

Perceptions of Assessment in Elementary Physical Education: A Case Study

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Abstract

The purpose of the study was twofold: (a) to examine a teacher's perceptions of attempting to implement assessments aligned with the NASPE standards and (b) to examine students' perceptions of assessment in physical education. Participants were 46 4th grade students and their physical education teacher. Data were collected through a Likert-scale attitude questionnaire, documents and interviews with 27 of the 46 students and their teacher. Questionnaire data were analyzed with descriptive statistics. Interview data were analyzed qualitatively. Results indicated that both teacher and students perceived that the teaching-learning process was enhanced through the process of using assessment aligned with the NASPE standards. Secondly, marginalization of physical education impacted both students' and teacher's perceptions of assessment.

Introduction

Education standards have become part of the educational landscape. National standards have been developed for a variety of academic disciplines (e.g., NCTM Standards, 2000 for math; NSES Standards, 1995 for science). Physical education has developed its own national standards (National Association for Sport and Physical Education, 1995) with many states such as New York, South Carolina, and Massachusetts developing individual standards as well.

The NASPE standards were designed to provide physical education teachers with content and performance standards that provide both direction and accountability. The standards enable teachers

to deliver instruction that addresses what students should know, understand, and be able to do in physical education.

Closely tied to standards and the notion of competence is the assessment of educational outcomes. A strong relationship between standards and assessment needs to exist to ensure that students become competent in the standards. Assessment provides a concrete method to measure the degree to which standards have been met. Assessment aligned with the standards measure the degree students can demonstrate, in context, their understanding and performance relative to identified standards of learning (Lambert, 1999).

Assessment that is aligned with standards in physical education may be difficult to achieve for many reasons. Historically in physical education, assessment has been lacking. Researchers have attempted to identify why there is a lack of assessment in physical education (Hensley, 1990; Matanin & Tannehill, 1994). Many physical education teachers do not assess because they believe that there are problems such as lack of time, overcrowded classes, and/or a lack of formal preparation to conduct assessment in the school setting (Hensley, 1990; Lund, 1993; Veal, 1988).

Second, in addition to contextual factors it appears that teacher thinking about assessment may also contribute to the degree of success in aligning assessment with educational standards. Researchers have investigated teachers' thought processes about assessment and have suggested that perhaps part of the reason teachers struggle with assessment is because some teachers experience great discomfort with assessment (Barnes, 1985). This, too, may be the case with physical

education teachers. Researchers indicate that some physical education teachers do not believe that assessment is necessary (Kneer, 1986). Furthermore, some teachers possess goals that they espouse but do not assess those goals (Veal, 1988, 1992; Matanin & Tannehill, 1994). Instead, teachers often base evaluations more on whether students comply with class rules for behavior and participation in learning activities than for learning (Matanin & Tannehill, 1994).

Third, students' thinking about assessment may also contribute to the degree of success encountered when attempting to align assessment with educational standards. There has been a developing research base regarding student perceptions of physical education, in fact there has been an entire monograph dedicated to student perceptions (Graham, 1995). Research results on student perceptions have revealed that most elementary students view the physical education curriculum as activity units (Ratliffe, Imwold, & Conkell, 1994). Furthermore, some elementary students have difficulty distinguishing between physical education and recess, while still others view physical education as waiting in lines and following the rules (Ratliffe, et al., 1994; Solmon & Carter, 1995). Although this recent emergence of research on student perceptions has been fruitful, research on student perceptions of assessment is still lacking.

Educational research outside of physical education indicates that assessment positively influences students' perceptions of the teaching-learning process by allowing students to have a role in documenting their learning as well as helping them to connect in different ways to the content they are learning (Spage, 1996). The degree to which students are connected to the content may influence the amount of effort they put into their academic work. Results from research have indicated that students who believe increased effort influences achievement are more likely to learn than students who believe that learning depends on teachers and other people (Wang & Stiles, 1976).

Research in physical education has also indicated a possible link between effort and achievement. Researchers have indicated that if effort can be increased, then skill can be enhanced (Veal & Compagnone, 1995). Assessment in physical education may be one tool that increases the effort put forth by students. Researchers have found that assessment helped students to attend to learning more closely and allowed them to have a clear understanding of what the teacher expected (James, 2001). Characteristics of assessment such as these may motivate students to put forth more effort that may result in enhanced achievement.

Fourth, marginalization of physical education may also play a role in the success of aligning assessments to educational standards. Researchers have found that collection of systematic assessment has not been the norm in physical education, which has limited student effort, achievement and subject status (Matanin & Tannehill, 1994). One suggested reason for the marginality of physical education has been attributed to its seemingly practical nature in educational contexts that favor overtly intellectual activity (Kirk & Tinning, 1990). Another reason for the marginality of physical education that has been identified is the lack of accountability in physical education (Macdonald & Brooker, 1997). Researchers have indicated that through assessment students know what they are held accountable to learn (Boyce, 1990).

Although teachers' perceptions of assessment in physical education have been investigated, research that examines the perceptions of a teacher attempting to align assessment with the NASPE Standards and students' perceptions of assessment is lacking. Therefore, the purpose of this study was twofold: (a) to examine an elementary physical education teacher's perceptions of attempting to align assessment with the NASPE standards and (b) to examine the perceptions of students about assessment practices in physical education.

Methods

Setting and Participants

The study was conducted in a suburban elementary school located within 20 minutes of a large Midwestern metropolitan city in the United States. The physical education teacher had recently spent time examining the NASPE Standards (1995) and working with a colleague to align the district curriculum with the NASPE Standards as well as creating assessments aligned with the standards.

Elementary School

The elementary school was a suburban school with an enrollment of 440 students ranging from Kindergarten through sixth grade. Overall the student body was fairly diverse in terms of ethnicity.

Table 1

Participant Ethnicity

Ethnicity	Percentage
Caucasian	47%
African American	45%
Asian American	8%

Entry into the site included gaining district approval as well as consent to participate from the teacher, students and their parents. All participants (100%) signed a written consent explaining the study in detail.

The elementary school participants included two intact fourth grade classes. The two fourth grade classes participated in physical education class 35 minutes twice a week. One of the classes had 22 students and the other 24 for a total of 46 students (30 female/16 male), (52% Caucasian, 43% African American, and 5% Asian American). All 46 students (100%) participated in the study.

Students were selected because the teacher had decided to focus on implementing assessments based on the NASPE standards (NASPE, 1995) with fourth grade classes from the beginning of the academic year in which the study was conducted. At the time of data collection, students had experienced this assessment and grading system through two rounds of report cards.

As a result of this focus, 50% of each of the fourth grader's quarterly report card grade was derived from assessments aligned with the standards. The other 50% was derived from sporting behavior and effort (30%) and being prepared for class (20%). The teacher explicitly defined sporting behavior as following the rules and being respectful of others. In addition she defined being prepared as wearing tennis shoes and loose clothing.

The teacher, who was a 36-year-old Caucasian female, also participated in the study. With 12 years of experience, she taught grades 1-6 and was the only physical education teacher at the elementary school. The curriculum was organized around low organized games, dance, and gymnastics activities.

Data Collection

Data were collected over three months in the Spring of the academic year in which the teacher had made an effort to align assessment with the NASPE standards in four ways: (a) questionnaire, (b) formal and informal interviews, (c) an electronic journal kept by the teacher, and (d) documents. The administration of the questionnaire and interviews were conducted at the end of the three-month data collection period. The electronic journal kept by the teacher began at the beginning of this period and continued for three months. Documents such as sample assessments and the local curriculum were also collected.

Questionnaire. A 10 question Likert-scale attitude questionnaire (Table 2) was administered to all 46 (100%) of the students to determine perceptions of assessment in elementary physical education. Perceptions for the purpose of this

Table 2

Student Questionnaire Data

Q#	Question	Strongly Agree	Agree	Disagree	Strongly
		n %	n %	n %	n %
1	I like physical education	32 69.6%	14 30.4%	0 0%	0 0%
2	Physical education is an easy "A" on my report card	20 43.5%	17 37.0%	9 19.5%	0 0%
3	Knowing what the teacher is grading me on helps me to learn more	15 32.6%	28 60.9%	3 6.5%	0 0%
4	Physical education is as hard as my other classes	2 4.3%	3 6.5%	24 52.2%	17 37.0%
5	I believe how hard I try in physical education should count more toward my grade than how good I am at an activity	29 63.0%	10 21.7%	5 10.9%	2 4.4%
6	My physical education teacher always tells us how we are going to be graded	12 26.1%	29 63.0%	5 10.9%	0 0%
7	Physical education is as important as my other classes	24 52.2%	17 37.0%	3 6.5%	2 4.3%
8	The grade the physical education teacher gives me is fair	31 67.4%	15 32.6%	0 0%	0 0%
9	I am upset when I receive a poor grade in physical education	17 37.0%	15 32.6%	4 8.7%	10 21.7%

study are defined as one's view or interpretation of something. The questionnaire consisted of statements related to assessment and how the teacher used assessment in the classroom. The questionnaire was conducted twice, once at the end of the three-month period and again three weeks later to establish reliability. Reliability of the questionnaire was .83, which was established using the Guttman split-half coefficient.

Content validity was developed primarily by consulting with a panel of experts that included two research experts as well as two elementary physical education teachers. In addition, the questionnaire was pilot tested with fourth grade students and revisions were made.

Interviews. Interview data were collected through a formal semi-structured interview with 27 (12 boys/15 girls) of the 46 students (59%). Students were selected through a stratified random process based on gender, ethnicity, and ability level. Ability level was determined by the physical education teacher who placed students into one of three ability groups: high, medium, or low. Student interviews lasted 15-20 minutes and focused on students' perceptions of assessment in physical education. An example of student interview questions included questions such as "How does assessment affect your performance in physical education?"

In addition the teacher was interviewed formally using a semi structured interview guide (60

minutes). The interview explored her perceptions of assessment and the NASPE Standards as well as her perceptions of attempting to align assessments with the NASPE standards. All interviews were tape recorded and transcribed verbatim.

Informal interviews that were more conversational and consisted of flexible open-ended questions also occurred between the teacher and the researchers. Notes from these informal interviews were hand written promptly after the conversation had taken place. These interviews usually focused on assessment and served to clarify any researcher questions.

Electronic journal. The teacher kept a reflective journal that consisted of perceptions of her attempts to implement assessments that were aligned with the NASPE Standards and her responses to questions about assessment posed by the researchers. One journal entry per week was completed electronically and e-mailed to the primary researcher during the week. The journal consisted of 12 entries recorded from the beginning of data collection through the duration of the study.

Document Data. Document data in the form of sample assessments, grading procedures, and the district curricula were collected to ensure triangulation. The assessment tools listed the critical components of skills on a recording sheet that contained all students' names. The components were assessed on a Likert 5-point rating scale that assessed overall performance. When assessing skills the teacher observed each student a minimum of five times before recording the assessment. Document data were used to support and help clarify assertions made by the teacher and students in interviews.

Data Analysis

Data analysis was ongoing throughout the data collection process. The questionnaire data were analyzed using descriptive statistics. Frequencies, means, and percentages were calculated for all questionnaire responses.

Interview data and teacher journal entries were analyzed qualitatively through constant compari-

son (Miles & Huberman, 1994; Strauss & Corbin, 1998). Data were coded using open and axial procedures to create categories. Categories were examined for common elements that ran throughout and tied them together. Themes were then extracted from these categories. Data were then selectively coded for examples that illustrated the themes (Neuman, 1994).

Trustworthiness

Data trustworthiness was established in two ways. First, triangulation was ensured through the questionnaire, interview transcripts, teacher electronic journal, and document data such as sample assessments and the district curriculum. Secondly, triangulation was further established through peer examination and discussion of the findings as they continued to emerge throughout data analysis (Merriam, 2001). The peer examination took place by asking colleagues to comment on and discuss findings as they emerged.

Results

The results in this section are reported through two themes that represent an umbrella of beliefs and ideas the teacher held about attempting to align assessment with the NASPE standards as well as the students' perceptions about assessment. The results will be reported in two sections: (a) assessment and the teaching-learning process and (b) factors impacting assessment. Generally, findings indicated that both the teacher and the students perceived the teaching-learning process was enhanced through assessment.

Assessment and the Teaching-Learning Process

Overall both the teacher and the students perceived that assessment improved the teaching learning process. The teacher described how the teaching-learning process was improved in two distinct ways. First, she reported that focusing on aligning assessment with the NASPE standards helped her to become more reflective about physical education content and how she delivered that content to students. She reported, "A lot of what

some things, but now I assess them. Doing assessment has made me a better teacher because I am more aware of what I want them to learn. (3-21-99; Formal)

Secondly, the teacher believed that through focusing on assessment the teaching-learning process improved because she was more successful in communicating with students about what they were being held responsible to learn. The teacher, through the electronic journal, described how trying to align assessment with the standards improved her communication about learning with the students. She wrote,

Since I have tried to implement the assessments I have to plan ahead for what I want to assess and make it clear to students. I teach the students the concept and I verbally quiz them often and then tell them that they are going to be assessed. I tell them that I am going to assess them and then have them engage in an activity, which I can assess their ability. (2-16-99; E- Journal)

Assessment also seemed to enhance the teaching-learning process for students in two ways. First, when the teacher communicated the assessments to students, their understanding of what the teacher expected them to learn was enhanced. Results from question three of the survey indicated that 93.5% of the students strongly agreed or agreed with the statement that they learned more when they knew what criteria the teacher was looking at when grading (assessing).

Second, assessment promoted the teaching-learning process for students by improving their perceptions of their performance in physical education. Students perceived that when the teacher communicated that assessment would take place their performance improved. Students perceived that their performance improved because they put forth more effort when they knew exactly what they were being held accountable to learn. For example, one student expressed, "It [assessment] improves my performance by showing me

what I have to do before I actually do it." Another added, "It [assessment] tells you if you should get better or if you should try more or if you're good at it and maybe you should try something else that may be a little harder." A third commented further, "It [assessment] can improve my performance by watching (the student monitoring her own performance) how I do it and if I don't do so well, I can try again and do it better. I know what to do and how to do it."

Students also seemed to put forth more effort when they knew that the teacher was assessing them because they perceived the increased effort would result in a better grade. When asked how assessment affected his performance, one student stated, "I try harder and I think I get a good grade because I try my best." Another also believed that through increased effort her grade would improve. She stated, "If I am running, I try to run harder to improve my grade." A third added, "I get nervous when I know she is grading us. I try harder and I want to improve my performance."

Factors Impacting Assessment

Physical education has been shown to be a marginal subject in schools (Macdonald & Brooker, 1997). The teacher's perceptions of how she believed her students viewed assessment may have been influenced by the marginality of physical education, which often results in physical education teachers having less status than other academic subject matter teachers. She believed that her students enjoyed physical education, however, she also believed they did not deem it as important as other school subjects that used assessment of skill to determine a grade. She further believed they might not embrace assessment because of this, which might be somewhat problematic in her attempts to implement assessments based on the NASPE standards. She elaborated further on her perceptions of how her students viewed physical education when she stated,

I believe my students enjoy physical education, but most of them do not consider it to be as important as other

classes. I think the time they have in special areas (i.e. physical education, music, and art), because it is less, it means less. Students see it as less important because there is less time spent in physical education. They see that if a class period is missed, the work is not made up. Students spend time every day on math, social studies, and science. Because they do these every day and physical education is only twice a week; they do not believe physical education is as important. (3-24-99; Informal).

Nonetheless, the teacher perceived that although the students did not consider physical education to be as important as other subjects, physical education gained importance in her students' eyes as a result of assessment. The teacher commented, "I can tell you if I don't assess, the kids don't take it seriously. If I am assessing they concentrate and focus on what they are doing. They focus on the skill I am assessing and not as much on competition." (3-21-99; Formal) A student supported the teacher's comment when she stated, "Because she grades us we don't mess up or do something wrong, we know to focus on the skill and not just goof off."

Results from the questionnaire (Table 2) suggest further support for the teacher's perceptions that students may marginalize physical education, however, the questionnaire does not support her perception that the students do not view physical education as important. It does, however, reveal that the students do not consider physical education to be as difficult as other subjects. Question 4 of the questionnaire revealed that 89.2% of students believed physical education was not as rigorous as their other classes. Students not only indicated that physical education was not as rigorous as other classes, 80.5% (Question 2) believed that it was easy to earn a grade of "A" in physical education.

Student marginalization of physical education also influenced student perceptions of assessment. Although results from the questionnaire (Ques-

tions 3 & 6) indicated that the assessments helped them learn because they knew what the teacher was grading, many students believed effort or how hard they tried should be the major factor in determining their report card grade. Almost 85% percent of the students reported on the questionnaire that they believed that how hard they tried in physical education should count more toward their grade than how good they were at an activity (Question 5).

Interview data support the results from the questionnaire in that only 10.9% of the students interviewed believed that performance on the assessments influenced their grades in physical education. Students' comments about how they were graded reflected their perception that effort was the basis of their grade, not their performance on the assessments. For example, one student commented, "She looks at how we participate and not really how we do. She looks more for fairness and kindness." Another added, "We're graded on how much we try, not how good we are." A third commented further, "It depends on how hard you try. It doesn't matter if you are good at the activity or not."

Some students, however, perceived that the assessments were important and helped to demonstrate their learning to the teacher. The effects of marginalization did not seem to influence these students' perceptions of assessment. For instance, one believed the assessment actually helped her to get a good grade by improving her performance. She stated, "I know what to do and how to do it. If I do it the right way I am going to get a good grade." In addition, two students also shared examples of skill execution that they considered to be important factors in receiving a good grade in physical education. One stated, "If she is grading the overhand throwing motion, you step with the opposite foot and your side is to the target." The other added, "The teacher grades us on if we show the correct form for throwing, kicking, and catching."

Discussion

This study provided several salient findings that contribute to the literature on teachers' perceptions of aligning assessments with the NASPE standards. In addition it also contributes to students' perceptions of assessment in physical education. The significance of the process of aligning assessment with the NASPE standards cannot be overemphasized. Assessment, if done well, makes teaching "to the test" desirable (Tannehill, 1999). The results of this study indicated that both students and the teacher perceived that through the process of aligning assessment with the NASPE standards that the teaching-learning process was promoted in three ways.

First, the teacher perceived that her knowledge of the content she intended her students to learn was enhanced as she began to recognize the connection between her instructional tasks and assessment. Furthermore, she also was able to communicate more fully to students her learning expectations as a result of focusing on aligning assessments with the standards. In essence, Ms. Smith became more responsible for her students' learning by becoming more knowledgeable of content and more adept at communicating that content to her students.

Second, findings further indicated that students' perceptions of assessment also facilitated the teaching-learning process. Student perceptions from this study support previous findings (Boyce, 1990) in that students indicated that their learning was enhanced if they knew beforehand what the teacher was going to assess them on because they knew exactly what the teacher wanted them to do.

Third, the teaching-learning process was also enhanced because the teacher began to align her instruction by focusing on aligning assessment with the NASPE standards. As discussed earlier, through the process of aligning assessments with the NASPE standards, she also became more focused on content and learning activities that reflected both the standards and assessments. The combination of her focus on content as well as aligning assessments with the NASPE standards

contributed to her instruction becoming more aligned.

Holding students accountable for learning goals through assessment may contribute to minimizing the marginality of physical education. As a result of the teacher's effort to focus on aligning assessment with the NASPE standards she perceived that the marginality of physical education by her students was decreased. Although she perceived that her students' marginal views of physical education decreased because of assessment, many of her students still allowed the marginal status of physical education to affect their perceptions of the learning outcomes of physical education. As seen in the response to Question 5, most students believed that in physical education it was more important to try hard than to be skilled at an activity. Researchers have indicated that teachers have contributed in perpetuating this belief (Matanin & Tannehill, 1994). Nonetheless, in this study the teacher made a concerted effort to base evaluations on the assessment of learning outcomes in addition to sporting behavior and participation. Her efforts may have been in vain because the commonly held belief that evaluations are based on student compliance and effort in this case resulted in incongruence between what the teacher and students believed to be the important outcomes of physical education.

Although incongruence existed between what the teacher and students believed to be the important outcomes of physical education, assessment served as a form of accountability and resulted in students placing more importance on skill learning as evidenced by them putting forth more effort when they were being assessed. This finding may be salient because researchers have indicated that if effort can be increased, skill can be enhanced (Veal & Compagnone, 1995). This points toward a possible connection between assessment and increased student effort. This connection is illuminated in this study because students reported that they put forth more effort when they were being assessed. With the increased effort as a result of assessment, students have more oppor-

tunities to respond which may enhance skill as Veal and Compagnone (1995) suggest.

Conclusion

Results of this study provide educators with some initial insights into the perceptions of these 4th grade students and their teacher about assessment in physical education. Although this case study has a limited scope in the sense that participants included only two classes of students and their teacher, it does suggest that assessment aligned with educational standards has the potential to enhance the teaching-learning process. In this study assessment enhanced student learning by allowing the student to know what they were expected to learn and allowed them to put forth more effort in attempting to learn these things. In addition, using assessment based on student performance as formal accountability linked to a grade may further enhance the teaching-learning process by decreasing the marginality of physical education, which may lead students to value physical education. Unfortunately in this study the incongruence between what the teacher and students believed to be the important outcomes of physical education may have minimized the effect assessment linked to a grade had on the degree of marginalization.

Assessment has the power to promote the teaching-learning process through providing quality instruction. Not only does assessment allow the teacher to know if students are actually achieving the outcomes they are assessing, it also allows them to be able to reteach content in which students have not demonstrated the desired level of competency. The process of aligning assessment with standards may not only lead to enhanced student learning and quality instruction, but also it may help teachers to begin to more clearly see the connections of how assessment fits with curriculum and the instructional process.

Finally, and perhaps most significantly, this study provides an alternative method to examine the absence of assessment in physical education. For years the lack of assessment has been discussed in relation to contextual problems such as

a lack of time, overcrowded classes, and a lack of formal preparation to conduct assessment in the school setting (Hensley, 1990; Lund, 1993; Veal, 1988). These factors may play a role in the lack of assessment in physical education; however, this study suggests that the problem of the absence of assessment should be refrained. Perhaps a better context to examine the lack of assessment in physical education would be in terms of teacher knowledge of content and how to link that content with assessment and educational standards.

The findings of this study extend previous work in this area and suggest that assessment aligned with educational standards can enhance the teaching-learning process in physical education. Further research needs to be conducted to determine what effect assessment may have on student and teacher perceptions as well as instruction at educational levels other than elementary school. Furthermore, research should be conducted to attempt to measure the degree of learning that is achieved in relation to the educational standards through the process of aligning assessment with the standards.

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