



Inclusive Access to a Diploma:
Reimagining Proficiency
for Students with Disabilities



Assessing Movement Skills and Movement Knowledge

Identifying Alternative Means of Expression for Students with Disabilities in Physical Education Courses

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Executive Summary

Assessment in physical education courses requires measuring students' knowledge and movement skills in ways that uphold the content standards while addressing individual student strengths and needs. Aligning instruction and assessment ensures that all students learn the knowledge and skills necessary to meet proficiency and develop understandings to support healthy lifestyles beyond adolescence. Equipping educators with effective and flexible assessment methods promotes appropriate instruction and assessment. This is especially beneficial when working with students with disabilities, who often have individualized education programs (IEPs) requiring educators to provide personalized supports and services for these students. This practice brief provides physical education teachers with clear strategies for using flexible means of assessment without sacrificing the rigor of the performance expectations that define proficiency within secondary physical education courses.

Assessing Learning in Physical Education

Assessing learning in physical education and all other content areas serves two purposes: (1) collecting evidence of student learning and (2) contributing to student learning. Therefore, the assessment process in physical education is essential for students and teachers alike.

The *Physical Education Model Content Standards for California Public Schools Kindergarten Through Grade Twelve* sets the expectation that instruction and assessment in physical education be standards-based as is the expectation for the other high school courses required for graduation. For the *Inclusive Access to a Diploma: Reimagining Proficiency for Students with Disabilities* initiative, the physical education standards are clustered around the following Big Ideas¹ for Physical Education Courses 1 and 2.

¹ For more information on the development of Big Ideas and alignment with the Overarching Standards for Physical Education Courses 1 and 2 for this initiative, please refer to the practice brief, *Unpacking Course Requirements for Physical Education: Considerations for Students with Disabilities*.



- **Big Idea 1:** Students demonstrate proficient movement skills needed to perform a variety of physical activities.
- **Big Idea 2:** Students demonstrate knowledge of movement skills, concepts, principles, and strategies.
- **Big Idea 3:** Students participate in enjoyable and challenging physical activities to improve health and performance.
- **Big Idea 4:** Students demonstrate knowledge of physical fitness concepts, principles, and strategies to improve health and performance.
- **Big Idea 5:** Students demonstrate and utilize knowledge of psychological and sociological concepts, principles, and strategies that apply to the learning and performance of physical activity.

The Big Ideas and related standards listed above should be practiced within the eight mandated content areas and must be assessed to determine the progress each student is making.

- The Effects of Physical Activity Upon Dynamic Health
- The Mechanics of Body Movement
- Aquatics
- Gymnastics and Tumbling
- Individual and Dual Sports
- Rhythms and Dance
- Team Sports



- Combatives

Aligned Instruction and Assessment

Aligned instruction is highly effective in improving student learning, as evidenced by assessment results. Alignment ensures that the content, assessments, and instructional methods closely align with the learning objectives outlined in the content standards. This approach requires teachers to fully understand the standards as they are written, rather than interpreting them independently.

The assessment process within aligned instruction includes the following:

- **Evidence of learning:** the proof the teacher needs from the student to confirm the student is learning the content.
- **Assessment tool:** a question or prompt designed to collect and align with the necessary evidence. In some cases, the assessment tool looks like the standard, and it should. Students need to have a very clear understanding of how to respond effectively.
- **Student work products:** how the student displays their learning. Student work products may need more than one option to enable all students to show, share, or express their learning. These options are alternative means of expression.

Teachers can ensure that both instruction and the assessment process align for their students using the simple model shown in table 1. Look at the two examples of aligned standards-based instruction and assessment. The content standard—what the student must know or be able to do—shown in the first row demonstrates a *movement skills* assessment while the second row denotes a *movement knowledge* assessment. Note how closely each assessment process aligns with the content standard.



Table 1. Examples of Aligned Standards-Based Instruction and Assessment

Content standard	Evidence of learning	Assessment tool	Student work product
Demonstrate a proficient forward roll	The teacher observes a student demonstrating a forward roll.	<ul style="list-style-type: none"> • A prompt for the student to do a forward roll • An activity that requires the student to do a forward roll 	The teacher visually captures the student demonstration on video or in real-time, using a checklist of the critical elements.
Justify the use of physical activities to achieve desired fitness goals	The teacher receives a statement from the student justifying the use of physical activities to achieve desired fitness goals.	<ul style="list-style-type: none"> • A prompt eliciting rationale behind the use of specific physical activities to achieve desired fitness goals 	A statement from the student (written or spoken) that provides a claim, evidence, and reasoning regarding the selection of physical activities to achieve a fitness goal.

Assessing Movement Skills

Human movement proficiency is defined by science (biomechanics and motor learning), for every skill (underhand throw, skip, backhand strike, and so forth) and is not created or decided upon by teachers and students during the learning process. When the learning of movement skills is assessed, the *critical elements* and *mature form* take center stage in the assessment process by providing criteria for teachers and students to use in making decisions about the quality of the performance of the skill.

- **Critical elements:** those elements of performing a skill deemed necessary for its correct execution.
- **Mature form:** includes the critical elements of a skill, performed in a smooth and continuous motion.



It is common for physical education teachers to consider the use of both *process* and *product* approaches to assess students' movement skills. Each of the two approaches reveals different aspects of movement skill:

- **Process:** the movement itself (for example, the position of the leg and foot at each stage of a kick).
- **Product:** a result of the movement (for example, the distance a ball traveled when thrown overhand).

While the product-based measure is easier for the teacher to score, it does not provide the whole story of a student's learning of the movement skill. For example, mastery of an overhand throw technique is not the only factor that impacts the distance of a throw. Results can also be affected by other elements such as height and muscular strength.

The process-based approach to assessing movement skills reveals the learning of skills and shows growth over time which can be assessed using the critical elements of each skill as a proficiency measure. Another benefit of the process-based approach is that the feedback shared with learners is clear and focused on the movement itself.

When students have physical disabilities, the teacher must consider multiple factors when determining the movement performance that is accepted as proficient. These factors include the following:

- The critical elements and mature form of the movement.
- The student's ability to support body weight, demonstrate static and dynamic balance, ambulate, and control upper and lower extremity movements.
- The student's need for adaptive devices and equipment.

Based on physical challenges, students needing adaptive devices and equipment or those with limited movement abilities generally have different criteria for proficient



movement. In this instance, “different” does not mean modified. “Different” addresses the capabilities of a student with neuromuscular limitations or those needing adaptive devices or equipment. For example, a student without a disability is required to demonstrate the flutter kick, which is a component of the swimming front-crawl stroke, using hip, knee, and ankle movements. In contrast, a student with limited neuromuscular control, such as a student with cerebral palsy, may perform the flutter kick using only a hip movement (flexion and extension). In another instance, a student with neuromuscular difficulties may require a flotation device to maintain a prone position while performing a flutter kick. In the case of a student with a prosthetic leg, the prosthesis is removed while swimming and the flutter kick is assessed for only one limb. In these examples, the students simply have different movement patterns when performing and demonstrating proficiency in the foundational skill. In any event, the teacher must always align the evidence for proficient movement to the skill being assessed.

Assessing Movement Knowledge

Equally important as movement skills, movement knowledge significantly contributes to learning how to move (the partnership of the body and the brain) and to adopting and supporting daily physical activity as a behavior. With low levels of physical activity among high school students, participation in physical activity often takes precedence over movement knowledge in physical education.

Movement knowledge is foundational to learning movement skills. It is essential for transferring the application of skills and knowledge learned across activities and throughout one’s lifespan, while also boosting confidence to try new physical activities. In high school, the learning of movement knowledge contributes to virtually all the movement skills included in the content standards. For example, from standard 1.7 (CDE 2005, p. 36), the partnership of “analyze and evaluate feedback” supports students in thinking about and practicing methods to improve performance. The opportunity to evaluate that feedback adds a reflective layer to understanding the effectiveness of their performance, empowering students to use effective feedback in multiple settings and



contexts, such as attempting new skills, supporting the learning of others, and recognizing the impact of effective feedback.

Alignment of content–instruction–assessment is critical to ensuring students have the opportunity to learn the content as intended. Standard 1.4 from Course 1, “Explain and demonstrate advanced offensive, defensive, and transition strategies in aquatic and individual and dual activities” (CDE 2005, p. 36), describes the learning to take place. Both pieces of learning (explain and demonstrate) should be used in the design of the instruction and the assessment. Student learning of the content is then effective because of teacher efforts to align instruction and assessment.

Alternative Means of Expression for Physical Education

Given that physical education requires both skills and knowledge assessment, alternative means of expression may be necessary when assessing students with disabilities. While many of the alternative means of expression for knowledge used in other content areas apply to assessment in physical education, the tables in Appendix A of this document include examples tied to the following physical education contexts and requirements.

- Alternative Means of Expression for Movement Skills
- Alternative Means of Expression for Movement Knowledge
- Locations and Parameters for Skills and Knowledge Assessment

These resources include a variety of alternative means of expression from which the teacher may select for use when assessing the skills and knowledge proficiency of students with disabilities.

As an important note, some students may require the use of adaptive devices or equipment when performing a movement skill. The movement skills must be assessed while they use these adaptive devices and equipment to determine their level of



proficiency. In these situations, the resultant skill performance is an adapted performance. For example, students with limited movement abilities may need specialized equipment such as a lever or switch that releases a bowling ball to roll down a ramp toward the pins or to release an arrow aimed at an archery target. Braces will allow students to remain in a supported upright position and may permit some locomotion although the rhythm and flow of the movement will be restricted. Those students using a wheelchair will be able to perform numerous skills while seated such as striking skills for golf and volleyball and engaging in cardiovascular exercise when pushing the chair instead of when running. In each of these instances, the movement performance is adapted based on the needs of the students and the use of the adaptive devices or equipment.

Students who have neuromuscular impairments that impact the motor function of their extremities or those with prosthetic limbs will have different movement patterns than students without them. The teacher needs to assess these different movement patterns as adapted physical performances and not as modified performances.

The use of sighted partners allows students with severe visual impairments to receive environmental and spatial information that permits them to demonstrate proficient movement skills. For example, when a sighted partner describes the slope of the green and the direction and distance to the flag stick, the student is assessed on their ability to perform a mature putting stroke. In this situation, the skill performance is not adapted but the method of receiving visual information is adapted.

Students with very limited or no movement ability can demonstrate or confirm their level of learning in proficient movement performance by manipulating a human-like figure (doll), creating digital diagrams, or using gestures (head nod or eye gaze) or giving verbal responses to indicate agreement when observing others performing the skill correctly. These alternative means of expression are necessary to address the severe needs of very few students.



Using Levels of Support During Assessment

When assessing movement skills and movement knowledge for proficiency, the use of a three-category (attempted, approaching, and proficient) rubric is helpful for teachers and students alike. Since physical education requires both skills and knowledge to be assessed, students with disabilities may need various types and levels of support to demonstrate proficiency.

Students with disabilities who score at the attempted level may need full physical (complete physical support), direct verbal (complete verbal or signed language description of the skill), or modeled cue (visual demonstration) prompting while attempting to perform the skill. When student performance is in the approaching category, they may need one or more prompts, such as a partial physical prompt (offer physical assistance), indirect verbal prompt (posed in a question format), or a gestured cue (minimal sign language or universal physical gestures such as a head nod and pointing to or tapping a body part) to provide the support needed to perform the skill. Students with disabilities are expected to demonstrate proficient skills independently, to the maximum extent possible, given the nature of their disability and their use of adaptive devices and equipment. When assessing knowledge in physical education, an indirect verbal prompt, including sign language, may provide the support needed to elicit an approaching response (Verderber and Kennedy 1998, p. xi).

Conclusion

Finally, because the assessment process serves the purposes of (1) collecting evidence of learning movement skills and knowledge and (2) contributing to the learning of movement skills and knowledge, the integration of alternative means of expression and adaptive strategies ensures that every student has an opportunity to advance, confirm, and personalize their learning. Teachers can maximize the impact of the assessment process for all students by aligning content, instruction, and assessment; using science-based criteria to design instruction and assess learning; utilizing process-based assessment tools; and considering multiple factors when determining the movement



performance that is accepted as proficient for students with physical disabilities. Movement skills and knowledge are at the foundation of meeting the daily needs of participating in physical activity and accessing its many benefits.



Resources

California Department of Education (CDE). 2005. *Physical Education Model Content Standards for California Public Schools: Kindergarten Through Grade Twelve*. CDE Press.

California Department of Education (CDE). 2009. *Physical Education Framework for California Public Schools: Kindergarten Through Grade Twelve*. CDE Press.

California Department of Education (CDE). 2024. *California Preschool/Transitional Kindergarten Learning Foundations*, Volume 2. CDE Press.

California Department of Education, Special Education Division. 2012. *Adapted Physical Education Guidelines in California Schools*. California Department of Education and the California Association for Health, Physical Education, Recreation, and Dance (CAHPERD) State Council on Adapted Physical Education (SCAPE).

Cohen, S. A. 1987. Instructional Alignment Searching for a Magic Bullet. *Educational Researcher*, 16, 16–20.

Verderber, J., and Kennedy, J., Eds. 1998. *CARE-R: Curriculum, Assessment, Resources, and Evaluation-Revised: The Adapted Physical Education Curriculum of the Division of Special Education*. Los Angeles County Office of Education.



Appendix A. Guidance on Alternative Means of Expression for Physical Education Courses

The following tables provide guidance to physical education teachers on the array of viable alternative means of expression a student could use when showing proficiency in movement skills (Table A1), movement knowledge (Table A2), and location and parameters to assessment (Table A3).

Table A1. Alternative Means of Expression for Movement Skills

Response type	Description	Examples
<p>Physical responses for skills proficiency</p>	<p>Performance is assessed while students use adaptive devices and equipment. The resultant movement is an adapted physical performance.</p> <p>Students who have neuromuscular impairments that impact the motor function of their extremities or those who need prosthetic limbs will have a different movement pattern than those without disabilities. These students are to demonstrate proficiency based upon the function of their body parts and use of their prosthetic limbs which also results in an adapted physical performance.</p> <p>To achieve an approaching level of proficiency, some students may need partial physical, indirect verbal, and minimal gesture prompts. If students require greater cues, their proficiency level would fall in the attempted category.</p>	<ul style="list-style-type: none"> ● Adaptive devices and equipment: levers, switches, braces, wheelchairs, prosthetic limbs, and so forth ● Adapted physical performance ● Sighted partner ● With needed prompting: physical, verbal, and modeled cues



Response type	Description	Examples
Physical responses only for students with very limited or no movement ability	Students can demonstrate or confirm their level of learning of proficient movement performance by manipulating a human-like figure, creating digital diagrams, or using gestures (head nod or eye gazing) or verbal responses to indicate agreement when observing others performing the skill correctly.	<ul style="list-style-type: none"> ● Gestures ● Verbal response ● Digital diagrams ● Human-like figure (doll) manipulation

Table A2. Alternative Means of Expression for Movement Knowledge

Response type	Description	Examples
Physical models	Creating or using physical models is one way a student may prefer to communicate their learning of proficient movement skills, offensive and defensive strategies, and rules. This type of alternate means of expression supports the use of physical tools and objects.	<ul style="list-style-type: none"> ● Physical activity and sport-based realia ● Three-dimensional diagrams ● Human-like figure (doll)
Verbal responses	Some students excel in verbal communication but find it difficult to write responses. Students who struggle with written language can verbally respond to a prompt or demonstrate knowledge proficiency by recording memos and logs or using think-aloud audio clips.	<ul style="list-style-type: none"> ● Verbal response to a prompt ● Recorded memos and logs ● Think-aloud audio clips



Response type	Description	Examples
Pictorial or visual forms of response	<p>Pictorial or visual forms of response involve using images, diagrams, graphs, or other visual representations as a means for students to demonstrate their learning of the content. It allows students to express their thinking in a visual format, which can be particularly beneficial for learners who excel in visual-spatial reasoning or find it challenging to articulate their ideas solely through written or verbal means.</p>	<ul style="list-style-type: none"> ● Hand-drawn diagrams ● Digitally generated diagrams ● Graphs and tables generated by hand or software ● Infographics ● Graphic organizers
Multimedia-based responses	<p>Multimedia refers to the integration of various forms of media such as text, images, audio, video, and interactive elements to convey information and enhance learning experiences.</p>	<ul style="list-style-type: none"> ● Slide-based presentation ● Virtual whiteboards ● Video responses and films
Responses dependent on assistive technology and adaptive devices	<p>Some students will need specific specialized assistive technology. Assistive technology ranges across a spectrum of no-tech, low-tech, and high-tech solutions.</p> <p>Some students may need physical adaptive devices or equipment such as pointers, wheelchairs, switches, braces, levers to allow them to move and manipulate objects in the environment. These tools and resources are specified within students' IEPs.</p>	<ul style="list-style-type: none"> ● Picture icon communication systems ● Speaking device ● Text-to-speech software ● Adaptive keyboards ● Braille writer machine ● Tactile graphics ● Adaptive devices and equipment



Response type	Description	Examples
Purely symbolic responses	Students may prefer to use more traditional expression methods. This method allows students to use purely symbolic responses to show their understanding of the content. For example, they may nod to indicate agreement or hand-generate symbols to demonstrate understanding of a strategy, sequence, concept, or principle.	<ul style="list-style-type: none"> ● Physical gesturing ● Text-to-speech software ● Learning journals ● Hand-generated symbols ● Digital computer software

Table A3. Locations and Parameters for Skills and Knowledge Assessment

Response type	Description	Examples
Locations and parameters	<p>Some students with disabilities may have health conditions that preclude them from participating outdoors where physical education often occurs. While they may have the ability to demonstrate proficiency in a given foundational skill, they must be allowed to perform the skill indoors.</p> <p>Others may have social–emotional difficulties that require small group participation. Still, others may require a smaller court, lower net, or closer serving line.</p> <p>When demonstrating movement knowledge, students with disabilities may need more time. More time for a specific movement skill is not appropriate as the skill must be performed in one time frame.</p>	<ul style="list-style-type: none"> ● Indoor space due to health needs ● Small group ● Smaller court dimensions ● More time for knowledge proficiency

