpillar	★ Mule Kick
		★ Seal	★ Switcheroo
		★ 3-Legged Puppy	★ Heel Slap
		★ Bunny	

Teacher Check:
Balance: ____ Roll: ___
Animal Walk: ____ Stunt: ____

Name: _____ #: _____ Class: _____

GOAL: For students to demonstrate an understanding of balance, rolling, transfer of weight, and locomotor movements, by putting concepts together into a movement sequence.

TASK: Design and demonstrate a movement sequence on a long floor mat that meets the following requirements. The sequence must contain at least 7, but no more than 9 different movements of elements:

- The sequence must start and end with a balance (this is 2 of the elements).
- The sequence must have at least 1 roll (log roll, egg roll, forward roll, backward roll etc.).
- The sequence must have at least 1 transfer of weight (donkey kick, cartwheel, transfer a ball or object, etc.).
- The sequence must have a change of direction.
- The sequence must have a travel segment (skip, gallop, walk, slide, leap, etc.).
- Each movement should flow smoothly into the next movement.
- The sequence should be performed to the best of your ability.

WRITE DOWN or Describe YOUR MOVEMENT SEQUENCE BELOW (use pictures if you need to):

_____

Practice your sequence until you can perform it smoothly and with control of your body. You will perform your sequence in two weeks.

Figure 3

Gymnastic Sequence Assessment Rubric

SKILL COMPONENT	Red	Blue	Yellow
Sequence has at 7 different elements or movements			
Sequence starts and ends with a balance			
Sequence contains at least 1 roll			
Sequence contains at least 1 transfer of weight			
Sequence has a change of direction			
Sequence has a traveling segment			
Red: Exceeds expectations, shows student put in extra thought and effort Blue: Meets expectations, student worked to include all the requirements Green: Needs more practice			
Final comments:			

Things to consider when implementing assessments are ways to partner students of different abilities to work together (Grenier & Lieberman, 2018). Students can learn from each other through both their demonstrations and feedback. Make the assessment available through accessible task designs such as posters, videos, task cards, or stations. Present assessments using multiple sensory avenues including words, gestures, and pictures.

Another option is to consider using Cooperative Learning as an instructional strategy that promotes positive interdependence and equalizes

academic and skill differences (Grenier & Yeaton, 2019). An essential feature of Cooperative Learning is the common goal amongst peers and the student roles that contributes to student learning and peer support.

4. Conclusion

In order to assess student learning through the principles of UDL, it is essential to provide flexible options to reduce barriers and enhance access to the curriculum; some of the options include visual supports (i.e. pictures, physical modeling, videos, and skill cues) and natural supports such as student peers and paraprofessionals. The teacher should involve students in the assessment process and communicate with them throughout. It is important to align assessments to the lesson learning goals, and make sure the goals have been clearly established (Lieberman et al., 2021).

The teacher should offer relevant, authentic options that encourage students to showcase their skills. It is also important to reduce any barriers to learning that may prevent students from fully demonstrating their skills and plan on assessments that are engaging and frequent so that data collected will inform instructional decisions. In any assessment, the teacher should allow students to demonstrate skills in a variety of ways. Teachers may consider using a functional assessment to determine the students' present level of performance as demonstrated with the striking skills and offer a progression of skills as seen in the jump rope and gymnastic assessment (Grenier & Lieberman, 2018).

Teachers may find that although creating UDL assessments is a doable task, ensuring that lessons include UDL components of action and expression requires additional time in the planning stage (Dymond et al., 2006; Richmond-McGhie & Sung, 2013). This additional effort pays off when all students can demonstrate their learning. By including student interests, learning styles and providing choices for engagement with the content, teachers can positively enhance the classroom learning environment.

5. ACKNOWLEDGEMENTS

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None.

5.2 Conflict of Interest

The authors have no conflicts of interest to declare.

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