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Implementation of a motivational climate - classroom or physical education teachers: examination of preservice teachers ability to implement a motivational climate within physical education

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Abstract
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Keywords
teachers, motivational, preservice, examination, climate, ability, classroom, implement, physical, education, within, implementation

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Implementation of a Motivational Climate

Classroom or Physical Education Teachers: Examination of Preservice Teachers Ability to Implement a Motivational Climate within Physical Education

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Abstract
The purpose of this study was to examine the differences between preservice classroom and physical education teachers ability to implement a motivational climate. A total of 51 preservice teachers were enrolled in an elementary physical education methods course for (a) classroom teachers or (b) physical education specialists. Data were collected using a systematic observation instrument during their course field experience. Analysis of data utilized a one-way MANOVA with follow-up univariate ANOVAs to examine group differences. Results indicated that preservice physical education teachers were significantly more able to apply principles that developed a positive motivational climate.

Keywords: teacher preparation, achievement goal theory, motivation

Introduction
Elementary education can be viewed as the foundation of a student’s academic career. For instance, in physical education students are provided a foundation of knowledge and skills that lead to engagement and participation in a lifetime of physical activity (Graham, Holt/Hale & Parker, 2007). Dependent upon individual school systems, the responsibility of teaching physical education can be placed on either a classroom teacher or physical education specialist. As such, assignment of teaching physical education at the elementary level raises some questions about best practices. Currently, physical education across the world has become marginalized due to a number of initiatives that have caused an increased focus on classroom subject areas (United States Department of Education, 2001; Johns & Dimmock, 1999). In addition, it seems that physical education students are demonstrating behaviors indicative of low levels of motivation (e.g. off-task, lack of engagement in physical activity both inside and outside the school setting) (Ntoumanis, Peensgaard, Pipe & Martin, 2004). Whether a classroom teacher or physical education specialist teaches physical education, it is imperative that research examines the pedagogical differences to gain insight into how physical education instruction is being delivered. Specifically, teacher education research may need to examine practices that either support or thwart student motivation, especially at the elementary level.

Motivational Framework within Physical Education
This study was grounded in achievement goal theory (AGT) of motivation (Ames, 1992). AGT posits that the social context facilitates or influences a student’s level of motivation (Ames, 1992; Ames & Archer, 1988). While changes in and the applied benefits of higher levels of motivation are critical,
the social context (a) is the primary facilitator of a student’s motivational process and (b) is the only aspect within the motivational process that can be manipulated by the teacher. As such, this study was focused on the implementation of a social context that supports student’s motivation.

The social context, also termed motivational climate, from an AGT perspective is focused on supporting a student’s perception of competence (Ames, 1992). Perceptions of competence have been categorized as (a) task or (b) ego (Walling & Duda, 1995; Xiang & Lee, 1998, 2002; Wang, Biddle & Elliot, 2007). A task-orientation is focused on the achievement of success through personal growth (e.g. being able to lift more weight than one previously did), while an ego-orientation is more concerned with social comparisons (e.g. beating an opponent) (Ames, 1992).

Epstein (1988; 1989) researched the educational environment that would affect individual motivation and provided operational definitions within a motivational climate based in AGT called TARGET. TARGET is an acronym that stands for Task, Authority, Recognition, Grouping, Evaluation and Time. Table 1 provides an overview of the TARGET principles for both a task and ego-oriented learning climate. Educational professionals can utilize aspects of TARGET to manipulate the social context to be supportive of a task and/or ego style (Todorovich & Curtner-Smith, 2002).

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>TARGET Principles by Goal-Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Task</strong></td>
</tr>
<tr>
<td><strong>Task</strong></td>
<td>Variety of tasks that allow for</td>
</tr>
<tr>
<td></td>
<td>diverse level of challenge</td>
</tr>
<tr>
<td><strong>Authority</strong></td>
<td>Students are provided a degree</td>
</tr>
<tr>
<td></td>
<td>of control or choice over learning</td>
</tr>
<tr>
<td><strong>Recognition</strong></td>
<td>Conducted privately based on</td>
</tr>
<tr>
<td></td>
<td>individual performance</td>
</tr>
<tr>
<td><strong>Grouping</strong></td>
<td>Diverse ability groups</td>
</tr>
<tr>
<td><strong>Evaluation</strong></td>
<td>Based on individual performance and/or growth</td>
</tr>
<tr>
<td><strong>Time</strong></td>
<td>Time for completion of tasks is flexible</td>
</tr>
</tbody>
</table>

(Adapted from Ames, 1992; Epstein, 1989)

AGT research on motivational climates indicates that students flourish within a task-oriented or involved learning context. For instance, students engaged in a highly task-oriented climate provided increased levels of effort toward learning tasks (Xiang, Bruene & McBride, 2004), were more motivated (Theeboom, De Knop & Weiss, 1995) and invested more in their learning (Cury, DaFonséca. Rufo, Peres & Sarrazin, 2003). On the contrary, students reported negative affect (Treasure, 1997) and a negative impact of motivation (Papaiaonnou, 1994) within a highly ego-oriented climate. As such, it seems that quality pedagogical practices should focus on developing a task-oriented climate.

Research supports the notion that a task-oriented learning climate can assist in facilitating positive student benefits. TARGET provides practitioners with a framework by which to guide their instruction. Currently, research on TARGET has been focused student outcomes, such as changes in motivation and engagement (Todorovich & Curtner-Smith, 2002) with limited investigation into the practices of teachers in terms of implementation. To date, only two studies have examined teacher’s ability to implement a motivational climate based on the TARGET structures (Morgan, Sproule & Kingston, 2005; Perlman & Goc Karp, 2007). First, Morgan et al. (2003) examined the
effect of teaching styles on the development of a motivational climate. Results of this study found that certain teaching styles (i.e. reciprocal and guided discovery styles) seemed to align best with a task climate. The second study by Perlman and Goc Karp (2007) examined the impact of an intervention on classroom teacher’s abilities to identify and implement a motivational climate within physical education. Results of this study revealed that classroom teachers were able to implement a limited number of TARGET features within their teaching. Perlman and Goc Karp (2007) attributed the limited change to preservice teachers inexperience in working the physical education setting and time to develop their pedagogical skills. Results of these studies suggest that changes in pedagogy can occur yet further investigation is needed. Within primary physical education, either a non-specialist (i.e. classroom) or physical education specialist can be asked to deliver the physical education content. As such, it is imperative to examine whether there are differences within pedagogical practices, specifically from an AGT framework between the aforementioned groups. Therefore, the purpose of this study was to examine the differences between undergraduate education students (primary classroom and physical education majors) in the implementation of a motivational climate. Specifically, this study was guided by the following research question:

What are the differences between preservice classroom teachers and preservice physical education teacher’s implementation of a task-oriented environment using the TARGET structures?

**Method**

*Participants & Settings*
Participants were (N = 51; male = 26; female = 25) university preservice teachers (PTs) enrolled in either (a) physical education for elementary classroom teachers’ methods or (b) elementary physical education methods course at an accredited teacher education program within the United States. Participants enrolled within the physical education for elementary classroom teachers’ methods course were university students pursuing a degree in elementary education. A component of their degree required students to take a 3-credit physical education methods course. The prerequisites for enrollment within this course were completion of all foundations, as well as an initial methods course. A total of (N = 25; male = 10; female = 15) students were enrolled in the class.

Participants enrolled within the physical education methods course were university students pursuing a degree in physical education. A component of their degree required students to take a physical education methods course. A total of (N = 26; male = 16; female = 10) students were enrolled in the class.

Both courses were taught in a similar manner. The courses were three-credits that met over an academic semester (i.e. 16 weeks). Students in both courses were taught content and pedagogical principles based on the Children Moving textbook (Graham, Holt/Hale & Parker, 2007). In addition, all PTs were exposed to and taught the TARGET principles based on the intervention originally outlined by Perlman and Goc Karp (2007). As part of both courses, each PT was required to design and implement 3 teaching sessions with a local private school. Lessons were 30 minutes and focused around an individual skill theme.

Students from a local private school were exposed to all the PTs physical education lessons. A total of 28 (male = 12; female = 16) year 4-6 students were utilized within this study. Combining grades 4 – 6 was done at the request of the private school as this would (a) alleviate the small student numbers and (b) provide each of their students with physical education content. The elementary class possessed a limited budget and no physical education program. As part of a university agreement, the students would travel to the university and utilize the school of education as a partner to provide (a) the school with a physical education class and (b) allow the university students with a field experience.
Data Collection and Analysis
Before beginning the study, Internal Review Board and participant/guardian approval and consent were obtained. Each field experience lesson taught to the elementary students was video recorded for later analysis. A video camera was placed in a non-invasive area and each PT wore a wireless microphone.

PT lessons were videotaped and analyzed using the Physical Education Climate Assessment Instrument (PECAI), (Curtner-Smith & Todorovich, 2002). The PECAI was designed for use as a systematic observation tool that codes individual tasks within the TARGET framework (Epstein, 1988) as ego-involved, task-involved or neutral. As such, each lesson provides a percentage of ego-involved, task-involved and neutral across each TARGET element; task, authority, recognition, grouping, evaluation and time. At the recommendation of Todorovich and Curtner-Smith (2002), data can be condensed across lesson plans to provide each PT with an average of their ability to implement a motivational climate. Appropriate validity and reliability of the PECAI for use in physical education has been established (Todorovich & Curtner-Smith, 2001).

Each lesson was coded by the researcher with an expertise in physical education teacher education and provided each PT with a percentage of the total lesson related to task, ego and neutral. Since each PT was required to teach three lessons, percentages were condensed across all lessons, providing each PT with an overall percentage for task, ego and neutral. A reliability check was conducted with 10% of all lessons with a student unaffiliated with the study (inter-rater reliability of 91%). Upon completion of coding and reliability checks, analysis of data began with descriptive statistics (Mean and Standard Deviations). Next, percentages were used as a level of analysis and conducted using a one-way MANOVA with follow-up univariate ANOVAs to examine where significance occurred (i.e. Task, Authority, Recognition, Grouping, Evaluation and Time).

Table 2
Descriptive Statistics (Mean and Standard Deviations)

<table>
<thead>
<tr>
<th>TARGET Elements</th>
<th>Physical Education</th>
<th>Classroom Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Task M SD</td>
<td>Ego M SD</td>
</tr>
<tr>
<td>Task</td>
<td>33.22 12.10</td>
<td>25.78 8.71</td>
</tr>
<tr>
<td>Authority</td>
<td>25.00 4.24</td>
<td>27.78 4.44</td>
</tr>
<tr>
<td>Recognition</td>
<td>29.51 4.12</td>
<td>27.71 4.17</td>
</tr>
<tr>
<td>Grouping</td>
<td>25.41 4.34</td>
<td>28.52 4.07</td>
</tr>
<tr>
<td>Evaluation</td>
<td>25.41 4.21</td>
<td>27.81 4.12</td>
</tr>
<tr>
<td>Time</td>
<td>27.11 4.12</td>
<td>26.11 4.94</td>
</tr>
</tbody>
</table>

Results
Descriptive statistics (mean and standard deviation) are displayed in Table 2. One-way MANOVA calculations revealed a significant treatment difference for implementation of a motivational climate $F(2, 48) = 11.01, p = .000, \eta^2 = .399$. Follow-up univariate ANOVAs revealed significant differences with the Task $F(1, 49) = 6.25, p = .016, \eta^2 = .113$ and Time $F(1, 49) = 8.77, p = .005, \eta^2 = .152$ features of TARGET, indicating physical education PTs utilized a higher percentage of each feature within the task-orientation. In addition, Neutral Time was revealed as significant $F(1, 49) = 12.06, p = .001, \eta^2 = .198$. Differences in results associated with Authority, Recognition, Grouping and Evaluation were deemed insignificant within both the task and ego-oriented climate (See Table 3).
Discussion

The primary emphasis of this research was to examine the differences between PTs enrolled in a classroom education program compared with PTs enrolled in a physical education program in terms of implementation of a task-oriented TARGET climate. Results indicated that physical education PTs were more effective in developing a task-oriented motivational climate. Specifically, Task and Time principles were implemented more by the physical education group compared with the classroom PTs. These results further illustrate the importance of providing physical education instruction from a trained specialist. However, there was no significance associated with the principles of Authority, Recognition, Grouping and Evaluation between both groups.

The significant findings associated with Task and Time were most interesting as they are supportive of previous TARGET studies. These results support the previous study by Perlman ad Goc Karp (2007) whereby PTs were most likely to implement the concepts of Task and Time before other TARGET principles. A plausible reason for the significance related to Time and Task for the physical education PTs could have been related to a higher level of content knowledge. Undergraduate students pursuing a degree in physical education are more likely to be experienced within a variety of movement settings and possess a higher level of understanding of the specifics associated with various forms of movement (Siedentop, 2002). As such, the ability of physical education PTs to develop and implement a task that possesses a wide array of challenges to meet the needs of the students, as well as, be able to progress the task (e.g. time) to allow for student success can be directly related to a deeper understanding of content.

The result associated with Authority is consistent with the structural focus of an elementary educational setting. Tsouginant and Siedentop (1983) examined the environmental factors of a
physical education context and found that teachers (a) focus on the management of students and (b) must be explicit to assist in directing elementary students toward a learning goal. Within the Authority element of TARGET, teachers may not have given control to their students due to (a) student’s inability to take over their learning and (b) a teacher’s need to be clear and concise (e.g. do what I say and how I say it) within their instruction to guide students toward learning. In a primary setting, students most likely do not possess the ability to critically think when compared with older students. For instance, primary teachers would use less open-ended questions as the student’s ability to interpret and adequate respond is limited. Furthermore, the detail of instruction is paramount. For instance, when moving students from one activity to the next, a primary teacher might make the following statement, when I say go, you will walk quickly and quietly, hands to your side and line up at the door. This level of detail supports the notion that elementary students possess a high degree of ability to negotiate and interpret statements that in turn can push the sense of control back toward the teacher.

The lack of difference for Recognition, Grouping and Evaluation may have occurred due to both groups (a) feeling a need to provide feedback during a lesson and (b) creating an inclusive setting. As PTs develop their skills as a teacher, the notion is that teachers should provide feedback during activity time. Feedback can provide recognition and evaluation of performance. As such, both groups may have been focused on providing feedback (without any notion of what the feedback should entail) to their students. Furthermore, grouping of students relied on the concept of creating groups with random ideas (person with the same color shirt as you). PTs within both groups planned to create random groups, thus this concept may have been implemented at the same level. For instance, within both courses PTs were advised to plan ahead about how they would group students and use strategies that their students could not plan for (picking a color out of a hat) and manipulate to work with their friends.

Conclusion and Future Directions
These findings suggest that physical education PTs were more able to implement a motivational climate when compared with PT classroom teachers. Results lend support for utilization of physical education specialists rather than classroom teachers at the elementary level. Trained professionals with higher levels of pedagogical and content knowledge in a specific area (i.e. physical education) may provide a better learning experience for their students. As such, policy and practice changes may be required to (a) overcome the marginalization of physical education and (b) provide the best education for elementary students within all subject areas. Future studies may be focused on gaining insight into why specific aspects of TARGET are implemented and/or if some principle(s) may not be important within the elementary setting.

References

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