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Viewing and Visual Representation in the Physical Education Classroom

Abstract

Visual representation and viewing are integral parts of language arts, communication, and physical education. Time constraints often limit a self-contained classroom teacher, or even the language arts teacher's ability to adequately address all areas of language arts. Therefore, it is important to include language arts in other content areas. Visual representation and viewing can be effectively integrated into physical education, and can enhance the physical education learning experience as a result. In this article, the author discusses several strategies to integrate viewing and visual representation in a physical education classroom.

Keywords

physical education, teaching, digital cameras, concept mapping, graphic organizers, sequencing, bulletin boards, drawing, word walls, drama, word association charts

Disciplines

Educational Methods | Health and Physical Education

Comments

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Viewing and Visual Representation in the Physical Education Classroom

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Viewing and Visual Representation in the Physical Education Classroom

Visual representation and viewing are integral parts of language arts, communication, and physical education. Time constraints often limit a self contained classroom teacher, or even the language arts teacher's ability to adequately address all areas of language arts. Therefore, it is important to include language arts in the content areas. Visual representation and viewing can be effectively integrated into physical education, and can enhance the physical education learning experience as well.

In all classrooms, students are required to read, write, listen, and communicate. Physical education is no exception (Lapp, Fisher, & Flood, 1999). Developing communicative and visual arts is important for the overall education of the student, and can improve thinking skills, creativity, and problem solving (Richardson, Sacks, & Ayers, 2003). Reading, writing, and speaking are all embedded in visual arts. By including visual arts in the classroom, teachers can motivate students to become more involved in communication (Lin, 2003). The majority of students are visual learners, and as a result, using visual representation is an effective way to aid student learning (Gil-Garcia & Villegas, 2003).

In the physical education classroom, there are many opportunities for using visual representation to enhance learning. Because physical education utilizes movement and learning skills that require moving the body in various ways, visual examples play a very important role. The use of manipulative materials is common in physical education, offering students both visual and physical (hands-on) references (Siverman, 1995). Students learn more vocabulary and content when they can see and touch objects. The

use of objects can improve the learning of both second language speakers and highly gifted students (Lapp, Fisher, & Flood, 1999; Silverman, 1995).

Traditionally, many physical education teachers rely on demonstration to teach skills. Implementing the use of pictures, charts, diagrams, and other visual materials in physical education has been slow to develop. Because the physical education classroom is a complex environment, there is often limited time and resources for implementing new ideas (Rairigh & Kirby, 2002).

Viewing and Visual Representation through Technology

Technology offers multiple ways to utilize visual representation in the physical education classroom that can be difficult to accomplish with traditional methods. The various avenues that can be offered through the use of technology can benefit the development of a variety of intelligences (Gardner, 1983), including visual/spatial and verbal/linguistic (Townsend & Gurvitch, 2002).

There is evidence that the use of technology can increase learning. Wilkinson and Hillier (1999) studied the effects of using a computer software program to teach volleyball skills. A control group was taught skills in a traditional manner, while the treatment group was taught the traditional skills, as well as using an interactive CD that taught skills. Results indicated that the treatment group had better skill test scores and the researchers observed that using the CD seemed to increase communication and collaborative learning among students.

Digital cameras are another excellent way to implement visual representation through technology. Cameras can be used to record data or as a means of self expression. Students can utilize cameras to express thoughts, feelings, and creativity related to

physical education and health (Savage & Goehl, 1999). For example, students in small groups could be asked to take pictures of each other balancing in creative ways. The pictures could be compiled on a bulletin board or chart as examples of creative balancing. Students might also use digital photos as a record of their learning. When fitness concepts are taught throughout the year, students could photograph activities related to those concepts. An example might be pictures of students taking their pulses before, during, and after activity. The photos could be organized using computer programs and put together to create a presentation. Students could show the presentations either at various times during the year, or at the end of the semester. The presentations would provide the teacher with an excellent opportunity for formative assessment, or could be used as a review of the concepts. Digital cameras can also be used by the teacher as a tool for feedback. The images provide the teacher with immediate visual reference that can be used to show students what they are doing well or what needs to be corrected. This immediate feedback can help students evaluate progress or skill performance and provides excellent formative evaluation (Rairigh & Kirby, 2002).

Video cameras can be used in a similar way to provide visual representation of activities or skills, or to create a visual story or record related to the physical environment. Clips taken in the classroom can be loaded onto the computer. The video can then be edited and viewed by students. A video's usefulness ranges from evaluating skill performance to creating documentaries. Video provides students with a unique opportunity to be actively involved in their learning. To produce a video, students engage in problem solving, organization, research, and creative thinking (Jonassen, Howland, Moore, & Marra, 2003). Creating video stories such as documentaries

provides students with opportunities to better understand themselves and their communities. One example is producing a documentary about the sports in which student's grandparents were involved. Such activities can also provide positive public relations for the physical education program with the community, as well as providing students with a better understanding of society (Jonassen et al., 2003).

Literature can be combined with video by reading books that have physical activity in them, then having students act out the activities while videotaping (Obernesser, 1999). There are a wide variety of picture books and informational books with sport and physical activity related themes. The benefits of incorporating literature into physical education can be increased student motivation and literacy skills. Video provides students with the opportunity to share their learning experiences with other students and also evaluate and assess their own learning (Jonassen et al., 2003).

Video can also create greater student interest in learning by providing students with new ways to be evaluated. Feedback can be provided to students by recording skill performance and can be an excellent form of peer assessment. Video feedback is effective because students are able to visualize exactly what they are doing. When individuals receive this type of feedback from a peer, it is more likely to be positive as the feedback is actually coming from the camera rather than a person. The result is that students are more motivated because the feedback is immediate, neutral, and accurate. It can also be helpful to the teacher, as it may be difficult for one person to accurately evaluate a whole class. The teacher can have students videotape each other, and then later watch the video. Watching the taped performance can improve the quality of

assessment. When students know that the teacher is definitely going to see each performance, they are likely to be more motivated to do well.

Research assignments that incorporate the use of movie clips can encourage students to investigate and become immersed in a topic. For example, students might research the history of a local sports league, or document the sport performance of a sibling or a friend. They could also cover a local sport-related event such as a triathlon or road race. Video can also be used to highlight various aspects of sports relating to the school or the student's sports interests (McKenzie & Croom, 1994).

Another great use of technology and visual representation is a physical education website. A website can be used to communicate with parents and students. The site can be utilized to provide links that can be used in physical education classes to direct students to physical education or health related websites (Castelli & Giles-Brown, 2001). Websites can also be used to email, communicate with the public about what is happening in physical education, and display student work or projects (Mohnsen & McCollum, 2000).

Strategies to Integrate Viewing and Visual Representation and Physical Education

Beyond technology, there are a wide variety of viewing and visual representation strategies that can be implemented in physical education.

Concept or idea mapping is an excellent way for students and teachers to make concepts and ideas more concrete through the use of visual aids. Physical education often requires students to brainstorm ideas or communicate complex ideas. Students might be asked to determine the best individualized exercise program, or to develop a

teamwork strategy. Concept mapping can assist students by giving them a simpler structure or graphic representation of ideas (Plotnick, 1997).

Concept maps are particularly effective in helping teachers evaluate their student's understanding of a concept. The teacher can provide the main idea in the center of a paper, and have students brainstorm ideas that link to the main idea. When students are finished, they have an outline that can be developed into an essay. The teacher can use the concept map or the essay to evaluate learning and understanding (Lapp, Fisher, & Flood, 1999). Research has demonstrated the effectiveness of concept mapping in identifying misconceptions learners have in their understanding of content (Plotnick, 1997).

Concept mapping can also be used to assist students in reading comprehension and learning. Students can be taught to visually represent text ideas or ideas that are presented in other forms such as lecture or discussion (Vidal-Abarca & Gilabert, 1995). Concept mapping is also an excellent way to design hypertext such as websites because the structure of a website is similar to a concept map. Computer software such as *Inspiration* is also an effective tool for teaching and implementing concept mapping. *Inspiration* is a graphics program that is designed for organization of ideas and mapping concepts. The user can create nodes and links in a variety of color and formats to create their concept map (Plotnick, 1997). *Inspiration* can be very helpful for designing projects and brainstorming.

Graphic or advanced organizers are similar to concept mapping and can be used to integrate visual representation into physical education. Connecting known and unknown material and increasing comprehension are two important benefits of graphic

organizers. Students understand key concepts in a more organized manner when they use graphic organizers, and they are more actively engaged in learning. Higher order thinking skills are also enhanced through the use of graphic organizers (Gil-Garcia & Villegas, 2003).

Hierarchical organizers can be used in physical education for demonstrating roles of team members. For example, in goal sports such as soccer, a hierarchical organizer can show the relationship of the goalie to the defense and offense, and can help new players understand the importance of defending the goal. The USDA food guide pyramid is a hierarchical organizer which is often used in physical education and health. Sequential organizers such as timelines can be used in physical education for historical information. Evaluative organizers such as scales and rubrics are very effective tools in evaluating skills.

Outlining and sequencing are also effective visual teaching tools (Saunders, 1995). In physical education, these techniques can be used when teaching concepts such as exercise physiology. Sequencing can be particularly helpful in teaching skills, and visual sequences of skill acquisition can help students visualize the steps involved in that skill development.

Drawing can be used to incorporate visual learning in physical education. Diagrams are often used by coaches to explain strategies. When students draw pictures it is easier for them to understand visual-spatial concepts (Silverman, 1995). Visual-spatial concepts are embedded into many sports and team concepts that are used in physical education. Drawing requires the student to develop visual pictures that can indicate the student's knowledge about the subject. Creativity is also an important aspect of drawing

exercises (Sitz, 1997). In physical education, drawing can be used as an assessment tool. Students can be asked to draw a proper formation, or what a skill technique should look like.

Charts and bulletin boards are an ideal form of visual representation for the physical education environment. The gymnasium, where physical education classes typically meet, contains large areas of wall space that can be effectively utilized. Charts can be used in a variety of ways. One way to utilize them is a constructivist approach. When using this approach, the teacher creates bulletin boards associated with a unit being taught in physical education. The boards contain pieces of information relating to a skill or concept. Students go to the board in groups, and they participate in problem solving by using the information to draw conclusions. An example for elementary students would be bulletin boards containing various questions about a particular animal. These questions would be designed to lead students to make conclusions about how that animal would walk, and then they would try the animal walk.

Students could utilize a bulletin board to peer teach using a cooperative learning method where groups of students become experts on a subject. Groups of students are assigned to each bulletin board, and given information on the topic. They then study and discuss the topic with their group. After they have been able to become “experts” on the topic, the groups are mixed with one expert in the group from each topic area. The groups then move around to each bulletin board, and the expert teaches the group. This technique allows students to construct meaning and be actively involved in the learning process (Bonello, 2001).

Word walls are created when teachers post letters or words that are associated with units or lessons on the wall of the gym or classroom. Words can be grouped by theme, or the board can be interactive, allowing students to write words related to what they are learning under each letter of the alphabet (Cone & Cone, 2001).

Word association charts, which are closely related to bulletin boards, contain a word and a picture that is related to the word. Using the picture helps students make connections between a physical or skill activity and vocabulary (Shimon, 2004).

Bulletin boards, word walls, and word association charts can be utilized as both teaching and assessment tools. They also can be used to display student work, and as a result, give students an opportunity to participate in the physical education environment (Bonello, 2001).

Drama adds another interesting dimension to physical education. Research studies have found that drama is an effective medium for literacy development. When students act out a story or watch a performance, their motivation increases and the visual effects provide scaffolding for emerging readers by providing background experiences for future reading. Verbal and vocabulary development also is enhanced as students make connections between words and what they see. Dramatic performance also can be used as an assessment tool, as it provides immediate feedback about student understanding of reading material (Lin, 2003). For example, after a reading assignment on body composition, students could role-play the types of changes a person should make in their life to improve their body composition. Drama could also be used to review significant historical events that have affected sports and physical activity.

Conclusion

Incorporating viewing and visual representation concepts of language arts into the physical education classroom is an important way to improve student's learning experience by creating a holistic educational environment. A holistic approach, sometimes referred to as "New PE," views the physical aspect of learning as an integral part of thinking, creating, and understanding (Bonello, 2001). This teaching approach provides students with an enriched environment that maximizes the learning opportunities available. Compelling research has indicated that there are close connections between language and motor development (Murata, 2003), and Dr. Carol Smith found that when students learned to juggle, their handwriting and visual tracking skills improved (Cone & Cone, 2001). Such research reinforces the belief that a learning environment that utilizes movement and language can provide a very potent learning experience.

Viewing and visual representation in the physical education classroom adds interest to content material and enriches the environment. One teacher that used bulletin boards said, "Students were excited about what they saw on the bulletin board, and it really motivated them to work together. You could see the problem solving taking place as they answered the questions physically". Active involvement of students, both physically and mentally, serves as a great motivator. Students who are having fun while learning will want to learn more. As you incorporate viewing and visual representation into your physical education classroom, your students will be enthusiastic and interested, and you will be providing your students with a richer learning experience.

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