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# How Wii Teach Physical Education and Health

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## Abstract

The use of educational computer games in physical education (PE) has become more popular in recent years and has attracted research interest. The aim of the article is to investigate how physical activities and images of the human body are offered by the game. The results show how the “teacher” constituted in the games is one who instructs and encourages the players to exercise and think about their bodies, but not a “teacher” who can help students to investigate, argue, or discuss images of health and the human body. We argue that the use of a wide range and variety of ways of teaching would make the teaching richer and offer a deeper understanding about the body and health.

## Keywords

teaching, artifact, physical education, exergames

## Introduction

The use of digital technologies, for example, educational computer games, in school has become more popular in recent years and has attracted both pedagogical and research interest (e.g., Casey, Goodyear, & Armour, 2016; Gee, 2003; Hsu, Hung, & Ching, 2013; Linderoth, 2004). This is also the case in the school subject of physical education (PE), where games involving movement—so-called exergames—have been a primary concern for many scholars (for overviews, see Ennis, 2013; Papastergiou, 2009; Quennerstedt, Almqvist, Meckbach & Öhman, 2013).<sup>1</sup>

The potential use of exergames in PE has been animatedly discussed by practitioners, policy makers, and researchers, each of whom focus on different expectations on the uses of the games.<sup>2</sup> In contrast to traditional video games, some researchers and practitioners expect that exergames can be used to motivate children to be physically active and to promote fitness and better health (Quennerstedt et al., 2013; Ennis, 2013; Kooiman & Sheehan, 2015). This approach corresponds with discussions concerning motivation in PE in general (e.g., Biddle & Asare, 2011; Fairclough, Hilland, Stratton, & Ridgers, 2012; Standage, Duda, & Ntoumanis, 2003) and the expectation that PE should counteract the risk of sedentary behavior and obesity in society (Cale & Harris, 2013; Gard & Wright, 2001; Kirk, 2006).

Despite the growing body of research on the use of digital technologies and exergames in education, questions need to be asked about the content and forms of teaching that are offered or imposed by the games and what the potential

benefits and risks are in terms of educational value (Casey et al., 2016; Ennis, 2013; Vander Schee & Boyles, 2010; Öhman, Almqvist, Meckbach & Quennerstedt, 2014). With regard to content, Öhman et al. (2014), for example, show how health and the human body are portrayed by the games, while Öhman, Öhman & Sandell (2016) examine the view of nature that is offered by the games and highlight the consequences that this may have for students’ relationships with nature and their future environmental commitment.

It is always difficult to separate educational content from forms of teaching because they are invariably linked together. However, in this study, we are interested in *how* a specific content is offered by the games and how this might affect students’ learning. We want to highlight the notion that different ways of teaching are central parts of meaning making processes in that they can facilitate or hinder the inclusion of content privileged in educational practices. The aim of the article is thus to investigate *how* physical activities and images of the human body *are offered* by the games.

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## Teaching With Artifacts

Different arguments for the use of artifacts in educational settings have been put forward through the history of education. Research has shown that their use in educational settings is highly influenced by the teaching traditions, habits, and intentions in the specific practice (cf. Almqvist, 2005; Casey & Jones, 2011; Cuban, 1986; Marklund, 2013). When introducing new artifacts like digital technologies and in this case exergames, designers and others often have high expectations as to how they might improve teaching and learning (cf. Casey et al., 2016), an obvious example being the expectations to make children more physically active.

Artifacts such as video or computer games have been developed for use in various school subjects. In a review of research literature on the use of exergames in PE, Ennis (2013) describes the potential benefits of using exergames in educational practices. However, she also argues for further research on the use of games in educational settings. In another review, Quennerstedt et al. (2013) show that high expectations are formulated by both researchers and practitioners regarding the use of exergames as an alternative to traditional PE and as a technical solution to problems of place and equipment. They also show that the major theme in the discussion about exergames focuses on how the games may increase physical activity levels and thereby contribute to combating child obesity (cf. Ennis, 2013).

Even though most of the literature on this subject focuses on the benefits of exergames, Quennerstedt et al. (2013) have identified two arguments against using exergames in PE. The first is that exergaming may have a negative effect on children's self-image. The second is that the use of exergames in school may lead to a problematic control of corporeality (cf. Millington, 2009; Vander Schee & Boyles, 2010). These arguments are not about physical activity levels per se, but refer to the kind of meanings about health and body that the exergames offer. In a study of the content of the games, Öhman et al. (2014) show how the games offer specific views of the body, how these views can be understood and how they influence the players' identity formation.

The games messages do not only equip students with knowledge about health and body, however, but also guide them towards an understanding of the kind of person they ought to be or become . . . The messages in the game, where health and the body are relating to appearance, beauty, youthfulness and slenderness, intensify the approach that has been characterized as healthism . . . (Öhman et al., 2014, p. 11)

In a similar way Francombe-Webb (2016) shows how girls' embodied sense making is clearly related to slenderness as well as to their embodied femininities. Furthermore, Gibbs et al. (2016) highlights how dance exergames can be offered in the teaching of dance in PE, where the games may function as instructor, facilitator, and inspirer. Nyberg & Meckbach (2015) continue this argument showing students'

knowledge in relation to dance exergames. Meckbach, Gibbs, Almqvist & Quennerstedt (2014) show how different movement qualities are offered in the games.

Using artifacts in educational settings can enable teachers and students to do things that would otherwise not be possible. Also, the specific ways in which artifacts are used depend, among other things, on different users' views of teaching and learning (Almqvist, 2005). This means that how and for what purpose artifacts are expected to be used is a genuine educational problem. The history of education is full of different expectations and optimistic attempts to complement—and sometimes replace—teachers' teaching with the use of artifacts (Cuban, 1986).

In different perspectives on teaching and learning, different ways of using artifacts in educational settings have been highlighted, implemented, and studied (Ellington, Percival, & Race, 1993; Koschmann, 1996). In short, behaviorists focus on using artifacts for instruction and feedback (cf. Skinner, 1958, 1968/2008), while constructivists often focus on artifacts that can help students to search for information, interact with, and construct knowledge (cf. Kim & Baylor, 2006; Papert, 1993; Vosniadou, Skopeliti, & Ikospentaki, 2005). In a sociocultural perspective, the concept of artifact is central and is seen as one of the sociocultural factors influencing human action and learning (cf. Wertsch, 1998). A discussion between researchers is also currently in progress about the influence of artifacts on the educational situation and on students' learning (cf. Lidar, Almqvist & Östman., 2010).

Going into too much detail about the debate between different perspectives on learning is, however, beyond the scope of this article. Our idea here is rather to highlight and contribute to a critical discussion about the kind of *teaching* that is expected to be delegated to exergames and other artifacts. Consequently, we would like to turn our attention to *how* physical activities and images of the human body are taught by exergames. From this description it is, however, worth noting that digital technologies may be used in various ways and for different purposes. We will also get back to the question about learning theories in the end of the article.

### *Epistemological Move Analysis*

To analyze how exergames offer meanings about the body and health, we have performed an *epistemological move analysis*—an analytical tool introduced by Lidar, Lundqvist, and Östman (2006) and used in studies of teaching in various contexts (cf. Hedefalk, Almqvist & Lidar, 2014; Lundqvist, Almqvist & Östman, 2012; Rudsberg & Öhman, 2010). Epistemological moves are actions that teachers use to direct the students' meaning making in a certain direction. Lidar et al. (2006) develop a methodological framework of teaching and learning that focuses on how teachers and students constitute practical epistemology—that is, what should be regarded as knowledge and relevant ways of attending knowledge—in interaction in educational settings. Instead

**Table 1.** Teachers' Epistemological Moves.

Instructive move	The teacher instructs the students on what they need to do to participate correctly in the situation.
Confirming move	The teacher confirms that the students have acted correctly.
Reorienting move	The teacher directs the students' attention toward other things that are worth doing to change the direction of the meaning making.
Generative move	The teacher generates explanations and points to what needs to be paid attention to and gives reasons as to why this is important.
Reconstructive move	The teacher directs the students' attention to the facts they have before them but that they have not yet paid attention to.
Evaluative move	The teacher shows the students the importance of comparing, evaluating, and/or testing different arguments in the discussion.

of, for example, studying what beliefs or thoughts about teaching, learning, and knowledge that may govern teaching, they are interested in what is constituted in practice. In this article, we use and develop this approach. We will show how it allows us to understand teaching and learning with artifacts in education.

In their study of teaching of science in compulsory school, Lidar et al. (2006) identify five different epistemological moves: instructive, confirming, reorienting, generative, and reconstructive. Rudsberg and Öhman (2010) develop this analytical tool further in a study of which epistemological moves teachers use when trying to accomplish a pluralistic education for sustainable development. They identified one additional epistemological move (with two subcategories), namely, the evaluative move, which is used by the teacher to direct the student's meaning making toward various value issues.

In this study, these categories are used, developed, and specified in the context of using exergames in teaching of PE. In Table 1, we summarize the different moves identified in previous studies (cf. Lidar et al., 2006; Rudsberg & Öhman, 2010; Hedefalk et al., 2014).

As it is not possible to do everything at the same time, teachers need to privilege actions in their teaching. This means that we may not be able to find all the described epistemological moves in a certain teacher's teaching. Thus, teachers' selections of epistemological moves differ depending on their views of or approach to teaching and learning (Lundqvist et al., 2012).

Furthermore, when using epistemological move analysis as an analytical tool, it is important to note that epistemological moves are constituted in the interaction between people and are not predetermined. This means that a teacher—or an artifact—can give instructions and so on in a practice, but if

these actions do not lead to a change in the meaning making process they can only be considered as attempts to influence others' actions and not as epistemological moves. It is only when an action has some kind of effect on the meaning making process that an epistemological move has been constituted. In this study, we identify the moves offered by the exergames and discuss what they would mean if they directed the players' meaning making while playing the game. The analytical tool has been developed in studies of science education practice. We use the moves that have already been identified, but are also open to finding new and different epistemological moves. In our analysis, we use, develop, and specify the epistemological moves in the context of teaching in PE.

## Research Design and Methodology

In this study, we analyze video recordings of ourselves playing exergames. In line with Aarseth's (2003) methodological suggestions, we argue that hands-on experience is a valid way of exploring the content of the games. The empirical material consists of video recordings from sessions in which the exergames were played and discussed. We played the most popular games in the context of PE—Wii Fit Plus and EA Sports Active 2—to understand what kind of messages about the body and health they offered. These specific games were selected because they are commonly used in the schools where exergames have been introduced (cf. Quennerstedt et al., 2013).

In total, the empirical material used here consists of 3 hr and 17 min of film. We set up the gaming equipment in a room and recorded our activities using a video camera. One of the authors of this article played the games while the other researchers in the project observed and took field notes. We also discussed the game and the playing while doing the recordings. Hence, the practice recorded and analyzed is not an authentic educational setting with students who are expected to learn something specific. Instead, we were interested in trying out the games in different ways to analyze what it may offer in terms of teaching, body, and health. Thus, we investigated whether different kinds of players were given different instructions and received different feedback. It is possible to assume that the manners of teaching offered by the game differ in relation to, for example, the player's skillfulness or gender. Consequently, we changed the gender of the players by logging in as both male and female, changed the players' skills, and changed the gender of the animated instructors featured in the games. In other words, we compared a skillful female player instructed by a female instructor with a skillful male player instructed by a female instructor and so on.

In the analysis of the recordings, we watched and categorized all the collected material using the categories of epistemological move described above. We focused on all statements uttered by the game, as, for example, instructions

on how to play and feedback to the player after performing an exercise. We also investigated whether the teaching offered by the game was affected by the player's gender or skillfulness. The field notes and discussions recorded while playing was used for sketching preliminary results and became a valuable resource when we started doing the analysis. In the project, we have also together analyzed the material and discussed the results of the analysis at several occasions.

In the next part of this article, we illustrate the results with excerpts from our playing of the game *Wii Fit Plus*. The excerpts have been selected from the introductory part of the game and from one of the balancing exercises known as the Chair Pose. These two examples have been chosen because they contain a wider variety of epistemological moves than most of the other games. The epistemological moves used in our selected recordings can be found in the other exercises as well, but in our selection, additional moves are also used. Despite changing the gender and the skills, we found few differences between the games. We will return to this later.

## Findings

The results show that four different epistemological moves are used when teaching is delegated to the exergames in PE. Instructive and confirming moves are used in all the mini-games and exercises, and in the examples illustrated in the findings section, reorienting and generative moves are used as well. There were no gender differences in the instruction or feedback given by the game.

### *Instructive Moves*

From start to finish, the games offer instructive moves in written texts, images, animations, and verbal speech. The moves are used to instruct the player how to think about and strive for a fit body and how to play the game.

The logic of the game is designed to get the player to use and think about the body and health in a specific way. To be successful in the game, the player must strive toward the goal of a fit, slim, young, and well-trained body (cf. Öhman et al., 2014). The written instructions for the game state this as though it was an obvious fact and no opportunity is provided to discuss different views of the body, health, and physical activity.

New players begin the game by doing a body test and creating an avatar that then represents the player in the game. When doing this, the player is instructed to stand on the balance board (which measures the player's weight and registers his or her center of gravity) and enter his or her age and height. The game states that "The Body Test measures your centre of gravity, BMI and athletic ability before presenting you with your *Wii Fit Age*."

If the player responds to the instructions as expected, the entered data are then used in the game to calculate the person's BMI and to give feedback both verbally and in the form of a diagram indicating whether the player is obese,

overweight, ideal, or underweight. Furthermore, and as a second part of the body test, the player is instructed to do a few exercises, which results in a number representing the player's *Wii Fit Age*.

In connection with the instructions about the body (BMI and *Wii Fit Age*), the player is given instructions about how to think about the good body—as slim, fit, and young—and about the importance of physical activities as a way to living a healthier life and a "journey to a better you."

In the exercise selected here, the Chair Pose, the player is asked to stand on the balance board and follow the given instructions. An animated instructor indicates how and why the exercise should be carried out. "This pose can tighten your back and legs as well as strengthen your abs." The instructor poses in the appropriate way and tells the player to follow suit. Texts and animated arrows are also used as instruction tools. The player is told to stand on the balance board, stretch his or her arms forward, and bend the knees. The instructions are given in text, verbal speech, and animated forms. While standing in the chair pose, the player receives further instructions about what to do, such as "While exhaling, bend your knees, drop your waist and pull in your stomach."

To summarize, instructive moves in the form of images, animations, texts, and verbal speech are used to instruct the players about the body, health, and physical activities.

### *Confirming Moves*

Confirming moves are used to give the players feedback during and after the game. During the various exercises, the players receive comments such as "well done," and at the end of each exercise, the results are communicated as a form of judgment. In *Wii Fit Plus*, the player's responses to the instructions are registered by the hand control and the balance board. Technically, the exergames' confirming moves are responses to the player's actions and her or his movements and timing, both with the hand control and balance on the balance board.

In the introductory part of the game, confirming moves are offered about the body in the form of results from the body test. The measurement of BMI and the *Wii Fit Age* mentioned above are examples of this. The game also offers confirming moves during the measurement process and uses different kinds of animations, texts, verbal speech, and images to confirm whether the player is on the right track or not. For example, when doing a balance test, the player is offered a confirming move in the form of a red dot moving inside a yellow circle. Here, the player is expected to keep the dot as steady as possible at the center of the circle. This moving dot represents the player's center of gravity and how it moves during the exercise.

The player is also taught confirming moves both during and after the exercises. The game confirms the player's actions and offers feedback on how well the player has performed the exercise. After finishing a specific exercise, such

as the Chair Pose, the player is awarded gold stars, points, and a judgment, and is ranked in relation to other players. If a player plays well, he or she might get four gold stars, 72 points, the judgment “Yoga Trainer,” and be ranked as number one on the top score table. In another situation, if the player has had a bad game, she or he might get no stars, no points and the judgment “Yoga first-timer,” and be unranked in relation to previous players.

### Reorienting Moves

In teaching, reorienting moves are used to help students modify their actions toward a more relevant and effective way of proceeding (Lidar et al., 2006). In a way, the reorienting move can be seen as a combination of a confirming move and an instructive move. It is confirming in that it offers feedback to the player, and instructive because it also contains instructions about how to change the action.

One of the most central messages to a player is that it is important to exercise and be fit. The player’s activities are registered and saved, and when he or she plays the game, again the result is compared with previous results. For example, the player’s BMI is calculated and compared with the previous BMI results and to the goal of change in BMI that the player has set up and registered in the exergame. If the player fails to reach the set goal, he or she can expect to see the following type of message:

Oh dear. It seems you were unable to reach your goal this time. Next time, let’s try to go for a smaller goal that might be easier for you to reach.

The reoriented move taught in this case contains a confirmation of the results from the BMI test as well as an instruction about how to do better next time. The player can then set a new goal.

Also during the play, the exergames offer reorienting moves. For example, in the case of the Chair Pose, this involves registering the player’s movements. However, the player is not just given this information but is also helped to change his or her actions: “Your body’s swaying a bit. Try to stabilize your back and legs.”

### Generative Moves

Generative moves are used to help players generate explanations: to think about how to play the game and what effects it may have on the body. For example, the game offers information in tables and diagrams about how the player’s BMI has developed over time, about the relationship between the body and physical activity, and how important it is to stay fit (cf. Öhman et al., 2014).

When the player has completed the Chair Pose, he or she is taught by means of a generative move. The following is an example of a good performance:

You have fairly good balance. The Chair Pose uses your abs and helps tighten up your abdomen.

In this generative move, the quality of the player’s action is assessed. It confirms whether the player has acted correctly or not, and is generative in that it also offers information that helps the player to understand the significance of physical activity to become strong, healthy, and fit.

In contrast to this, when playing badly, the player is taught by means of the following generative move:

Very unsteady, but don’t worry, once you’re used to it, you’ll soon be able to stabilize your centre of gravity.

When a player has played badly, the exergame does not just criticize, but offers an encouraging generative move to keep up the good work. It is worth noting the difference between the generative move given to the skillful player and that given to the less skilled player, although both players are given an explanation about the pose and how it can be used to become stronger and fitter.

## Discussion

Adding to the studies on the content offered in the exergames (e.g., Francombe-Webb, 2016; Gibbs et al., 2016; Nyberg & Meckbach, 2015; Öhman et al., 2014; Vander Schee & Boyles, 2010), our analyses show that the games used in school PE also offer different kinds of teaching. The teaching identified are through (a) instructive moves about the fit body and how to play the game, (b) confirming moves about the players’ gaming, (c) reorienting moves to help the players to modify their action toward a more relevant and effective way of reaching a healthy body, and (d) generative moves to help the players think about how to play the game (Table 2). These moves constitute the teaching delegated to the artifact.

Based on the epistemological moves taught in the different exercises and mini-games, we have categorized the teaching delegated to the exergames into three groups (Table 3).

In the first group, games and specific exercises are the most common in all the exergames included in the study. These teaching sequences are straightforward because they include epistemological moves in terms of instructions and confirmations that can be understood in clearly recognizable behavioristic Initiation-Response-Feedback (IRF) sequences. In the second group we find games and exercises that give instructions about and confirms the player’s actions, but that also give further instructions about how the player should change his or her actions while playing. In the third group, the exergames also give generalized and generative explanations and instruction about the exercises and what they mean in relation to physical activity and health.

**Table 2.** Epistemological Moves Used in Exergames.

Instructive move	The exergame gives the player instructions about what he or she needs to do to participate correctly in the situation.
Confirming move	The exergame confirms that the player has acted correctly.
Reorienting move	The exergame directs the player's attention to other things that are worth doing to change the direction of the meaning making.
Generative move	The exergame generates explanations and points to what to pay attention to, but also gives reasons for why this is important.

**Table 3.** Three Kinds of Teaching With Exergames.

	Instructive	Confirming	Reorienting	Generative
I	X	X		
II	X	X	X	
III	X	X	X	X

Thus, the “teacher” constituted in the games used in PE is one who instructs and encourages the players, in this case PE students, to exercise and think about their bodies in specific ways. However, as no reconstructive or evaluative moves are used in the game, it is not a “teacher” who can help students to investigate, argue, or discuss images of health and the human body. In these games, teaching is constituted as a behavioral modification based on an idea about a predetermined, ideal body that is not expected to be scrutinized or discussed.

The teaching constituted in the exergames is well in line with what we would expect from a teaching machine in a behavioristic perspective on teaching and learning. Skinner writes about the problem of individualization in education from a behavioristic point of view, and, in his book on educational technology from 1968, argues for the use of technology as the solution to this problem (Skinner, 1968/2008, p. 32ff). He identifies three teaching failures. The first, he argues, is that the feedback given by teachers to students is often in the form of aversive control, where teachers tell students what they have done wrong and punish them for their mistakes. He says that the problem with this is that it has been shown that negative feedback is less effective than positive feedback. In such a situation, the student tends to avoid punishment rather than learn new knowledge. The second failure is that even when teachers give positive feedback and focus on the students' correct answers, there is often a gap between the teacher's feedback and students' responses. The more students a teacher is expected to teach in the classroom, the bigger the problem becomes. The third is that most teaching is not organized and lacks sustainable systems for

feedback. According to Skinner, teachers often have no clear idea or plan for when, how, and why they should give feedback to their students. In his book, he makes suggestions for how educational technologies can be used to individualize teaching, for example, by using different kinds of mechanical and electronic devices to give instructions, pose questions, receive the students' answers, and give instant feedback. This idea has also led to the development of different kinds of devices in schools in different countries (cf. Skinner, 1968/2008).

The teaching problems that Skinner addresses are also relevant in the use of exergames. Our results show how exergames as educational technology can be used to individualize teaching, teach units in small and clear steps, and give students direct feedback after their response to an instruction or question. They can also be used to address a contemporary PE issue, namely, that a lack of resources, such as a specific teaching competence, equipment, or premises, can be redressed by using artifacts to solve such problems (Quennerstedt et al., 2013).

However, there are at least three major problems with using exergames in this way in PE. These problems may also be seen as a critique of teaching based on a behavioristic perspective at a more general level and not just on the use of exergames and other artifacts. *First*, the behavioristic perspective on teaching and learning tends to be reductionist, in that it focuses on humans' physical behavior and does not leave any room for or provide any tools for understanding thinking and speech. The machines developed from the ideas presented in Skinner's book can only give instructive moves and confirming moves. The student receives an instruction in the form of a question that he or she is expected to answer, the student then answers the question, and the machine confirms that the question has been answered and whether it is correct or not. In our example, this is quite obvious. Most of the interaction between the exergames and the player is focused on the player's physical actions. Even though we would say that the use of reorienting and generative epistemological moves takes the games beyond a simple behavioristic view of teaching, most of the exercises belong to the first of our three above categories. *Second*, the teaching content in the exergames is predetermined and there is no possibility for a student to take part in a critical discussion about the content taught, at least not without doing something other than the actions specify. Predefined and preselected content is also a problem in the behavioristic perspective (and many others) on learning addressed in research on teaching and learning. In our study, we investigated whether different kinds of players were given different instructions and received different kinds of feedback and we changed the gender of the players by logging in as both male and female, changed the players' skills, and changed the gender of the animated instructors featured in the games. The results, however, show that the interaction in one way was not influenced by these changes. The player got the same instructions

regardless of gender or skillfulness. In another way, however, it actually depended on the changes. The feedback that the player received depended on how well he or she performed. *Third*, and as a consequence of the first two, the exergames offer a narrow and limited view of teaching and learning in terms of teaching as input and learning as output. The behavior the player is expected to develop is predefined and offered in the exercises in the games. There is no room for the player to influence this, at least not within the frame of the game.

Given these limitations, we argue that a pragmatic perspective on teaching and learning, such as the epistemological move analysis, could contribute to a deeper understanding of and more elaborated discussion about teaching and learning, especially on the use of exergames in educational settings. We also argue that the use of a wide range and variety of epistemological moves would make the teaching richer and offer a deeper understanding about the body and health.

Our result shows how four different epistemological moves are offered by the games and that at least two additional moves are possible. The reconstructive move could be used to help students see the facts they have before them but have not yet paid any attention to. The evaluative move could be used to show the player the importance of comparing, evaluating, and/or testing different arguments in the discussion. Whether and how these epistemological moves could be included in the design of exergames—let us call them game types IV and V—is beyond the scope of our study. These moves could of course be provided by the PE teacher who is doing the teaching rather than delegating the teaching to the artifact. A teacher could be present in the educational situation to help students to critically inquire and engage with the messages about health and embodiment provided by the games (cf. Gibbs et al., 2016). Games in which these kinds of action are included could be constructed and used in education (cf. Kim & Baylor, 2006). As far as we are aware, no such games have yet been designed for use in PE. We also argue that it would be possible for teachers to at least highlight these issues and offer their students these additional moves while playing the exergames in educational settings. If the games are not redesigned to include these aspects, the use of exergames in PE will remain instrumental and be delivered in narrow behavioristic IRF sequences.

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### Notes

1. Exergames can also be used in other subjects than physical education (PE). See, for example, Lucht and Heidig (2013) about the use of exergames in English education.
2. The use of exergames in PE differs between countries. In Sweden, the majority of teachers (97%) have not yet used exergames in their own teaching, although many are positively disposed to doing so (Meckbach, Gibbs, Almqvist, Öhman & Quennerstedt, 2013).

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