

## Physical Education Learning Activity Types<sup>1,2</sup>

This taxonomy of learning activity types in physical education is intended to illustrate and suggest tasks that can comprise a curriculum-based lesson, project, or unit that addresses cognitive, psychomotor, and affective learning objectives. The activity types are rooted in the National Association for Sports and Physical Education's (NASPE, 2004) standards that assist students in building the knowledge, skills, and confidence to achieve, enjoy, and maintain a physically active and healthy lifestyle. The description of each individual activity type includes a list of possible technologies that may be used to support it. Tools such as exergames, pedometers, and heart rate monitors can provide creative ways to engage in physical activity and its monitoring (NASPE, 2009).

The taxonomy incorporates physical fitness and motor skills development activities. Consequently, the two major categories in the taxonomy are *physical fitness* and *motor skill development*. Physical fitness is sub-divided into those learning activities that help students build *cognitive understanding (knowledge development and application)* and *psychomotor development (practice and application)*. The *motor skill development* section is also subdivided into *cognitive* and *psychomotor* categories. In all, we have identified 56 distinct learning activity types within these subdivisions of physical education. Teachers should consider planning each lesson, project, or unit to include more than one activity from each of the cognitive and psychomotor tables that follow.

In each of the following activity types, affective learning outcomes are linked to explicit cognitive and psychomotor goals. Whether affective learning is a component or the central focus of instruction, specific instructional strategies may be employed to ensure its inclusion. A combination of activity types such as learning game-playing strategies while playing the game and cooperating as a team member, for example, represent important aspects of both affective and cognitive learning in physical education. In a physical fitness unit, students could self-assess their physical fitness levels, then create fitness programs using that information.

The physical education activity types are presented in the tables that follow, along with possible technologies that may be used to support each type of learning activity.

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<http://activitytypes.wm.edu/PhysicalEducationLearningATs-Feb2012.pdf>

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## Physical Fitness

Physical fitness is a physical state of well being that helps people to perform daily activities with vigor, reduces the risk of health problems related to lack of exercise, and provides a fitness base for participation in a variety of physical activities. The activity types below reflect two areas of physical fitness: health-related physical fitness (HRPF) and skill-related physical fitness (SRPF) (Miller, 2005). Combining and sequencing the activities below can help students to understand, acquire, practice, and use physical fitness. Educational technologies can assist students' linking specific physical fitness knowledge and concepts to real-world situations, and to measure, interpret, and prescribe appropriate fitness activities.

**Cognitive.** The purpose of physical fitness-related cognitive activities is to build knowledge about the effects of exercise on health, to engage in practices that develop and maintain physical fitness, and to value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction.

### *Knowledge development.*

| Activity Type                              | Brief Description  | Possible Technologies   |
|--|--|---|
| Read text                                  | Students extract information from textbooks, laboratory activities, etc.; both print-based and digital formats   | Web sites, electronic books, online databases                                   |
| Take notes                                 | Students record information from lecture, live or recorded games, videos, presentations, group work  | Word processor, mobile device, tablet, wiki                                     |
| View images                                | Students examine still images/objects; print-based or digital format   | Document camera, digital camera, Web sites                                      |
| View a presentation/demonstration          | Students gain information from teachers, guest speakers, and peers; moving images/objects (video, animations); synchronous/asynchronous; in-person or multimedia | Presentation software, video, Web-based virtual demonstrations                  |
| Explore/examine concepts and/or principles | Students gather information/conduct research using print-based and digital sources   | Web search engines, content-specific interactive tools                          |
| Ask questions                              | Students develop questions related to course material/concepts   | Word processor, wiki  |
| Answer questions                           | Students respond to teacher, peer, written, or digitally posed questions   | Word processor, quiz software, discussion boards, wiki, student response system |

|                         |  |   |
|-------------------------|--|---|
| Discuss                 | Students engage in dialogue with one or more peers;<br>synchronous/asynchronous  | Discussion fora,<br>email, text message,<br>videoconferencing                   |
| Take a quiz/test        | Students respond to questions on a test or quiz  | Word processor, quiz software, Web sites, student response system               |
| Create a representation | Students develop a representation of a physical fitness concept or process (in text, images, presentation, concept map, etc.). | Drawing software, concept mapping software, presentation software, video camera |

***Knowledge application.***

| <b>Activity Type</b>                          | <b>Brief Description</b>  | <b>Possible Technologies</b>   |
|---|---|--|
| Learn a procedure                             | Students learn how to use equipment safely and appropriately  | Video demonstrations, Web sites, text files                          |
| Practice a procedure                          | Students practice using equipment and software, measuring and collecting data   | Realtime data collection tools, content-specific software            |
| Select a health-related physical fitness test | Students learn the correct form(s) for and choose relevant test(s) to measure a physical fitness component (e.g., muscular strength, agility, coordination) | e-books, Web sites, virtual demonstrations                           |
| Generate/collect data (pre- and post-)        | Students generate data (e.g. heart rate, number of sit-ups, etc.) by performing and administering HRF tests   | Realtime data collection tools, content-specific assessment software |
| Analyze data                                  | Students compare and contrast data collected against criteria and/or previous analyses  | Spreadsheet, mobile device   |
| Set goals                                     | Based upon previous data analysis, students identify appropriate physical fitness goals   | Word processor, content-specific assessment software                 |
| Maintain a physical activity log              | Students record a log of activities, perceptions, reflections on feelings; both in school and outside school  | Concept mapping software, word processor, spreadsheet                |

|   |   |  |
|---|---|--|
| Create a fitness plan                                     | Students design and modify individualized fitness plans to address specific goals (e.g., to improve flexibility, endurance)         | Concept mapping software, word processor, spreadsheet  |
| Observe and evaluate self and/or peers                    | Students observe their own or a peer's performance and analyze the performance against predetermined criteria (form and/or product) | Digital camera, digital video camera, content-specific assessment software, realtime data collection tools |
| Provide feedback & recommendations                        | Students use information from fitness assessments to improve selected physical fitness components                                   | Word processor, videoconferencing, audiorecorder, discussion fora  |
| Demonstrate/teach a physical fitness concept or principle | Students share their understanding of a physical fitness concept or principle   | Digital camera, digital video camera, presentation software, realtime data collection tools                |

**Psychomotor.** Psychomotor learning activity types help learners to practice and apply health and skill-related physical exercises to develop and maintain a healthy lifestyle. The sequence of these activities—in that they appear following the knowledge-related activities described above—demonstrates how students can engage in activities to understand, acquire, practice, and perform appropriate exercises in to improve physical fitness.

***Practice.***

| <b>Activity Type</b>                            | <b>Brief Description</b>  | <b>Possible Technologies</b>    |
|---|---|---------------------------------|
| Do an exercise/calisthenics                     | Students select and perform an appropriate exercise to improve a specific component of physical fitness               | Exergames                       |
| Practice an exercise                            | Students continue to do a previously-learned exercise to develop and improve a specific component of physical fitness | Exergames                       |
| Practice various types of physical conditioning | Students practice a variety of physical activities to develop a component of physical fitness                         | Exergames                       |
| Evaluate and revise physical performance        | Students review, consider, and make changes to an exercise performance based upon feedback from teachers and/or peers | Exergames, digital video camera |

*Application.*

| <b>Activity Type</b>                                      | <b>Brief Description</b>   | <b>Possible Technologies</b>   |
|---|--|--|
| Demonstrate/teach a physical fitness concept or principle | Students communicate their understanding of a fitness concept or principle                     | Digital camera, digital video camera, presentation software, realtime data collection tools    |
| Create an exercise or exercise routine                    | Students create a series of movements to address a particular fitness concept and perform them | Digital camera, digital video camera, presentation software, Web sites, Web authoring software |
| Maintain a personal fitness program                       | Students incorporate fitness-related components in a conditioning program                      | Exergames  |

**Motor Skill Development**

Motor skill development activity types reflect three stages of motor skill acquisition: cognitive (understanding), stage associative (practice), and stage autonomous (automatic) learning (Fitts & Posner, 1967). Combining and sequencing the activities below can help students to understand, acquire, practice, and perform motor skills automatically.

**Cognitive.** The overall purpose of cognitive activities in physical education is to help students understand movement concepts, principles, and strategies, which aids the development of motor skills and performance of sports and other types of physical activities.

*Knowledge development.*

| <b>Activity Type</b> | <b>Brief Description</b>   | <b>Possible Technologies</b>                  |
|----------------------|--|---|
| Read text            | Students extract information from paper-based and digital resources                              | Web sites, electronic books, online databases |
| Take notes           | Students record information from lecture, live or recorded game, video, presentation, group work | Word processor, mobile device, tablet, wiki   |
| View images          | Students examine still images/objects; print-based or digital format                             | Document camera, digital camera, Web sites    |

|  |   |   |
|--|---|---|
| View a demonstration                               | Students gain information from teachers, guest speakers, and peers; moving images/objects (videos, animations); synchronous/asynchronous; in-person or multimedia | Presentation software, video, Web-based virtual demonstrations                          |
| Explore/examine concepts, rules, and/or strategies | Students gather information/conduct research using print-based and digital sources  | Web search engines, content-specific interactive tools                                  |
| Ask questions                                      | Students develop questions related to course material/concepts  | Word processor, wiki  |
| Answer questions                                   | Students respond to teacher, peer, written, or digitally posed questions  | Word processor, quiz software, student response system, discussion boards, wiki         |
| Discuss  | Students engage in dialogue with one or more peers; synchronous/asynchronous  | Discussion board, email, text message, videoconferencing                                |
| Take a quiz/test                                   | Students respond to questions on a test or quiz   | Word processor, quiz software, Web sites, student response system                       |
| Create a representation                            | Students develop a representation of a movement concept or skill (in text, images, presentation, concept map, etc.).  | Drawing software, concept mapping software, presentation software, digital video camera |
| Create a game                                      | Combine rules, strategies, and motor skills to form a new way to play a game  | Drawing software, concept mapping software, word processor, digital video camera        |
| Plan for collaboration in a game situation         | Students develop a strategy or game plan to address specific goals  | Concept mapping software, word processor, spreadsheet                                   |

***Knowledge application.***

| <b>Activity Type</b>                   | <b>Brief Description</b>  | <b>Possible Technologies</b>   |
|--|---|--|
| Do movement analysis                   | Students assess movement patterns and/techniques to improve performance   | Movement analysis software   |
| Generate/collect data                  | Students generate data by performing motor skill  | Realtime data collection tools, content-specific assessment software                                       |
| Analyze data                           | Students compare and contrast data collected against criteria and/or previous analyses (e.g. proper techniques) | Spreadsheet, mobile device, movement analysis software   |
| Observe and evaluate self and/or peers | Students observe and analyze their own or a peer's performance.   | Digital camera, digital video camera, content-specific assessment software, realtime data collection tools |
| Provide feedback & recommendations     | Students communicate the results of performance analysis and provide recommendations to improve motor skills.   | Word processor, videoconferencing, audiorecorder, discussion fora  |
| Set goals                              | Students determine appropriate motor goals based upon observations and/or movement analysis.                    | Word processor, content-specific assessment software   |
| Plan a training program                | Students design a training program for skill development and/or improvement based upon self/peer evaluation     | Digital camera, digital video camera, presentation software, Web sites, Web authoring software             |

**Psychomotor.** Psychomotor learning activity types focus on practicing and applying motor skills that lead to the automatic performance of those skills. The sequence of these activities—in that they appear following the knowledge-related activities described above—demonstrates how students can engage in activities to understand, acquire, practice, and perform appropriate exercises to improve motor skill performance.

*Practice.*

| <b>Activity Type</b>                                   | <b>Brief Description</b>  | <b>Possible Technologies</b>                                |
|--|---|---|
| Imitate/execute the mechanics of a motor skill         | Students imitates specific skill mechanics over and over to address a particular motor skill (e.g. stance, follow-through, etc.)                      | Digital video camera, Web sites, Exergames                  |
| Refine the performance of each part of the motor skill | The students practice parts of a motor skill separately. (e.g. a spike in volleyball can be broken down into run up, stepping, jumping and striking). | Digital video camera, movement analysis software, Exergames |
| Combine parts of a motor skill in a sequence           | Students practice the whole motor skill (e.g. a spike in volleyball)  | Exergames   |
| Adjust the sequence the motor skill                    | Students make corrections to the performance of a motor skill in response to feedback   | Digital video camera, movement analysis software            |

*Automatic performance.*

| <b>Activity Type</b>                       | <b>Brief Description</b>  | <b>Possible Technologies</b>  |
|--|---|---|
| Perform a motor skill automatically        | Students practice of one or more motor skills without thinking  | Exergames   |
| Participate in a game                      | Students select and apply specific sports' tasks (e.g. motor skills), rules, and/or strategies in an individual or team-based game-play situation | Exergames   |
| Collaborate and strategize in a game       | Students work as a team to apply relevant knowledge and skills during a controlled game-play situation  | Exergames   |
| Modify & adapt performance                 | Students revise, consider, and make changes to a performance based upon feedback from teachers and/or peers                                       | Exergames, digital video camera   |
| Demonstrate/teach the mechanics of a skill | Students share their understanding of a game concept or principle   | Digital camera, digital video camera, presentation software, realtime data collection tools |

## References

- Fitts, P. M., & Posner, M. I. (1967). *Human performance*. Belmont, CA: Brooks/Cole.
- Miller, D. K. (2010). *Measurement by the physical educator: Why and how* (6th ed.). Boston, MA: McGraw Hill.
- National Association for Sport and Physical Education. (2009). *Appropriate use of instructional technology in physical education*. Reston, VA: Author.
- National Association for Sport and Physical Education. (2004). *Moving into the future: National standards for physical education* (2nd ed.). Reston, VA: Author.