



ELSEVIER

Psychology of Sport and Exercise 4 (2003) 211–223

Psychology
OF SPORT AND EXERCISE

www.elsevier.com/locate/psychsport

Examining factors associated with intrinsic motivation in physical education: a qualitative approach¹

Maria Hassandra ^a, Marios Goudas ^{a,*}, Stiliani Chroni ^a

^a University of Thessaly, Department of Physical Education and Sports, Karies, 42100 Trikala, Greece

Received 3 April 2001; received in revised form 17 August 2001; accepted 31 January 2002

Abstract

Objectives. To provide further information regarding factors associated with students' intrinsic motivation in physical education using a qualitative approach.

Design and Methods. Sixteen in-depth interviews were conducted with secondary physical education students who were selected from a pool of 254 students on the basis of their score on relevant questionnaires.

Results. Analyses of interview transcripts revealed that factors associated with intrinsic motivation for participating in physical education were both social-environmental and individual differences. Individual differences in perceived competence, perceived autonomy, physical appearance, and goal orientation influenced students' intrinsic motivation. Social environmental factors included lesson content, the physical education teacher, classmates, and school athletic facilities, as well as physical activity behaviors of the family and family encouragement, participation in out-of-school athletic activities, media, cultural values and social preconceptions.

Conclusions. A wide variety of social factors influence students' intrinsic motivation in physical education. These need to be taken into account when designing physical education lessons.

© 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Intrinsic motivation; Physical education; Qualitative methodology

Introduction

Physical education may have an important educational contribution to students' personal development. It provides opportunities for enjoyment, for learning new motor skills and for co-

* Corresponding author. Fax: +30 431 470 02.

E-mail address: mgoudas@pe.uth.gr (M. Goudas).

¹ This study was funded by a research grant from the Research Committee of the University of Thessaly (code 2603).

operating with others. Knowledge regarding a healthy life style can also be provided. However, studies both in the UK (Van Wersch, Trew, & Turner, 1992) and Greece (Papaioannou, 1997), have reported that interest and participation in physical education (P.E.) gradually declines with age. Therefore, it is important to examine students' motivation for participation in physical education classes.

Intrinsic motivation (IM) has been one of the concepts studied in motivational research in physical education. According to Deci and Ryan (1985), intrinsically motivated behaviors are engaged in for their own sake, for the pleasure and satisfaction derived from the process of engaging in the activity. Intrinsically motivated behaviors are associated with psychological well being, interest, enjoyment, fun, and persistence (Ryan & Deci, 2000).

Several studies have shed light on possible determinants of intrinsic motivation in physical education and thus have provided practical directions for physical educators (Biddle & Chatzisarantis, 1999). Most of these studies have adopted a quantitative methodological approach and tested established psychological theories. Nonetheless, physical education is a unique setting and testing theories which have been developed in other areas may hide important aspects of students' motivation. Furthermore, as the school environment is complex and multiple factors interact in influencing a student's motivation, it is somewhat unlikely that any study adopting a quantitative methodology could capture this complexity. Therefore, the aim of this study was to accumulate information regarding possible determinants of students' intrinsic motivation in physical education.

Studies that have examined the determinants of intrinsic motivation in physical education can be classified as those examining the effect of students' individual differences on intrinsic motivation and those examining the effects of social-environmental factors on students' intrinsic motivation. Four factors related to individual differences have been shown to influence intrinsic motivation in physical education. These are perceived competence, perceived autonomy, achievement goal orientation, and perceived usefulness of the physical education class.

A number of studies have shown that perceived competence is positively associated with intrinsic motivation, that is, if students feel that they are competent in a P.E. class, they enjoy their participation (Goudas, Biddle, & Fox, 1994; Goudas, Dermitzaki, & Bagiatis, 2000; Whitehead & Corbin, 1991). Perceived autonomy, or self-determination, also influences intrinsic motivation. Physical education students who feel autonomous for their actions are more intrinsically motivated (Goudas et. al., 1994).

Achievement goal orientation also plays a crucial role in students' perceptions of competence and success. According to goal perspectives theory (Nicholls, 1989), individuals might have different goals when engaging in achievement tasks. For some students, establishing superiority over others is the primary focus (ego orientation), whereas, for others, the focus is on self-improvement and on successful completion of the task (task orientation). Task orientation seems to facilitate intrinsic motivation, while ego orientation is more likely to lead to decreased intrinsic motivation (Duda, Chi, Newton, Walling, & Catley, 1995).

Students' expectancies about P.E. are also associated with their intrinsic motivation. Rodgers and Brawley (1991) argued that outcome expectancies are formed by the interaction of two factors: outcome likelihood, which refers to the probability that a certain action will lead to a certain outcome, and outcome value (i.e., the value assigned by the individual to the possible outcome of the action). Goudas, Dermitzaki and Bagiatis (2000) reported that when students perceive their

P. E. class as resulting in useful and important outcomes, then an increment in intrinsic motivation is expected to occur.

The social-environmental factors that have been shown to influence students' intrinsic motivation in physical education class are the motivational climate, teaching style, content of the lesson, and adult encouragement. When the motivational climate in a P.E. class is mastery-oriented (when students are directed towards self-improvement and praise is offered to them for high effort), then it is probable that students will show higher levels of intrinsic motivation (Biddle et al., 1995; Goudas & Biddle, 1994; Papaioannou, 1995). Similarly, a teaching style that provides students with opportunities to make choices appears to have a positive effect on their intrinsic motivation. Goudas, Biddle, Fox and Underwood (1995) showed that a differentiated teaching style (in which students were offered a number of choices) positively influenced students' reactions to the sporting activity independently of perceptions of autonomy and competence.

Intrinsic motivation varies according to the activity. Students show different levels of intrinsic motivation in different activities, and this is attributed, partly, to perceived competence and/or to the degree of self-determination that the student has for the specific activity (Goudas & Biddle, 1993; Goudas, Biddle & Fox, 1994). However, it appears that the unique characteristics of the activity determine students' interests.

Most of the studies that have examined intrinsic motivation have adopted the quantitative methodological approach (Biddle, 1995). Such studies describe well-controlled, quantitative research efforts that have examined specific factors affecting students' intrinsic motivation (competence, self-determination, etc), inspired by specific theories. There have been a few recent studies, however, that have used a qualitative approach to examine student motivation in physical education.

More recently a number of studies have used a qualitative methodological approach in order to examine the P.E. class environment through the student's perspective. Results from these studies indicate that perceived competence differentiated according to age, and constituted a determinant of students' effort in P.E. classes (Lee, Carter, & Xiang, 1995; Veal & Compagnone, 1995). In addition, when the emphasis in the class was on personal improvement, students reported increased enjoyment, regardless of their perceived competence or performance accomplishments (Dyson, 1995; Portman, 1995). Furthermore, when students had choices and were involved in decisions in P.E. classes, then participation was more enjoyable (Carlson, 1995; Dyson, 1995; Hopple & Graham, 1995; Nugent & Faucette, 1995).

Since the majority of the studies in this area have utilized a quantitative approach, there is a potential gap in our knowledge regarding concepts related with intrinsic motivation in physical education. As the school environment is particularly complex, there may be several other variables associated with students' intrinsic motivation. Moreover, recent theorizing has postulated that "sport and exercise participants are not simply intrinsically or extrinsically motivated or even amotivated, but all of the above, depending on the task at hand" (Vallerand & Rousseau, 2001, p. 410). Thus, in the unique setting of physical education, students' motivation may be related to a variety of factors.

Therefore, the aim of this study was to map the majority of possible relevant factors using a qualitative methodology, instead of examining the effect of pre-determined variables. Clearly, such information could lead to a better understanding of the dynamics of students' motivation in school physical education, and possibly provide indications for adjusting physical education programmes to maximize students' motivation.

Method

In this study, in-depth interviews with students, who were previously identified through questionnaires as representing all variations of intrinsic motivation, were conducted. The study took place in two phases. In Phase A, a large pool of students responded to intrinsic motivation questionnaires and 16 participants were identified as representing the whole range of scores. In phase B, these students were interviewed.

Setting, participants, and data collection

The study was conducted at two high schools located in the same town in Northern Greece. Physical education classes were taught twice per week. The curriculum is activity-based and the most commonly taught sports are basketball, volleyball, soccer, and track and field, according to the national curriculum. Permission to conduct this study was provided from school principals.

Phase A

254 students (143 boys, 111 girls) from two schools completed the questionnaires. Their age ranged from 12 to 15 years. Two self-report questionnaires were used.

Intrinsic motivation inventory The Intrinsic Motivation Inventory (IMI; Ryan, 1982) was used. The IMI comprises four sub-scales: Enjoyment/Interest (4 items, e.g., “what we do in physical education is very interesting”); Effort/Importance (4 items, e.g., “I put a lot of effort into physical education class”); Competence, and Pressure/Tension (4 items, e.g., “Sometimes I worry about making mistakes in physical education”). A composite score provides an index of intrinsic motivation. However, in the present study the Competence sub-scale was omitted for two reasons. First, because it overlaps with the perceived competence measure we employed and secondly, because competence is viewed as an antecedent rather than an outcome of intrinsic motivation (Deci & Ryan, 1985). Students rated their answers on a 5-point scale (1: strongly disagree and 5: strongly agree).

Perceived competence According to suggestions by Nicholls (1989), perceived competence was assessed by two items asking students to rate their competence in physical education compared to their classmates (“my ability in physical education is above average” and “compared with my classmates, I am one of the best in physical education”). Students rated their answers on a 5-point scale (1: strongly disagree and 5: strongly agree).

Phase B

In this phase, 16 interviews were conducted. The type of purposeful sampling that was used was maximum variation sampling. That is, students were selected purposefully in order to represent a wide range of the dimensions of interest (Patton, 1990). The dimensions were the students’ scores on intrinsic motivation and perceived competence, and all ages and both genders were sampled. Eight boys and eight girls representing classes 7, 8 and 9 and all variations of scores were selected for the interviews. Before conducting the main interviews, pilot interviews were conducted with

students not participating in the study in order to finalize the interview questions and to strengthen the interviewer's skills. Students completed consent forms before each interview.

A semi-structured format was adopted, providing depth through probe questions. In-depth interviews rely on theoretical genre of phenomenology, that is, the study of participants' lived experiences and worldviews (Patton, 1990). The principal investigator of this study conducted all interviews. Interviews lasted from 35 to 45 minutes and they were conducted during regular school physical education hours in quiet rooms. Each interview was recorded and later transcribed verbatim. Students answered questions regarding intrinsic motivation indices: interest/enjoyment, effort/importance, pressure/tension, perceived competence, perceived autonomy. Examples of questions are: "Do you enjoy physical education classes?" and "How important is it for you that you learn something in physical education class?". For every answer, additional probes and follow up questions were posed.

Data analysis

Data analysis was carried out in three steps according to thematic analysis (Boyatzis, 1998). In the first step, raw data themes, from the transcribed interviews, were identified and coded. In this step, a deductive approach was used; that is, generation and categorization of codes resulted from established theory and prior research findings. The second step involved the creation and categorization of new codes from data that did not fit the pre-determined categories. In the third step, the reliability of codes and coding was determined. In order to achieve reliability, an external researcher (a second "coder" who was not a peer debriefer), familiar with qualitative research, checked the codes and coding. After reaching agreement between the researchers and coders, corrections were made. The interview's data management was organized using the NUD*IST software. (QSR*NUD*IST Vivo: Qualitative Solutions & Research, 1999).

Throughout the study, ongoing analyses (Rossman & Rallis, 1998) were conducted with the assistance of two peer debriefers (the second and third author), and notes were made concerning the raw data. Peer debriefing sessions included meetings with two other researchers, knowledgeable on qualitative methodology, to examine both methodological procedures and the interpretations of the data coding (Patton, 1990).

In order to attain trustworthiness, a variety of methods were utilized (Lincoln & Guba, 1985). Member checking was carried out during and after the interviews. During each interview, after posing a set of similar questions, students were asked to verify what the interviewer had heard or perceived and what s/he meant by the answers. Each student was asked to verify his/her interview by reading its transcription two to five days after the interview had been conducted. A reflexive journal was also kept. The records comprised the daily schedules, methodological decisions and reasons for making them, personal thoughts and notes of unofficial discussions, with students and teachers, relevant to the study (Lincoln & Guba, 1985). Finally, with the triangulation of sources, which is a form of comparative analysis, we tried to strengthen the study's reliability (Patton, 1990). Sources of triangulation were the interviews, the questionnaires and the reflexive journal.

Results

Data analysis resulted in two higher order themes: individual differences and social environmental factors. These are portrayed in Figs. 1 and 2.

Individual differences

Individual differences in perceived competence, perceived autonomy, goal orientation, perceived usefulness of the lesson, and physical appearance, are associated with students’ intrinsic motivation when they participated in physical education lessons.

Perceived competence

Most of the students linked competence with concepts related to intrinsic motivation such as effort, willingness, interest in the lesson, and attention. “I think he is not good, because even though he plays well, he behaves badly, he cannot cooperate with others and his manners are not

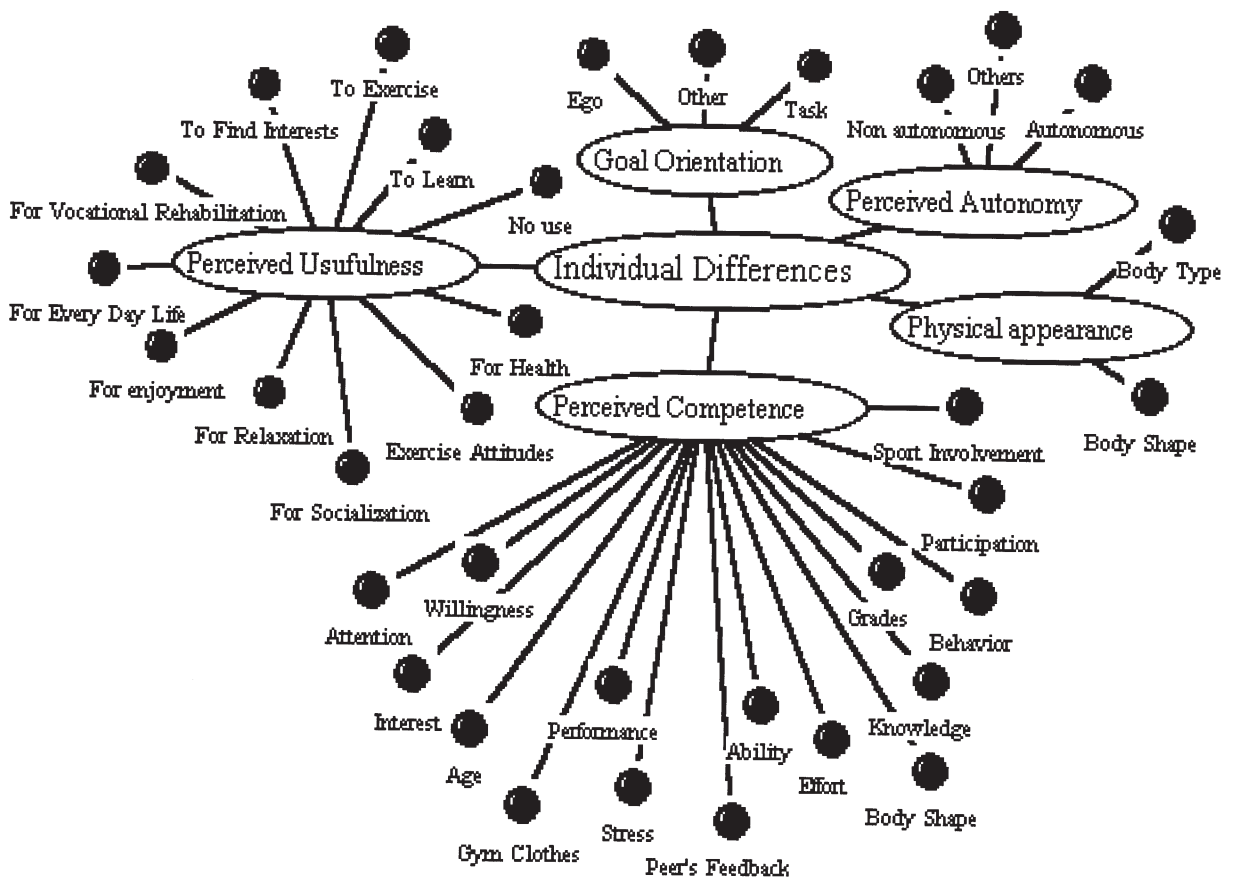


Fig. 1. Individual differences: Lower and higher order themes.

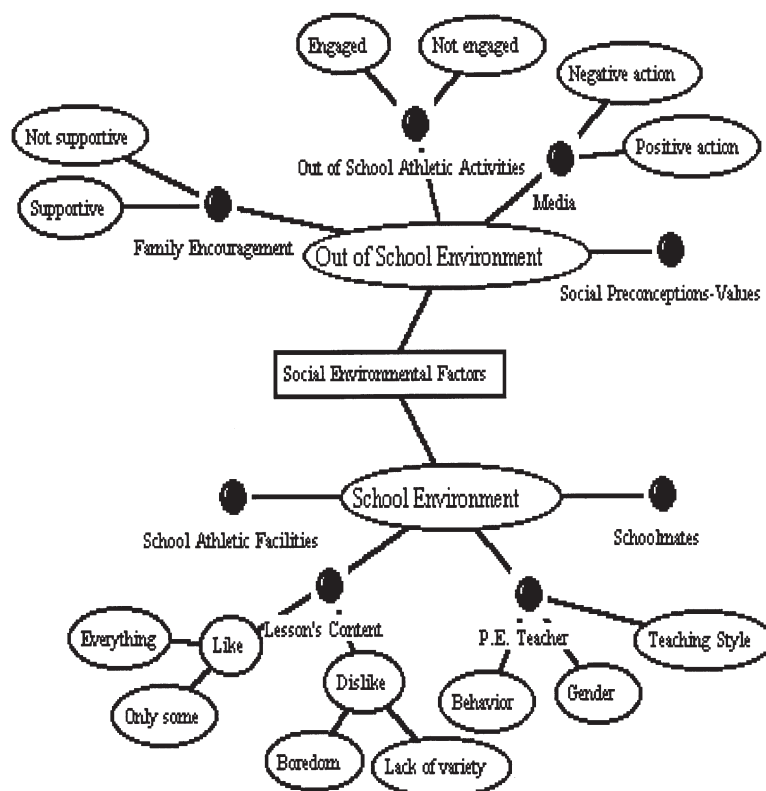


Fig. 2. Social-environmental factors: Lower and higher order themes.

right”; participation: “He almost never participates in the lesson”; “I am good because I pay attention in everything my teacher says”.

Perceived autonomy/self-determination

Generally, students with high IMI scores felt self-determined: “We do everything we want, nobody forces us”, “I participate in P.E. lessons because I want to, not because I have to...”. Whereas, students with low scores felt they were pressured to participate: “My teacher forces me to play volleyball, but I do not want to, I find it boring”.

Outcome expectancy-perceived usefulness

Students with high IMI scores mentioned a variety of valuable reasons for their participation in lessons. The reasons that emerged from these students were grouped in the following categories: for health (“It keeps your mind and your body healthy”), fun, relaxation (“running or playing games cleans my mind from problems”), socialization (“It is this feeling being with others”), learning, future vocational rehabilitation (“to find a job when I grow up, I want to be a P.E. teacher”), exercising, discovering talents and hobbies (“you can discover talents that you didn’t know you had”), everyday use, and creating positive attitudes towards exercising.

On the other hand, students with lower IMI scores find the lessons of no use: “There is no use

at all, if I want to exercise, I can go somewhere out of school and do it". Or, when they gave some reasons, they used generalizations: "It is good for someone to exercise, because he can improve his fitness or his health". That means that although they knew the advantages of exercise, it was not important for them.

Goal orientation

Students' answers reflected both a task orientation — "I want to be better than I am now" — and an ego orientation: "I believe that even though they are better than me, if I put all my power into it (effort) I can be better than them...". But there were students that do not seem to perceive P.E. like an achievement area. They just enjoy participating: "I do what I want to do; I play and I do not care if I lose or win...I enjoy this, to be good is not my priority, the most important thing for me is to enjoy playing".

Physical appearance

Students' perceptions about their body or physical appearance seemed to create expectations for ability or performance in P.E.: "He is not good in P.E. because he is fat" and "He is not the athletic type". Since the teaching was primarily directed towards sport skill, an athletic body was deemed important for students regarding successful participation.

Social environmental influences

Aspects of the environment were also associated with intrinsic motivation. Social environmental factors included in school and out of school environments. School environmental factors included lesson content, the physical education teacher, schoolmates, and schools' athletic facilities. Out of school environmental factors included the physical activity behavior of family and encouragement, participation in out-of-school athletic activities, media, cultural values and social preconceptions (see Fig. 2).

School environmental factors

Lesson content Students with low scores in IMI attribute their nonparticipation in lessons to the content: "If there was dance, modern or traditional, I would participate in P.E. lessons... It is boring doing the same sports all the time...". On the contrary, students with higher scores in IMI attribute their enthusiastic participation to lesson content: "I like it when we play volleyball". Finally, some students stated that they liked everything they do in P.E., no matter the sport they play.

Physical education teacher The physical education teacher plays a crucial role in students' motivation. His or her teaching behavior can result in different directions of motivation: "His style, his tone, the way he looks at you and other things, made him undesirable to students and this extends to a dislike of the lesson...If he smiled a little, if he was more friendly, I would play basketball, even though I do not like this sport, it would be a good chance for me to play with my friends, but his behavior turned me away..."

Students with low scores on the IMI and students with high scores from the same class, when they were talking about their P.E. teacher (the same teacher) their opinions were contradictory.

Girl: “...because I know that my P.E. teacher will show sympathy and if there is something I do not understand he will explain and show me again”. Boy: “Maybe if our teacher showed more interest and helped us to correct our mistakes or teach something new ...he is very cooperative” (said ironically). Finally, a statement from a girl indicated that even the teacher’s gender was an element that influenced her point of view: “When we had a female teacher of P.E. things were much better for us (girls), but the last two years we have this P.E. teacher (male) ... he has a strange style...”.

It is rather interesting that students low in intrinsic motivation perceived their teacher differently than their highly intrinsically motivated classmates. There are two possible explanations for this finding. Either the teacher’s behavior was the same to all students but students perceived it in different ways, or the teacher altered his behavior when communicating with different students. This second possible explanation may indicate that there was a Pygmalion effect, with the teacher communicating different expectations to students of different ability (Martinek, Crowe & Rejeski, 1982). However, the design of the study does not allow for any conclusions regarding this finding but is worth further examination.

Schoolmates The need for interaction with peers was associated with students’ motivation in many ways. Thus, through this interaction, they determine what they like, for example: “I like basketball because most of my friends play basketball...they influence me”, or “I play basketball sometimes, mainly because the closest friends make a team and it is only this that matters to me, not the lesson, just to make fun with my friends”. It seems to be very important for students to be accepted by their peers, as a boy stated: “I do not like it when my friends do not include me in their games because I do not play well”.

Schools’ athletic facilities Most public schools in Greece lack suitable playgrounds and athletic facilities. Hence, many students complained about school athletics facilities: “...If we had a gymnasium it would be better, because when it rains we stay in class...” and “We need more athletic facilities, our playgrounds are very small, we cannot play...”.

Out of school environmental factors

Physical activity behavior of family and encouragement Students whose parents were active were highly motivated and they participated in out of school organized sports, whereas students not favorable towards P.E. stated that their parents had no involvement in any type of sports or physical activity. A boy said: “Maybe it’s the way my parents nurtured me, I am not used to playing outside, I rarely go out and all my friends are only here, in school”. But it was not only parents that influenced students.

Participation in out-of-school athletic activities Participation in organized sports out of school associated with students’ motivation in many ways. First of all, the type of out of school activity was related to what they like and dislike from the lesson content: “I like basketball most of all because I used to play many years before in teams”. Second, students with no out-of-school athletic activities believe that their classmates participating in organized sports have higher competence in P.E. lessons: “She is better than me because she plays volleyball for many years in an organized sport team”. But students that participated in organized sports were not always

highly motivated. Finding P.E. lessons easy, for some of them, was a chance to demonstrate high ability, so they participated. Others find P.E. boring and not challenging for them, so they did not participate: “It is just that we have a good time not that there is something to learn...Everything I learn was from out of school activity, I learn nothing more in lessons”.

Media The role of media had also been associated with students’ views about participation. When the media promotes athletes, this works as role models for students: “I would like to be like those athletes on TV”. But the promotion of aggressive behaviors impacts negatively: “I do not like sports, not at all, because of hooligans, violence we see on TV...”. It seems that the media relates to students’ opinions about the P.E. lesson. It attracts them with model-athletes but it also turns them away with the publicity of violence.

Cultural values and social preconceptions Some students had some biases associated with their attitude for P.E. One of these unsubstantial rumors was that: “If I play basketball I will be taller”. Also, there were preconceptions about girls’ games and boy’s games. As a girl said: “I do not play football any more, because my friends said that now we are grown up and that football is not for girls”.

Discussion

The purpose of this study was to collect information from students about the factors associated with intrinsic motivation for participation in physical education lessons. The results showed that a variety of factors related both to individual differences and to social environmental factors associated with intrinsic motivation.

These results are in accordance with recent theorising about intrinsic motivation. Vallerand (1997) has proposed that it is inappropriate to describe students as being either intrinsically or extrinsically motivated because both motivations exist within individuals at different degrees. Vallerand (1997) has proposed three types of intrinsic motivation namely intrinsic motivation to know, intrinsic motivation to experience stimulation and intrinsic motivation toward accomplishment and four types of extrinsic motivation, namely external regulation, introjected regulation, identified regulation and integrated regulation. The students interviewed in this study offered many reasons for their participation (or non-participation) in physical education lessons. These reasons reflect all the above mentioned motivational types, and provide support for the notion that intrinsic and extrinsic motivation are multidimensional constructs (Vallerand, 1997).

The present results also fit well with Vallerand’s (1997) model of motivation. This model posits that the different motivational types are influenced by a number of social factors. In this study several social factors associated with intrinsic motivation emerged, such as the P.E. teacher, the schoolmates, family encouragement, the media, and cultural values. Previous studies in sport and physical education settings have identified other social factors affecting intrinsic motivation. Ntoumanis (2001) showed that cooperative learning, emphasis on improvement and perceived choice affected students’ motivational types in physical education. The present study adds to these results showing that there are a wide variety of social factors associated with intrinsic motivation. These results also complement recent claims that when studying the motivation of exercise parti-

participants (or physical education students in this case) we need to take into account the fact that they are part of a wider social matrix which influences their motivation in the specific context under examination (Vallerand & Rousseau, 2001).

Vallerand's (1997) model also posits that the influence of social factors on the different types of motivation is exerted through the satisfaction of the psychological needs for competence, autonomy and relatedness. The results of the present study are in accordance with this position. In several cases, students linked social factors like the P.E. teacher and the content of the lesson, with their perceived competence and their perceived autonomy. Students' also stressed that the need to relate with their classmates influenced their participation in sport activities.

These findings may have implications for the practice of physical education. Lessons should be structured in a way that students have the opportunity to satisfy their needs for autonomy, competence and social relatedness. Therefore, students need to be given choices about their participation, to experience a sense of accomplishment and to have ample opportunities for interaction with their peers during the lesson. Furthermore, as it appears that students' motivation in physical education is related to out of school factors such as media coverage of sports and family involvement with physical activity, specific strategies should be incorporated in the lesson to deal with such factors. For example, creating discussion about the coverage of sports by the media may help some students changing their negative attitudes toward physical education. Physical education teachers may benefit in their teaching by keeping in mind that some students may come to the lesson having negative preconceptions about physical education, sport, and physical activity.

Limitations of the study

This study represents students' views from two Greek junior high schools, thus the conclusions are mostly applicable to those students. This study was not intended to apply to all P.E. class environments in Greece or other countries. We are also aware that some of the reported elements would be closely related to specific students and to the specific school environment, so generalization is left to the reader. In addition, new information that appears to affect intrinsic motivation for physical education, in this study, cannot provide us with cause-effect relationships.

Research on the improvement of physical education lessons needs to be continued in new meaningful directions. Researchers in physical education should be open to different research tools and approaches that would help our field (Fahlberg & Fahlberg, 1994; Streat, 1998). Studying new or preexisting knowledge and concepts with more than one tool will help us understand and will provide us with enriched, useful information. By using alternative research methods researchers can better examine the complicated environmental factors.

References

- Biddle, S. J. H. (1995). Exercise motivation across the life span. In S. J. H. Biddle (Ed.), *European perspectives on exercise and sport psychology* (pp. 3–25). Champaign, IL: Human Kinetics.
- Biddle, S., & Chatzisarantis, N. (1999). Motivation for a physically active lifestyle through physical education. In Y. Vanden Auweele, F. Bakker, S. Biddle, M. Durand, & R. Seiler (Eds.), *Psychology for physical educators* (pp. 6–26). Champaign, IL: Human Kinetics.

- Biddle, S., Cury, F., Goudas, M., Sarrazin, P., Famose, J. P., & Durand, M. (1995). Development of scales to measure perceived physical education class climate: A cross national project. *British Journal of Educational Psychology*, *65*, 341–358.
- Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. London: Sage.
- Carlson, T. B. (1995). We hate gym: Student alienation from physical education. *Journal of Teaching in Physical Education*, *14*, 467–477.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Duda, J. L., Chi, L., Newton, M. L., Walling, M. D., & Catley, D. (1995). Task and ego orientation and intrinsic motivation in sport. *International Journal of Sport Psychology*, *26*, 40–63.
- Dyson, B. P. (1995). Students' voices in two alternative elementary physical education programs. *Journal of Teaching in Physical Education*, *14*, 394–407.
- Fahlberg, L. L., & Fahlberg, A. L. (1994). A human science for the study of movement: An integration of multiple ways of knowing. *Research Quarterly for Exercise and Sport*, *65*, 100–109.
- Goudas, M., & Biddle, S. (1993). Pupil perceptions of enjoyment in physical education. *Physical Education Review*, *16*, 145–150.
- Goudas, M., & Biddle, S. (1994). Perceived motivational climate and intrinsic motivation in school physical education classes. *European Journal of Psychology of Education*, *9*, 241–250.
- Goudas, M., Biddle, S., & Fox, K. (1994). Perceived locus of causality, goal orientations, and perceived competence in school physical education classes. *British Journal of Educational Psychology*, *64*, 453–463.
- Goudas, M., Biddle, S., Fox, K., & Underwood, M. (1995). It ain't what you do, it's the way you do it! Teaching style affects children's motivation in track and field lessons. *The Sport Psychologist*, *9*, 254–264.
- Goudas, M., Dermitzaki, I., & Bagiatis, K. (2000). Predictors of students' intrinsic motivation in school physical education. *European Journal of Psychology of Education*, *15*, 271–280.
- Hopple, C., & Graham, G. (1995). What children think, feel, and know about physical fitness testing. *Journal of Teaching in Physical Education*, *14*, 408–417.
- Lee, M. A., Carter, J. A., & Xiang, P. (1995). Children's conceptions of ability in physical education. *Journal of Teaching in Physical Education*, *14*, 384–393.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. London: Sage.
- Martinek, T. J., Crowe, P. B., & Rejeski, W. J. (1982). *Pygmalion in the gym: Causes and effects of expectations in teaching and coaching*. New York: Leisure Press.
- Nicholls, J. G. (1989). *The competitive ethos and democratic education*. Cambridge, MA: Harvard University Press.
- Ntoumanis, N. (2001). A self-determination approach to the understanding of motivation in physical education. *British Journal of Educational Psychology*, *71*, 225–242.
- Nugent, P., & Faucette, N. (1995). Marginalized voices: Constructions of and responses to physical education and grading practices by students categorized as gifted or learning disabled. *Journal of Teaching in Physical Education*, *14*, 418–430.
- Papaioannou, A. (1995). Motivation and goal perspectives in children's physical education. In S. Biddle (Ed.), *European perspectives on exercise and sport psychology* (pp. 245–269). Champaign, IL: Human Kinetics.
- Papaioannou, A. (1997). Perceptions of motivational climate, perceived competence, and motivation of students of varying age and sport experience. *Perceptual and Motor Skills*, *85*, 419–430.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed). Newbury Park, CA: Sage.
- Portman, P. A. (1995). Who is having fun in physical education classes? Experiences of sixth grade students in elementary and middle schools. *Journal of Teaching in Physical Education*, *14*, 445–453.
- Qualitative Solution Research (1999). *Software: Nud*ist Nvivo*. Newbury Park, CA: Sage.
- Rodgers, W. M., & Brawley, L. R. (1991). The role of outcome expectancies in participation motivation. *Journal of Sport & Exercise Psychology*, *13*, 411–427.
- Rossmann, B. G., & Rallis, S. F. (1998). *Learning in the field: An introduction to qualitative research*. London: Sage.
- Ryan, R. M. (1982). Control and information in the intrapersonal sphere: An extension of cognitive evaluation theory. *Journal of Personality and Social Psychology*, *43*, 450–461.
- Ryan, M. R., & Deci, L. E. (2000). Self-determination and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*, 68–78.
- Streat, W. B. (1998). Possibilities for qualitative research in sport psychology. *The Sport Psychologist*, *12*, 333–345.

- Vallerand, R. J. (1997). Toward a hierarchical model of intrinsic and extrinsic motivation. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (pp. 271–360). New York: Academic Press.
- Vallerand, R. J., & Rousseau, F. L. (2001). Intrinsic and extrinsic motivation in sport and exercise. In R. N. Singer, H. A. Hausenblas, & C. M. Janelle (Eds.), *Handbook of sport psychology* (2nd ed.) (pp. 389–416). New York: John Wiley.
- Van Wersch, A., Trew, K., & Turner, I. (1992). Post-primary school pupils' interest in physical education: Age and gender differences. *British Journal of Educational Psychology*, 62, 56–72.
- Veal, M. L., & Compagnone, N. (1995). How sixth graders perceive effort and skill. *Journal of Teaching in Physical Education*, 14, 431–444.
- Whitehead, J. R., & Corbin, C. B. (1991). Youth fitness testing: The effect of percentile-based evaluative feedback on intrinsic motivation. *Research Quarterly for Exercise and Sport*, 62, 225–231.