Motivational climate in United States Army Reserve Officer Training Corps physical training: Implications for leadership development, retention, and intervention

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Abstract

Physical training (PT) is a significant element of Army Reserve Officer Training Corps (ROTC) programs, used for fitness enhancement and leadership development. Despite this latter emphasis, there is little known about how leadership development is promoted. Additionally, little research addresses the motivational climate in ROTC programs. Grounded in achievement goal theory, this study investigated structures and perceptions of the motivational climate, an important factor in leadership development, in one United States (U.S.) ROTC PT setting from multiple perspectives (i.e. cadre and cadets). Data collection included field observations of PT sessions over a five-month period (n=30) and semi-structured interviews with cadets (n= 20) and cadre (n= 5). Data was used to obtain views of how to increase cadet motivation during PT. Interview transcripts and field notes were analyzed using inductive analysis and constant comparison methods. Analysis revealed a motivational climate that fostered leadership development emphasizing camaraderie and personal-growth through tough physical challenges (e.g., ruck marches) and normative performance-based critiques (e.g., ability group runs) that emphasized self-improvement. Cadre and cadet leadership were expected to “lead by example” (i.e. show high effort during PT and provide social support for cadets under their command). Based on these findings, it appears that the motivational climate of the ROTC PT environment may contain a combination of task- and ego-involved structures, both of which are perceived as facilitating high levels of motivation and improvement in both PT and leadership. Changing the evaluative structures to better facilitate individual improvement could be used by cadre to facilitate more robust teaching techniques, emphasizing cadet leadership development throughout the battalion’s hierarchical chain of command. For example, utilizing both task- and ego-involved structures in tandem to manipulate PT tasks and instruction could elicit a stronger motivation in cadets and thus potentially bolstering program retention rates.

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1. Introduction

The Army Reserve Officer Training Corps (ROTC) mission is to meet the United States (U.S.) Army’s leadership requirements and provide a citizenship program that motivates young people to be strong leaders and better citizens [1, 2]. Completion of an ROTC program provides individuals with the training and leadership requirements set forth by the U.S. Army to commission as a Second Lieutenant [2].

Within ROTC, cadre are active duty military who serve in leadership roles to oversee all ROTC activities, whereas cadets are University students working toward becoming a commissioned officer. The cadet hierarchical ranking system (MS1 (i.e., first year cadet) to 4 (highest ranking cadet leadership positions, have completed Cadet Leadership Course (CLS))) is based on program experience and completion of leadership requirements. Students are allowed to join an ROTC program at any point during their academic career, including graduate students, assuming they have at least two years left in their respective degree programs to meet all program requirements.

Physical training (PT) is a mandatory requirement that aims to increase cadets’ physical abilities and leadership skills in effort to prepare cadets for the rigors of their assigned military job [3, 4]. PT’s effectiveness for achieving improvements in physical ability is assessed via the Army Physical Fitness Test (APFT) (i.e. two-minutes each of push-ups and sit-ups and a two-mile run) which, cadets must pass twice a year [5].

Conversely, there exists no formal guidance for how to promote (or evaluate) leadership skill development in ROTC PT. In fact, no formal reports exist to even describe the strategies and tactics that are currently used informally to achieve this goal. Therefore, the purpose of this study was to obtain descriptive information about the methods currently used by ROTC cadre and senior-ranking cadets to promote leadership development during PT. Specifically, this study focused on describing the motivational climate created during PT that might promote (or hinder) leadership skill development, since motivational climate is known to have a direct influence on leadership skill development [6], program commitment [7], and attrition rates [8] in group social settings like PT.

1.1. Motivational climate

Achievement Goal Theory (AGT) [9] represents a reputable framework for characterizing motivational climate, particularly in physical fitness domains [9, 10]. According to AGT there are two types of motivational climates (i.e., task- and ego-involved) that have dichotomous impacts on individuals’ perceptions of competence, motivation, and success [11]. A task-involved climate is characterized by environmental structures that emphasize personal competence, task mastery, and individual improvement [12, 13]. In this type of climate, high effort levels are viewed as the foundation of improvement, there is great value placed on enhancing personal competence and task mastery, and mistakes are considered a normal (and informational) part of the learning process. Conversely, an ego-involved climate is characterized by environmental structures that emphasize normative competence, competition, demonstration of high ability, and recognition for standout performers within a group [12, 13]. Historically, research has supported establishing task-involved motivational climates, since such climates have been associated with increased self-efficacy, positive affect, and better commitment and retention, whereas ego-involved climates are often associated with reported anxiety, lower levels of cohesion, and attrition (see [14] for a good review).

There are numerous social factors that can influence the motivational climate of a group social environment, including coaches, teachers, parents, or peers [15]. In the U.S. military, significant emphasis is placed on a hierarchical model of vertical leadership (i.e. chain of command). Therefore, individuals in ROTC leadership positions likely have a major impact on establishing the motivational climate of PT environments. However, it is unclear how ROTC leaders shape this climate, and more importantly, the impact that such a motivational climate has on important factors such as leadership development, performance, camaraderie, commitment, and task competence.

In many exercise and sport contexts, increasing personal competence, promoting task mastery, and performing better than others all represent pertinent standards of success [15]. Many researchers to date have used quantitative methodologies to determine the statistical relationships between task-involved and ego-involved climates (e.g., [11]), manipulated the task structures of an environment to represent either a task- or ego-involved climate [18], or used a combination of both (e.g., [17]). Not readily utilized, qualitative methods allow investigators to organically explore individuals’ perceptions about how they experience a phenomenon (i.e. motivational climate) without manipulating environmental structures [18, 19, 20] and can serve to inform basic theory and guide future research and/or policy.
As such, the purpose of this study was to qualitatively investigate perceptions and structures of the motivational climate in one ROTC PT setting during a five-month period. Specifically, the aim was to compare and contrast the long-term field observations with cadres’ and cadets’ perceptions of the motivational climate structures. This type of information, normally unavailable to individuals outside the U.S. Army, was utilized to better understand and enhance the motivation and leadership development potential of primary stakeholders in ROTC programs.

2. Materials and methods

2.1. Participants

Approval for this study was obtained from the university’s Institutional Review Board and all participants provided informed consent. All cadets and cadre who took part in PT sessions in one U.S. Army ROTC program battalion (n = 78) at a large Southeastern university were observed. A subset of the battalion, twenty (n = 20) cadets and five cadre (n = 5), were individually interviewed. Of that subset, cadets were predominately male (n = 15). Six students were classified as Military Science year-one (MS1) ROTC cadets, 5 were classified as year-two (MS2), 3 were classified as year-three (MS3), and 6 were classified as year-four (MS4). Participants were chosen using maximum variation sampling, allowing for an equally heterogeneous sample across the population and maximizing the relevant diversity [20]. Furthermore, participant selection accounted for both male and female perspectives; however, battalion distribution numbers revealed significantly more males than females. Three cadre were commissioned or retired Army officers. Two cadre were non-commissioned officers. All cadre who oversaw PT agreed to partake in an interview, thus variation sampling was not used for selecting cadre participants. Exclusionary criteria for cadets included those enrolled in PT for credit but otherwise not affiliated with the ROTC program. Exclusionary criteria for cadre included those who worked with the ROTC program but did not oversee PT sessions.

2.2. Setting

ROTC PT sessions were required 3-days per week and met between the hours of 0330 and 0600. Each PT session breakdown was required to include the following details: nature and duration of the workout, location, time of formation, and the appropriate U.S. Army physical fitness uniform pattern. The U.S. Army’s Field Manual 7-22 outline pre-approved and appropriate physical readiness training exercises (including warm-up and stretches) for use during all PT sessions [2, 21]. Exercises were intended to assist participants, in progressively developing endurance, strength, and mobility [2]. All pertinent PT session information was distributed by cadet leadership in a chart to cadets and cadre on a weekly basis.

2.3. Data collection

Field observations were used to gain a comprehensive overview of the motivational climate and culture, as well as to connect concepts from data collection with the AGT framework. All observations (n = 30) were completed two to three days per week by a single female observer who possessed extensive knowledge of ROTC procedures but whom was otherwise not affiliated with the program - thus decreasing potential collection or analysis bias. Due to the extensive amount of time spent in the field, the observer became accepted by both cadet and cadre as a fixture at PT. Field notes included description and subjective review. “Description” documented the environmental factors of PT that may have influenced the motivational climate. Second, “Subjective Review” focused on relating the events of each PT session (e.g., workout, cadet-cadet and cadet-cadre interactions, formation, schedule, and hierarchy) to AGT concepts. Each PT session lasted between 60 to 90 minutes and varied in activity (e.g., running, ruck-marches, calisthenics, etc.). The primary researcher took field-notes before, during, and directly after each PT session.

Cadets (n=20) and cadre (n=5) completed an individual semi-structured interview [20]. An interview guide was created and piloted with one ROTC cadet and one cadre not involved in the study to refine its content [21]. The cadet interview guide focused on perceptions of the PT motivational climate while the cadre interview guide focused
on views about how to motivate cadets during PT. All participants were briefed about the nature of the interview and informed that an audio recording device would be used for later transcription and analysis.

2.4. Data analysis

Content analysis is an analytic process that consists of organizing large amounts of transcribed data [19, 20] to interpret the contextual meaning. Inductive analysis was used in the initial coding process of interview transcripts and field notes. Two researchers, both considered experts in the field and having extensive military culture, motivational climate, and qualitative research experience independently interrogated transcripts line-by-line to ensure categorical and thematic agreement [20, 21]. Similar to previous studies, tenets of AGT research were used as a deductive lens to find categorical patterns. Triangulation of literature and data sources was used to build consensus in the interpretation of the data, thus establishing data credibility [20].

3. Results

Content analysis revealed three primary themes related to the motivational climate of ROTC PT: (a) Leadership culture; (b) Camaraderie through challenge; and (c) Evaluation and success. Primary themes illuminated the motivational climate to reveal the role of task and ego motivation within PT environment and the potential for leadership development that ensues. Sub-themes revealed characteristics and experiences pertinent to the development of the motivational climate. Experiences and values central to the Army and ROTC way of life not only emerged as present but vital to instantiating a motivation climate bolstered through the use of task- and ego-involved structures.

3.1. Leadership culture

The results highlighted the explicit use of PT as a tool to develop cadets’ leadership abilities. For example, the intense physical challenges of the PT environment provided cadets with numerous opportunities to develop different types of leadership qualities [12] and cadre consistently observed and evaluated cadets’ PT behaviors from a leadership perspective. Interestingly, though previous research has indicated that physical activity and sport do not, by themselves, build character (of which leadership is generally considered a sub-category) [22], this may not be true if those involved, as well as those in charge, emphasize the role of leadership in those activities and use PT for the explicit purpose of leadership development. In such a case, the argument could be made that PT might be able to build leadership skills. In support of this speculation, PT appeared to be strategically implemented as a catalyst for developing battalion leadership and personal growth. “Lead by example” and “creating a chain of command” emerged from interviews and field notes as the two predominant sub-themes used to develop a leadership culture.

3.1.1. Lead by example

Cadre reported that being a top authority of the battalion and role model to cadets was vital to both teaching cadets about leadership and manipulating climate to shape cadet motivation. The presence of cadre at all PT workouts emphasized the importance of modeling hierarchical leadership behavior in ROTC culture. In most PT sessions, cadre completed the PT sessions with the cadets. As one cadre noted:

[I use] Direct motivation through participation. [Cadets] say, “I want to be an officer!” and since I’m an officer, I tell them to come to PT every day because it sets the tone and the image [of a leader]. Your soldiers are going to look to you, and then [if I were] to not show up to PT, in my mind I would be talking out of both sides of my mouth. I do PT with them, so that is motivation.

In addition, cadets recognized this tactic and viewed it as important for their own personal leadership development and competency (task-involved). For example:

[Cadre] are good examples of what we can work toward and what a good leader should be because they [cadre] are [good leaders]. I know they definitely keep us on the right track to where we need to be. The cadre does not make us emulate them. They want us to be our own leaders and develop individually, and in the process be a guide to other cadets. (MS3)
The precedence to lead by example had an unmistakable and recurring impact on the motivational climate during PT. However, cadet motivation using this tactic was also fueled by PT performance rewards (ego-involved, e.g., by being promoted to battalion leadership positions). Displays of high ability were glorified; motivating cadets to both achieve task improvement and place high priority on competition. Cadets were expected to demonstrate their PT ability as a reflection of their battalion leadership potential. An MS4 explained the rationale behind the connection: “In the Army being physically fit tells other people how you’ll do in leadership. It’s how other people judge if you’re going to be a good leader. If you’re lagging in PT then people won’t think as highly of you and won’t have as much respect.” Throughout ROTC, cadets were expected to learn and demonstrate Army values and leadership characteristics considered critical after commission. Implementation of task- and ego-involved structures throughout the hierarchical command structure appeared to be another strategy to develop a powerful leadership culture in PT.

3.1.2. Building a chain of command

ROTC prepared cadets for all aspects of soldier life, including learning the military chain of command. Thus, during the PT sessions, there was a clear-cut hierarchical leadership structure. The chain of command was laid out as: MS1 cadets report to MS2; MS2 report to MS3; MS3 report to MS4 (cadet leadership); and MS4 report directly to cadre. After each workout the lead MS3 for the PT session, their company commander (MS4), and cadre debrief about the quality of the session and how to improve future sessions. Thus, cadets were given the task strategies and critical reinforcement through authority to ascertain mission (i.e. PT session) success and ultimately improve leadership development. A MS4 elaborated on this hierarchy: “You talk to the next person in the chain of command. If [cadets] go over the heads of higher-ranked cadets and talk to cadre, then we make them suffer.” Cadets also looked to the chain of command as a tool for guidance and support as noted during Observation 15: “One member of cadre gives leadership cues about giving orders to the lead MS3. ‘You’re in charge of them. They’re not in charge of you. If you say stretch left arm then everyone should be stretching left arm.’”

Leadership development involved motivating, supporting, and educating cadets lower on the chain of command. PT provided a physically challenging environment to refine this process, enhancing the motivational climate through positive reinforcement (i.e. affirmative written reviews and praise). The long-term goal of developing the leadership qualities necessary for cadets to advance in the military infrastructure was constantly reiterated down the command hierarchy. “Cadre have already put in their time and I want to be where they’re at. [Cadre] are in a successful position and I want to get to the point where I can pass my knowledge down the chain to other soldier generations” (MS1). Gleaning knowledge from the experience of older cadets and cadre helped newer cadets achieve feelings of cultural competence and understanding thus, positively influencing the motivational climate.

3.2. Camaraderie through challenge

Camaraderie was critical to creating cohesion among cadets [1]. PT was often used as a process to develop social bonds during the process of testing their physical limits. In this study, it appeared that sharing the pain and sweat of PT workouts facilitated a peer-supportive environment that allowed cadets to maximize their effort. While each cadet came into the program with a different set of experiences and skills, a shared goal of APFT success bonded them regardless of the PT challenges that emerged throughout the duration of the program. “PT and camaraderie” and “Cadet support” emerged as subcategories.

3.2.1. PT and camaraderie

Camaraderie through effective leadership is seen by the Army as the most important intangible human element [1]. As cadets complete challenging PT sessions they rely more heavily on fellow cadets for support in the form of encouragement, empathy, and friendly competition. “Everyone works hard during the workout. There is chatter between cadets. Morale and camaraderie levels are high, as evident by cadets helping each other up after exercise intervals and encouragement during exercises” (Observation 4). Empathy seemed to help motivate cadets to push harder towards high PT ability and task competence. An MS2 discussed the affects AAPFT success had on peers,
I got a 250 on a PT test, my highest. Just being able to perform at that level and show that I could do that, when I didn’t think I could. It made everyone else around me think they could do better because I had a whole bunch of friends who were trying to get to the level in PT and then they succeeded as well.

Cadets seemed to try to balance their desire for competition and displays of high ability (i.e. ego-involved) with camaraderie and desire to push themselves (i.e. task motivation). A cadre member discussed this balance and stated, “Motivation is a personal choice. [Cadets] are motivated. Challenge motivates them, so they want to challenge themselves and compete so they go out there and do that. So those motivators, I think as long as the program provides them some challenge they will continue.” Workouts were designed to challenge cadets, both individually and competitively within the battalion. As cadets proceed through the program the motivational climate of PT provided an opportunity for cadets to improve physically and as leaders.

3.2.2. Cadet support

Ego-involved structures (e.g., group mentality and improvement) within the motivational climate of PT helped cadets push each other and forced heavy reliance on peer support, resulting in both personal and battalion improvement. An MS1 summed this up stating, “Most of the time I’m challenged to my limits I guess, but I wouldn’t consider it something that I just can’t do physically. My friends [in the battalion] really help push me to that limit. We compete with each other and it really helps.”

While competition, clearly an ego-involved structured, played a large role in developing battalion leadership, cadets also adhered to the task-based peer support in instances of high challenge. Challenges in ROTC provided a chance to develop battalion leadership through supportive social bonds. The cadets’ developed lasting impressions about the sense of brotherhood and family stemming from their PT experiences. For example, one MS2 said:

“Is fun because it’s a competition and it’s fun to compete. They always want to one up each other and it builds camaraderie. You think, ‘Every day I got to wake up and see this guy.’ If you’re taking a class with somebody you see them Monday, Wednesday, and Friday. Here you got to see them every day and so it’s almost like, ‘Hey that’s my brother out there. That’s my sister.’ Even on some Saturdays we’re up at like 4 am. I say it’s a good community feeling about it. A family feeling about it.

High levels of camaraderie created a fragile balance between competition (i.e. ego-involved) and competence (i.e. task-involved), with a wide range of abilities within the battalion and the need to demonstrate proficiency. Cadets pushed each other within specific ability groups but alienated those who are not as skilled, potentially decreasing peer and subordinate task-motivation. Motivation emerged by way of cadet support, competition, and hierarchical leadership. Ultimately, camaraderie played a significant role in cadet motivation and program success.

3.3. Evaluation and success

Being successful in PT is critical for cadet future Army placement and enjoyment. Achieving higher levels of PT success is calculated with grade point average, CLC performance, etc. into cadet accession scores, a program long record that determines duty station assignment and job. Furthermore, cadet PT success and failure determined their retention or expulsion from the program. As cadets progressed through the program motivation evolved based on the performance requirements thus, “APFT Scoring” and “Rewards of Performance” emerged as the predominant sub-themes.

3.3.1. APFT scoring

Based on Army standards, the maximum attainable score is a 300- a score of 100 in each of the three events. PT was tailored towards APFT achievement, thus cadets’ PT success (or failure) was primarily determined by their performance on the APFT. This created ego-involved evaluation structures that stressed performance outcomes and led many cadets to endorse goals that focused on performance outcomes (e.g., “maxing the APFT”). Personal improvement, however, was viewed as a strategy to reach performance-related goals. For example, Observation 26 noted, “The cues cadet leadership give to the MS1s and 2s about form, time, etc. make it appear that these PT sessions give the cadet leadership the ability to prove themselves.” One MS4 recalled the success he felt during a memorable APFT experience:
I’d been working really hard, I remember, even to this day. Scoring a perfect 100 on the APFT run was a big confidence booster and made me feel extremely successful. I’d never maxed any of the other two events before. It made getting to that ideological goal of scoring a perfect 300 on the test that much more attainable since I’d already maxed the run. That was probably one of the more pivotal moments in my ROTC life.

APFT success influenced a cadet’s overall accession scores, increased their motivation, and the likelihood they were seen as a competent leader by other cadets. Aside from official scoring requirements each cadet held themselves to a task-based competence standard. For some that standard was to achieve the illusive 300 score. Personal goal achievement is a significant performance reward that has the potential to influence their place within the battalion.

3.3.2. Rewards of performance.

Accomplishments in PT were largely ego-involved including rewards such as being placed in battalion leadership roles and receiving favorable evaluations from leadership. Performance rewards were linked to a positive motivational climate deeply rooted in Army leadership development [1]. This was clear to most cadets. Workings towards task competence helped cadets understand that rewards in PT were not instantaneous and motivationally draining, as described by a member of the cadre:

The hardest thing is to realize that the work will benefit them 6, 12, 18 months in the future, as opposed to that immediate return they don’t have. So convincing or motivating them or having them realize that there is benefit even if they don’t see something right in front of them is difficult and challenging.

Cadets in the battalion were held to a higher level of expectation than the basic Army PT requirements. As cadets increased their ability they adopted the battalion PT expectations as their own, using the task-based motivation and high expectations to improve and succeed.

A MS2 finishes the exercise before everyone else nearly every time and jogs in place. The workout is tough but he does not use the time to recover, but pushes himself to accomplish more than what is asked - a trend in PT. Doing only what is asked does not reflect well during evaluations and PT tests (Observation 14).

Cadre were critical in extenuating those high expectations, providing ongoing evaluation to motivate cadets, positively influencing PT ability and performance. An MS4 explained this as,

When I’m evaluated and told I’m doing something right it kind of motivates me like, “Ya I’m doing something right, or I need to do it right.” It makes you feel better and want to work harder. Conversely, if you’re doing it wrong it makes you want to work harder too.

Cadets able to utilize both the task- and ego-involved structures implemented in PT appeared to improve physically and as a leader within the battalion. Although PT improvement was discussed by many cadre and cadets, both evaluation and reward structures mirrored an ego-involved motivational climate.

4. Discussion

This study investigated the motivational climate within one Army ROTC PT setting and then examined the links between that climate and cadet leadership development. From a theoretical standpoint, if task-involved and ego-involved climates were antagonistic in nature [10, 14], then the conflicting task-involved and ego-involved structures and perceptions of this PT environment likely produced a variety of positive and negative motivational outcomes in cadets. On the other hand, if task-involved and ego-involved structures and perceptions were independent and/or complimentary [15], then the interwoven emphasis placed on both task-involved and ego-involved structures in the PT environment may have enhanced cadets’ motivation. Coupled with results from cadre interviews and researcher observations, findings from this study supported the latter theoretical position (i.e. both task- and ego-involved structures were salient in PT motivational climate).

Interpretation of interviews suggested that most cadets realized that physical fitness was an important part of being successful in the Army and performing well individually and normatively in PT often provided opportunities for ROTC program advancement. Thus, task- and ego-involved structures in PT aligned to the objectives of the ROTC program, and ultimately cadets’ success as leaders. Previous researchers have highlighted increased levels of motivation when perceptions of the motivational climate match beliefs about the purposes of sporting context [16].
Therefore, we posit that cohesion between the motivational climate and ROTC objectives facilitated adaptive forms of motivation observed during PT sessions and reported by the cadets. Historically, an ego-climate is not conducive to building camaraderie; however, results indicate strong cohesion throughout the battalion, even in the presence of ego-involved motivational climate. Additional research should challenge the widely-accepted notion that ego-orientation harms long-term motivational climate. This hybrid motivational climate also fostered high levels of leadership development. Task-involved structures provided cadets opportunities for personal growth and camaraderie throughout a variety of challenging settings. Ego-involved structures enabled cadets to develop leadership skills through peer-support and to a varying degree leadership was developed and reinforced through competition and upward hierarchical movement. Army culture is in of itself an interesting subset of physical training research; thus, methodological expansion to other ROTC battalions could rule out “cultural anomaly” as rationale for the aforementioned results. The practical implications from this study supported the idea that cadre should implement a variety of task- and ego-involved structures based on the situational elements of PT. Emphasis on task-involved structures could bolster self-confidence and physical effort. Ego-involved emphasis may be more effective at increasing effort and solidifying leadership skills through normative competence.

References