

MARITIME EDUCATION FACTORS AND PRESENTEEISM: A COMPARATIVE QUANTITATIVE STUDY

Virginia R. Ferritto, Ph.D.

Assistant Professor, Global Business and Transportation Department, SUNY Maritime College,
6 Pennyfield Avenue, Bronx, NY 10465

E-mail: VickiF631@aol.com or vferritto@sunymaritime.edu

ABSTRACT

Presenteeism research has only recently extended from a construct capturing lost productivity due to attending work despite health issues to a construct representing students' perceived academic performance. Aligning with presenteeism's prevalent research paradigm, the pioneering studies used health-related issues to measure presenteeism. In contrast, this study used the Presenteeism and Perceived Academic Performance (PPAP) Scale, which the researcher developed for this study. The PPAP Scale is comprised of aspects of student behavior that support academic performance. This study filled gaps in the literature by investigating presenteeism as a concept associated with students' perceived academic performance, measured with the PPAP Scale, and factors specific to maritime education. The factors investigated were identified by the study respondents, in sufficient numbers to support statistical analysis, as favorably (i.e., cruise and license/maritime instruction) or negatively (i.e., mandatory regimental activity, taps, morning or afternoon formations, and watch) impacting their academic performance. This study found no statistical evidence to suggest the level of presenteeism, measured with the PPAP Scale, among the study's sample of license students is associated with factors perceived to favorably or negatively impact academic performance. Additional insight can be gained from license student participants' responses to the study's open-ended questions (e.g., a perceived imbalance between time available to allocate to their academics and time needed to fulfill regimental responsibilities).

Key Words: maritime education, presenteeism, student perceived academic performance, license student, cadet, maritime academy, maritime college

1. INTRODUCTION

Unlike other colleges and universities in the United States, the country's six State Maritime Academies (i.e., State University of New York Maritime College, Maine Maritime Academy, Great Lakes Maritime Academy, California Maritime Academy, Texas A&M Maritime Academy, and Massachusetts Maritime Academy) are structured to provide a traditional college degree as well as maritime education, which, for this study, is defined as educating students seeking a Degree and a United States Coast Guard (USCG) License (hereafter referred to as the Degree/License program). Furthermore, although the Degree/License program is available in conjunction with a Master's degree program (e.g., State University of New York [SUNY] Maritime College, 2013a), for the purposes of this study, the Degree/License program consists of undergraduate degree curriculum and curriculum focused on educating merchant mariners, including preparing students for the USCG License examination. Therefore, in addition to a traditional undergraduate degree curriculum, the six State Maritime Academies are subject to mandates of numerous external regulatory bodies governing USCG license-related curriculum content as well as federal requirements regarding the on-campus Regimental system (hereafter referred to as the regiment) that supports the Degree/License program (Department of Transportation, Maritime Administration [MARAD], n.d.; SUNY Maritime College, 2013b). Regiment participation is optional for non-license students, some of whom exercise this option to experience the regiment's structure and opportunities for personal development. In comparison, all Degree/License program students (hereafter referred to as license students) must participate in the regiment as mandated by regulations related to training and educating merchant mariners.

To participate in the regiment, license students live on campus within a mandated framework of regimental responsibilities, obligations, rules, regulations, and activities designed

to promote leadership, develop integrity and an understanding of responsibility, foster judgment and decision making skills, and, for those students who are pursuing a license, further support license training (SUNY Maritime College, 2013b). Regimental responsibilities include attending scheduled formations throughout the regimental week and adhering to conduct, grooming, and personal appearance standards, including a stringent dress code. In addition, certain requirements of the license program, such as standing watch, are built into the regimental system. These and other regimental responsibilities, guidelines, rules, and regulations, which are detailed in the Regimental Handbook of each State maritime academy (e.g., Maine Maritime Academy, n.d.; Massachusetts Maritime Academy, n.d.; SUNY Maritime College, 2013c), are distinct maritime education-related elements that are integral to license students' maritime training and education. However, there is a lack of scholarly literature investigating maritime education-related elements' influence on students' perceived academic performance, which this study defines as presenteeism.

Extant presenteeism literature is dominated with studies investigating presenteeism as a concept associated with lost productivity resulting from workers attending work despite not feeling well (Braakman-Jansen, Taal, Kuper, & van de Laar, 2012; Ferritto, 2013; Goetzel et al., 2004; Lerner et al., 2012; Sanderson, Tilse, Nicholson, Oldenburg, & Graves, 2007; Simon et al., 2001). The concept of presenteeism has only recently extended to academic performance; however, in those pioneering studies (e.g., Deroma, Leach, Leverett, 2009; Hysenbegasi, Hass, & Rowland, 2005; Matsushita et al., 2011; Mikami et al., 2013), presenteeism was defined as academic performance loss resulting from students' health issues. In contrast, this study operationalized presenteeism using the Presenteeism and Perceived Academic Performance (PPAP) Scale, an instrument developed for this study by the researcher. The PPAP Scale

measures presenteeism using aspects of student behavior (i.e., paying attention during class; class participation; class attendance; tardiness, and note-taking) that scholars and practitioners associate with supporting academic achievement.

Thus, the problem prompting this study is the lack of extant maritime education and presenteeism literature investigating maritime education-related factors' association with students' perception of their academic performance, operationalized as presenteeism measured using academic achievement-related elements instead of health issues. Accordingly, the purpose of this cross-sectional, non-experimental, paper-pencil survey, comparative quantitative research study was to add to limited extant maritime education and presenteeism literature and fill gaps in the literature by investigating presenteeism as a concept associated with students' perceived academic performance and factors specific to maritime education and do so with an instrument comprised of academic achievement-related elements to operationalize presenteeism.

2. LITERATURE REVIEW

Presenteeism, a relatively new field of study, evolved from a research paradigm focused on absenteeism. In one of the first articles to include mention of the concept, Uris (1955) presented presenteeism in the context of fostering harmony among personnel as a method to reduce absenteeism. Another early article included discussion of presenteeism in terms of enhancing work conditions to encourage less absenteeism (Canfield & Soash, 1955). Smith (1970) mentioned presenteeism, albeit in only one paragraph, to support discussion of the adverse effects of absenteeism. Thus, early discussions of presenteeism regarded the concept as a favorable alternative to absenteeism; presenteeism was attending work.

In the 1990s, presenteeism emerged in scholarly literature as a concept associated with lost productivity. Adelman et al.'s (1996) seminal study exploring the effects of migraine

medication on absenteeism and other variables, including productivity loss, was described by Johns (2011) as a “symbolic tipping point in the study of presenteeism” (p. 531). Adelman et al. (1996) formulated a construct to represent the concept of lost productivity by combining several work-related determinants, such as time worked despite migraine symptoms, defining the new concept as time an employee with symptoms continued to work. This approach to capturing productivity loss has evolved into the measurable concept of presenteeism (Ferritto, 2013). To facilitate presenteeism’s measurement, early presenteeism researchers, such as Osterhaus, Gutterman, and Plachetka (1992), van Rooijen, Essink-bot, Koopmanschap, Michel, and Rutten (1995), Adelman et al. (1996), van Rooijen, Essink-bot, Koopmanschap, Bonsel, and Rutten (1996), Burton and Conti (1999), and Burton, Conti, Chen, Schultz, and Edington (1999), developed instruments comprised of various construct attributes relative to working despite not feeling well (e.g., degree of concentration and ability to complete tasks).

Thus, the 1990s marked the beginning of increasing interest among the scholarly community to measure lost productivity using the abstract concept of presenteeism. Some scholars (Brown, Gilson, Burton, & Brown, 2011; Chapman, 2005; Willingham, 2008) attribute presenteeism’s coinage and association with productivity loss to Cary Cooper, an organizational management specialist. Others (Hemp, 2004; Johns, 2011, 2012) have argued that an emerging health care research perspective in the early 1990s was the major driver of scholars’ acceptance and adoption of presenteeism’s generally accepted definition. Regardless of the definition’s genesis, the presenteeism body of scholarly knowledge is dominated with studies defining presenteeism as workplace productivity loss resulting from workers attending work even though they do not feel well (Braakman-Jansen et al., 2012; Ferritto, 2013; Goetzel et al., 2004; Lerner et al., 2012; Sanderson et al., 2007; Simon et al., 2001).

Research has shown that presenteeism costs are as significant as those associated with absenteeism (Goetzel, Hawkins, Ozminkowski, & Wang, 2003; Lack, 2011; Schultz & Edington, 2007). Some studies, (Aston, 2010; Kulesa, 2008; Loeppke et al., 2009; Paton, 2010) have shown presenteeism-related productivity costs exceed those associated with absenteeism. Furthermore, presenteeism may contribute to worsened health conditions (Lack, 2011; Paton, 2009; Preece, 2009). In addition, according to Goetzel et al. (2004), costs associated with presenteeism are as much as three times more than other employer health-related costs, such as absenteeism, disability, and medical expenses. The World Economic Forum (2008) reported that productivity losses cost as much as 400% more than costs incurred for medical treatment of the illnesses.

The extension of the concept of presenteeism from its widely accepted definition, namely, workplace productivity loss resulting from workers attending work despite health issues (Gosselin, Lemyre, & Corneil, 2013; Hemp, 2004; Johns, 2011, 2012; Prater & Smith, 2011), to studies investigating academic performance loss among students as a result of health issues is a new approach to presenteeism research. Aligning with presenteeism's prevalent research paradigm, the pioneering studies (e.g., Deroma et al., 2009; Hysenbegasi et al., 2005; Matsushita et al., 2011; Mikami et al., 2013) used health-related issues to measure presenteeism. For example, Hysenbegasi et al. (2005) explored depression's influence on students' self-reported academic performance among 330 undergraduate students attending Western Michigan University; 121 participants were diagnosed with depression and 209 participants were in a control group. Academic performance was conceptualized using self-reported depression-related presenteeism and depression-related absenteeism as well as GPA and assessment results. Recently, two studies of Japanese first-year undergraduate students attending universities in

Japan (i.e., Matsushita et al., 2011; Mikami et al., 2013) explored presenteeism as a construct associated with academic performance by operationalizing presenteeism using the Presenteeism Scale for Students (PSS; Matsushita et al., 2011). The PSS measures presenteeism as a construct derived from various health-related issues (see the Measurement Instrument section of this paper for further discussion).

In contrast, this study, which avoided health-related variables, is the first to measure presenteeism as a construct representing academic productivity loss using the Presenteeism and Perceived Academic Performance (PPAP) Scale. The PPAP, a measurement instrument developed by the researcher, operationalizes presenteeism, defined as students' perceived academic performance, with a score derived from five aspects of student behavior that scholarly literature has associated with student academic achievement: (a) paying attention in class; (b) class participation; (c) class attendance; (d) arriving on time for classes; and (e) note-taking (see the Measurement Instrument section of this paper for further discussion). Use of the PPAP Scale supported investigation of this study's research questions.

3. RESEARCH QUESTIONS AND HYPOTHESES

This study's purpose was to explore the relationship between levels of presenteeism, defined in this study as students' perceived academic performance, and distinct maritime education-related factors that license students reported as having a favorable or negative influence on their academic performance. Accordingly, the study's overarching question was: What is the difference in the level of presenteeism between license students who do and do not report distinct maritime education factors as having either a favorable or negative impact on their perceived academic performance? The study's specific research questions were based on favorable factors (i.e., cruise and license/maritime instruction) and negative factors (i.e.,

mandatory regimental activities, taps, morning or afternoon formations, and watch) identified by the study's respondents, in sufficient number to support analysis, as impacting their academic performance. This study's six research questions are recapped as follows with their corresponding null (H_0) and alternative (H_a) hypotheses:

1. What difference is there in the level of presenteeism between license students who did and did not identify cruise as favorably impacting their academic performance?
 - H_01 : There is no difference in the average presenteeism score between license students who did and did not identify cruise as favorably impacting their academic performance.
 - H_a1 : There is a difference in the average presenteeism score between license students who did and did not identify cruise as favorably impacting their academic performance.
2. What difference is there in the level of presenteeism between license students who did and did not identify license/maritime instruction as favorably impacting their academic performance?
 - H_02 : There is no difference in the average presenteeism score between license students who did and did not identify license/maritime instruction as favorably impacting their academic performance.
 - H_a2 : There is a difference in the average presenteeism score between license students who did and did not identify license/maritime instruction as favorably impacting their academic performance.
3. What difference is there in the level of presenteeism between license students who did and did not identify mandatory regimental activities as negatively impacting their academic performance?
 - H_03 : There is no difference in the average presenteeism score between license students who did and did not identify mandatory regimental activities as negatively impacting their academic performance.
 - H_a3 : There is a difference in the average presenteeism score between license students who did and did not identify mandatory regimental activities as negatively impacting their academic performance.
4. What difference is there in the level of presenteeism between license students who did and did not identify taps as negatively impacting their academic performance?

- H_04 : There is no difference in the average presenteeism score between license students who did and did not identify taps as negatively impacting their academic performance.
 - H_a4 : There is a difference in the average presenteeism score between license students who did and did not identify taps as negatively impacting their academic performance.
5. What difference is there in the level of presenteeism between license students who did and did not identify morning or afternoon formations as negatively impacting their academic performance?
- H_05 : There is no difference in the average presenteeism score between license students who did and did not identify morning or afternoon formations as negatively impacting their academic performance.
 - H_a5 : There is a difference in the average presenteeism score between license students who did and did not identify morning or afternoon formations as negatively impacting their academic performance.
6. What difference is there in the level of presenteeism between license students who did and did not identify watch as negatively impacting their academic performance?
- H_06 : There is no difference in the average presenteeism score between license students who did and did not identify watch as negatively impacting their academic performance.
 - H_a6 : There is a difference in the average presenteeism score between license students who did and did not identify watch as negatively impacting their academic performance.

Additional insight can be gained from participant responses to two open-ended questions included in the questionnaire. One question asked participants how the college could help them better balance their maritime education obligations and their academic performance. The term *maritime education obligations* was defined as activities mandated by the student's academic program. The other question asked participants what they thought they could do to better balance their maritime education obligations and their academic performance. Responses to these questions are not included in the study's research questions and are not among the study's

quantitative analyses; however, discussion about the responses, which may help inform scholars, practitioners, and decision makers, is included in the Discussion section.

4. VARIABLES

This study aimed to investigate presenteeism and maritime education factors that respondents felt favorably or negatively affected their academic performance. The study's six independent variables were based on participant responses to two open-ended questions asking them to identify activities mandated by their academic program that they felt favorably and negatively influenced their academic performance. Respondents were not presented with a list of factors from which they could select. One open-ended question asked respondents to identify favorable factors. Selected due to sufficient numbers to support statistical analysis, responses to that question resulted in two independent variables: (a) cruise and (b) license/maritime instruction. The other open-ended question asked respondents to identify negative factors. Responses with sufficient numbers to support statistical analysis resulted in four independent variables: (a) mandatory regimental activities, (b) taps, (c) morning or afternoon formations, and (d) watch. The study's dependent variable was presenteeism.

4.1 Presenteeism

Presenteeism, this study's dependent variable and only construct, refers to study respondents' self-reported level of presenteeism, defined as students' perceived academic performance. Presenteeism was operationalized by aggregate analysis of the participants' responses to five Likert-type survey questions, collectively referred to as the PPAP Scale, which were embedded in the study's questionnaire. Presenteeism was measured on a continuous measurement scale with a range from 1 = *not difficult at all* to 5 = *difficult all of the time*. This study's approach to scoring presenteeism aligned with presenteeism research's prevailing

perspective (see Measurement Instrument section for further discussion), namely, presenteeism is an undesirable state of being; larger scores are indicative of higher presenteeism (more productivity loss). Accordingly, smaller scores in this study indicated lower presenteeism (perceived higher academic performance); larger scores indicated higher presenteeism (perceived lower academic performance).

4.2 Cruise

Cruise, one of this study's six independent variables, refers to license students' sea time in fulfillment of USCG regulations in compliance with the International Maritime Organization's (IMO's) Standards of Training, Certification and Watchkeeping of Seafarers (STCW).

Requiring USCG approval, each State Maritime Academy's policy may differ slightly to provide various opportunities for its students; however, the calculated sea time must total 360 days. For example, (a) 300 days of sea time must be allocated, in accordance with USCG guidelines, within the categories of training ship, commercial vessel, and other academy vessel; each category has a USCG approved sea time equivalent; (b) no more than 30 days of sea time equivalence can be allocated to in-port watch and maintenance; however, for license students studying engineering, this category is classified as workshop skills and watchkeeping to incorporate portions of required engineering labs into sea time calculations; and (c) no more than 30 days of sea time equivalence can be allocated to bridge simulator training.

4.3 License/maritime instruction

License/maritime instruction, one of this study's independent variables, refers to curriculum focused on training and educating merchant mariners, which includes STCW instructional mandates as well as preparing license students for the USCG License examination.

The Degree/License program includes traditional curriculum to satisfy the requirements of a particular undergraduate degree as well as license/maritime instruction.

4.4 Mandatory regimental activities

Mandatory regimental activities, one of this study's independent variables, refers to mandated periodic (e.g., weekly) assemblies of the regiment for various purposes (e.g., instructional, informational) and covering diverse topics (e.g., regimental leader introductions, unions, the Commercial Vessel Shipping Program process, guest speakers). Depending on the purpose and topic, certain classes are mandated to attend. The classes are freshman (4/C; also referred to as MUGs; Midshipmen under Guidance), sophomores (3/C), juniors (2/C), and seniors (1/C). For example, some topics lend themselves to all classes; thus, all classes must attend. In contrast, only 4/C must attend meetings focused on information applicable specifically to that class. Requests to miss a mandatory regimental activity must be approved by the proper authorities. Unexcused absences may result in demerits or other disciplinary action.

4.5 Taps

One of this study's independent variables, taps refers to mandated end-of-day formations during which all license students must be present. Requests to miss taps must be approved by the proper authorities. Unexcused absences may result in demerits or other disciplinary action. Taps occurs at 11:00 pm during the regimental week. The time that license students are able to go to sleep is directly impacted by taps. For example, 66.7% of study respondents reported going to sleep after midnight.

4.6 Morning or afternoon formation

One of this study's independent variables, morning or afternoon formation refers to regularly scheduled, daily formations during the regimental week. Requests to miss morning or

afternoon formations must be approved by the proper authorities. Unexcused absences may result in demerits or other disciplinary action.

Morning formation, which commences at 7:20 am, refers to assembly before academic classes. Purposes of morning formation include accountability (e.g., to ensure all are present), inspection, announcements, and conveyance of other regimental information as necessary. Assembly times for morning formation are tiered according to class (e.g., 4/C must be in formation by 7:10 am; 3/C by 7:15 am; 2/C and 1/C by 7:20 am).

Afternoon formation refers to license student assembly for accountability (e.g., ensure all are present), uniform inspections, and conveyance of regimental information as necessary. In addition, mention of academic achievement (e.g., The Star Ceremony to acknowledge a license student's academic excellence, such as inclusion in the Dean's or Admiral List) or other noteworthy achievements may occur during afternoon formations. Afternoon formation typically occurs at 3:20 pm on Friday afternoon. Similar to morning formation, afternoon formation assembly times are tiered according to class.

4.7 Watch

Watch, one of this study's independent variables, is an activity that is integral to the professionalism of a mariner and foundational to the safety and security of ships (SUNY Maritime, 2013c). Watch refers to the STCW and USCG mandated various responsibilities and duties, collectively known as watch standing, assigned to a license student that the student must perform at a particular location for a designated period. Watch periods are typically four hours in duration and can be scheduled throughout the day or night, varied by class, as detailed in the school's regimental manual (e.g., SUNY Maritime, 2013c) and the Regimental Commandant's Standing Orders.

5. MEASUREMENT INSTRUMENT

This study operationalized presenteeism as perceived academic performance with the PPAP Scale, as detailed below. The PPAP Scale was developed by the researcher because other presenteeism instruments did not support this study's aim to avoid health-related elements. Extant presenteeism instruments were developed to measure lost productivity among workers who attend work despite not feeling well. An exception, discussed further below, is Matsushita et al.'s (2011) Presenteeism Scale for Students (PSS). However, the PSS relies on health-related issues to operationalize presenteeism.

Presenteeism instruments' scoring protocols reflect one of two perspectives (Terry & Xi, 2010). The majority of early presenteeism studies considered presenteeism a favorable state of being. Thus, presenteeism was void of any negativity associated with absenteeism. This viewpoint supported development of presenteeism instruments, such as the World Health Organization's Health & Work Productivity Questionnaire (HPQ; Kessler et al., 2004; Kessler et al., 2003) and the Stanford Presenteeism Scale (SPS; Koopman et al., 2002), using higher presenteeism scores to indicate less productivity loss. Another school of thought considers presenteeism an undesirable state of being, which has resulted in development of instruments, such as the Work Limitations Questionnaire (WLQ; Lerner et al., 2001), with high scores equating to more productivity loss. This prevailing perspective has developed into the dominant presenteeism research paradigm (Johns, 2012; Terry & Xi, 2010), and the PPAP Scale, the presenteeism instrument developed by the researcher for this study, has scoring protocol aligning with that viewpoint. Specifically, for this study, high presenteeism scores indicated students' perceived lower academic performance.

Regardless of the viewpoint influencing their scoring algorithms, existing presenteeism instruments use health-related elements to operationalize the concept. Furthermore, most presenteeism instruments are specific to a health issue. For example, the Endicott Work Productivity Scale (EWPS; Endicott & Nee, 1997) is designed for presenteeism and depression studies, and the Health and Work Questionnaire (HWQ; Shikiar, Halpern, Rentz, & Khan, 2004) measures presenteeism's association with smokers' health. In contrast, the scholarly community has accepted few presenteeism instruments, such as the Work Limitations Questionnaire (WLQ; Lerner et al., 2001), which was recommended by a panel of experts (Loeppke et al., 2003), and the Stanford Presenteeism Scale (SPS; Koopman et al., 2002), as appropriate for general populations and a variety of health conditions.

The presenteeism instrument health-related perspective has extended to a recent groundbreaking research paradigm in which the concept of presenteeism was applied to self-reported (perceived) academic performance. To facilitate investigation of students' presenteeism measured as students' perceived academic performance, Matsushita et al. (2011) developed the Presenteeism Scale for Students (PSS) by making changes to an existing measurement. The existing presenteeism instrument was a version of the 13-item Stanford Presenteeism Scale (SPS; Koopman et al., 2002) that had been amended for studying presenteeism among Japanese workers (Yamashita & Arakida, 2008). The adaptation was not extensive. The word *work* was replaced with the word *academic* and several health issues deemed by the PSS developers as applicable to students were added to the existing health condition list (Matsushita et al., 2011). Although the PSS was adapted for a student population and was developed to capture presenteeism measured as students' perceived academic performance, the instrument was not

appropriate for this study because the PSS's measurement of student presenteeism relies on health-related issues.

5. 1 The PPAP Scale

This study, which avoided health-related elements, measured presenteeism as an abstract concept defined as students' perceived academic performance by aggregate analysis of responses to five questions associated with student behavior, collectively referred to as the PPAP Scale. Each of the five student behaviors is (a) well-documented in the literature as a significant contributor to student academic performance as detailed below and (b) among behaviors that students can control (Dollinger, Matyja, & Huber, 2008; Gump, 2005). Study results have suggested a positive association between higher levels of students' perceived control and better academic achievement (Perry, Hladkyj, Pekrun, & Pelletier, 2001; Stipek & Weisz, 1981; You, Hong, & Ho, 2011).

- **Pay attention in class:** Also referred to as concentration, paying attention in class is considered an integral component of student engagement (Appleton, Christenson, & Furlong, 2008; Marks, 2000; Young, Robinson, & Alberts, 2009). Extant literature (Fredricks, Blumenfeld, & Paris, 2004; Klem & Connell, 2004; Reyes, Brackett, Rivers, White, & Salovey, 2012; Willingham, Pollack, & Lewis, 2002) has consistently shown that high levels of student engagement are associated with academic achievement. Paying attention in class has been included in scholars' (e.g., Fredricks et al., 2004; Furlong et al., 2003; Jimerson, Campos, & Greif, 2003; Reyes et al., 2012) descriptions of engaged students.
- **Participate in class discussions:** Similar to paying attention in class, participating in class discussions is an important component of student engagement (Appleton et al.,

2008), which, as previously mentioned, is strongly associated with academic achievement (Fredricks et al., 2004; Klem & Connell, 2004; Reyes et al., 2012; Willingham et al., 2002). Voelkl (1995) opined that class participation has a critical and substantial influence on a student's academic achievement. Scholars (Fredricks et al., 2004; Furlong et al., 2003; Jimerson et al., 2003; Reyes et al., 2012) have described engaged students as those who participate in class discussions. Class participation may also contribute to development of skills that support academic performance. For example, during the semester that followed their study of class participation among over 160 college students, McCleary et al. (2011) conducted exam and critical thinking testing assessments among those that had participated in the study. The results showed a significant positive association between the amount of time a student participated in class discussions and two indicators of academic performance, namely, an increased level of critical thinking and higher exam scores (McCleary et al., 2011).

- **Attend classes:** Significance levels indicating the positive association of class attendance with academic achievement have varied. For example, Dollinger et al. (2008) studied factors supporting academic achievement, i.e., factors students can control and factors students do not control, such as personality type. Although class attendance, classified in the study as a factor students can control, was a contributing factor, statistical analyses revealed that factors students do not control had more influence on their academic achievement. Dollinger et al.'s (2008) findings align with Park and Kerr's (1990) results that showed a student's intelligence, measured with ACT scores and GPA, were more significant indicators of academic achievement than class attendance. A study investigating attendance policy enforcement showed a correlation between class

attendance and academic achievement; however, the type of attendance policy (e.g., punitive policy or one offering extra credit) and how strictly the policy was enforced were significant contributing factors (Marburger, 2006). Having evaluated over 550 students' data collected during five 14-week semesters, Hammen and Kelland (1994) concluded that class attendance was not a decisive determining factor of academic achievement. However, their study results showed a decrease of two exam score points for each absence, a statistically insignificant difference but a difference nonetheless. Buckles and McMahon's (1971) investigation of class attendance and class lectures yielded no statistical difference in academic achievement attributable to class attendance. In contrast, Gatherer and Manning's (1998) study of lectures and class attendance suggested that students with higher levels of attendance also performed better academically. Stating that the positive association between class attendance and better grades was "so strong as to suggest... dramatic improvements in average grades" (p. 289), Credé, Roch, & Kieszczynka (2010) concluded class attendance better predicted academic performance than studying skills, time spent studying, or SAT scores. Despite a lack of consensus among the scholarly community, there has been general agreement among scholars that class attendance is positively correlated, albeit in varying degrees, with academic achievement (Anikeeff, 1954; Arulampalam, Naylor, & Smith, 2012; Credé et al., 2010; Grave, 2011; Gump, 2005; Obeidat, Bashir, & Abu Jadayil, 2012; Park & Kerr, 1990; Roby, 2004; Romer, 1993).

- **Arrive on time for classes:** Arriving on time for classes, the opposite of which is synonymous with arriving late, not showing up on time, lateness, and tardiness (Bataneh, 2014; Nakpodia & Dafiaghor, 2011), was selected for inclusion in the PPAP Scale

because there is consensus among scholars (Bataineh, 2014; Gottfried, 2014; Nakpodia & Dafiaghor, 2011; Seidman, 2005) and practitioners (Carnegie Mellon University, n.d.; Snyder, 2011) that a student's tardiness adversely impacts academic performance.

Seidman (2005) described arriving late to class and other disruptive student behaviors as significant "learning inhibitors" (p. 42). Tardy students are challenged to make sense of a discussion in progress, miss information already offered to the rest of the class, and create disruption to the learning environment (Bataineh, 2014; Gottfried, 2014; Nakpodia & Dafiaghor, 2011). In addition to reducing learning time, according to Nakpodia and Dafiaghor (2011), tardiness disrupts the learning environment in the classroom, which impacts the tardy student, the instructor, and other students. Gottfried's (2014) study results agreed. Having conducted analyses of the National Center for Education Statistics' (NCES) large-scale longitudinal nationally representative dataset of schools, teachers, and students, Gottfried (2014) showed that a student's tardiness resulted in disruption of the learning environment, diminished learning outcomes, and lower academic performance.

- **Take notes during classes:** Note-taking is foundational to student performance (Di Vesta & Gray, 1972; Haghverdi, Biria, & Karimi, 2010; Makany, Kemp, & Dror, 2009; Mueller & Oppenheimer, 2014; Van Meter, Yokoi, & Pressley, 1994). Extant literature has shown that students who take notes have increased short- and long-term recall (Fisher & Harris, 1973), are more likely to identify important lecture information (Steimle, Brdiczka, & Mühlhäuser, 2009), achieve higher assessment scores (Boyle, 2011), and develop better cognitive learning processes (Mayer, 2008; Piolat, Olive, & Kellogg, 2005). Furthermore, Van Meter et al.'s (1994) multi-phased qualitative study, which

involved 252 undergraduate students separated into numerous focus groups, revealed common perceptions among the participants about the benefits of note-taking. The students believed taking notes during class (a) improved their understanding of the material, (b) facilitated identification of key information during the lecture, (c) supplemented their other learning strategies, and (d) supported their academic performance (Van Meter et al., 1994). These perceptions underpinned the students' note-taking efforts. Ryan (2001) argued that students' perceptions have deeper implications. Following qualitative study of 84 college students' approaches to lecture learning, Ryan (2001) opined that students' perceptions about the value of taking notes during class, despite various note-taking strategies, influenced the students' behavior and attention level during the class as well as their overall study behavior after the class ended.

Other scholars agree with Ryan's (2001) assertion. Research (Critcher & Dunning, 2009; Dart et al., 2000; Ehrlinger & Dunning, 2003; Greene, Miller, Crowson, Duke, & Akey, 2004; Larrick, Burson, & Soll, 2007) has shown that students' perceptions make a difference in their levels of engagement, overall effort, and in the degree of confidence they feel about their strategies to achieve successful performance. Entwistle and Waterson's (1988) article detailing their comparison of two approaches to learning inventories included discussion about the significance of student perceptions' influence on the learning environment. The researchers opined that any initiatives to modify a student's study strategies would lack effectiveness unless the student perceived the change as having value within the context of the learning environment. Having conducted a study to explore associations between achievement goals and self-efficacy

on academic performance, Fenollar, Román, and Cuestas (2007) opined that study strategies were a significant mediator impacting academic achievement.

Richardson, Abraham, and Bond's (2012) extensive review of academic performance research spanning 13 years confirmed other reviewer's (e.g., Robbins et al., 2004) conclusions that key influencers of academic performance include student behaviors, such as learning strategies, degree of effort, and a student's perceptions of their academic capabilities. Although self-perception may not always reflect reality (Dunning, Heath, & Suls, 2004; Zell & Krizan, 2014), Baartman and Ruijs (2011) opined that over-estimating one's abilities supports one's efforts to "tackle complex tasks" (p. 385). Scholars (Carbonaro, 2005; Lee, 2014; Ramsden, 1979) have discussed the strong relationship between levels of student effort and learning approaches. Results from Lizzio, Wilson and Simons' (2002) analyses of responses from 646 college students showed that student perception was positively correlated with development of learning approaches, satisfaction with the learning environment, and academic achievement.

Katiliūtė (2010) studied over 3,900 college students to investigate associations between high, medium, and low student achievers' perceptions of quality of studies (i.e., evaluation of teachers, course satisfaction, study environment and facilities) and the students' academic achievement. Study results suggested a significant correlation between student perceptions and their academic performance (Katiliūtė, 2010). Mayya and Roff's (2004) investigated high and low academic achieving students' perceptions. Results gleaned from analyses of over 500 college student participants showed strong positive associations between the high achieving students' perceptions and their learning approaches, including their behaviors and attitudes toward learning and studying (Mayya & Roff, 2004). Thus, students' perception is an important driver of students' attitudes and behaviors, including those associated with impacting academic

performance (Ames & Archer, 1988; Lizzio et al., 2002; Ramsden, 1979; Richardson et al., 2012; Robbins et al., 2004; Valentine, DuBois, & Cooper, 2004). Student perceptions and student behaviors underpin the PPAP Scale.

5. 2 The PPAP Scale's reliability and validity

Reliability and validity are key indicators of a measurement instrument's quality (Kimberlin & Winterstein, 2008). Validity refers to the instrument's relevance to its intended purpose, which may be subject to bias caused by the developer's close connection to the instrument and thorough understanding of the study's purpose. To avoid bias and demonstrate a measurement's validity, scholars (Babbie, 1998, Groves et al., 2009; Scandura & Williams, 2000) suggest instrument developers seek other opinions (e.g., reviews, focus groups, interviews). The PPAP Scale's five academic achievement-related elements, which were supported by the aforementioned literature, resulted from numerous conversations with scholars and practitioners. The PPAP Scale's validity was further demonstrated with literature supported descriptions of the elements requiring transition from concept to construct through operationalization (Scandura & Williams, 2000).

Reliability refers to the degree with which the instrument provides for assessing correlations (Kimberlin & Winterstein, 2008; Scandura & Williams, 2000). To evaluate the reliability of the scale score, Cronbach's alpha was calculated. Cronbach's alpha is a best practice approach to establishing a survey's measurement reliability (Iacobucci & Duhachek, 2003). The results showed the presenteeism score had a Cronbach's alpha of 0.90, which exceeded .70, the accepted minimum for internal consistency reliability (Iacobucci & Duhachek, 2003; Pallant, 2010; Peterson, 1994). Therefore, the PPAP Scale's alpha of .90 indicated the scale had excellent internal consistency reliability.

To further evaluate the internal consistency of the presenteeism scale score, each of the five survey questions were correlated with each other (inter-item correlations). Results of Pearson’s correlation statistical analysis (see Table 1) showed all correlations ranged from .55 to .79, indicating a strong correlation among all of the items comprising the presenteeism scale.

Table 1

Inter-Item Correlation Matrix for the PPAP Scale

	Presenteeism - Pay attention in class	Presenteeism - Participate in class discussions	Presenteeism - Attend classes	Presenteeism - Arrive on time for classes	Presenteeism - Take notes during classes
Presenteeism - Pay attention in class	1.000	.718	.607	.542	.638
Presenteeism - Participate in class discussions	.718	1.000	.671	.551	.790
Presenteeism – Attend classes	.607	.671	1.000	.650	.715
Presenteeism - Arrive on time for classes	.542	.551	.650	1.000	.653
Presenteeism - Take notes during classes	.638	.790	.715	.653	1.000

Additionally, each of the five PPAP Scale survey questions was correlated with the average of the other four questions to further evaluate the importance of each survey question to the overall construct of presenteeism (Corrected Item-Total Correlations). Pearson’s correlation analysis results ranged from .69 to .83 (see Table 2), providing additional statistical support of the presenteeism scale’s excellent internal consistency reliability.

Table 2

Corrected Inter-Item Correlation Matrix for the PPAP Scale

	Corrected Item-Total Correlation
Presenteeism - Pay attention in class	.721
Presenteeism - Participate in class discussions	.800
Presenteeism - Attend classes	.770
Presenteeism - Arrive on time for classes	.685
Presenteeism - Take notes during classes	.826

6. POPULATION

This study employed a purposive sampling technique to access its framed population, namely, license students attending a State Maritime Academy in the United States. Purposive sampling involves selection of specific groups for study to better answer the research question (McNeman, 1940), including studies designed to gather data for quantitative analysis (Polit & Beck, 2010). A total of 73 students from one State Maritime Academy, as approved by the institution’s Institutional Research & Assessment Department, were invited to participate in the study. Filtering, as discussed in the Data Analyses section of this paper, resulted in a sample of 54 license students.

6.1 Sample size power analysis

Best practice when determining a meaningful sample size includes performing a power analysis and reporting the resulting effect size (Cohen, 1992; Olejnik & Algina, 2000; Sink & Mvududu, 2010; Thompson, 1999, 2007; Zakzanis, 2001). Therefore, power calculations were performed using Power Analysis and Sample Size (PASS) software (Hintze, 2008) to statistically support this study’s final sample size of $N = 54$. All inferential analyses were conducted using two-sample t -tests. Although the group sizes varied from one t test to another, for purposes of

this power analysis, it was assumed the two group sizes were equal. The dependent variable (presenteeism score) had a range of 1.00 to 5.00 with a standard deviation of 1.06.

According to Cohen (1988), small, medium, and large effect sizes for a two-sample *t*-test are $d = .20$, $d = .50$, and $d = .80$ respectively. A sample size of 54 (27 who identified negative impact versus 27 who did not identify negative impact) achieved 80% power to detect an effect size of .77 (a large effect size) with a significance level (alpha) of .05 using a two-sided two-sample *t*-test. For example, if the population average presenteeism score was 3.0 for those who perceived a factor to have a negative impact on their academic performance and the average presenteeism score for those who did not identify the factor as having a negative impact on their performance was 3.82, this would correspond to an effect size of 0.77. This study had an 80% chance of detecting this difference at the .05 level of significance. Thus, the power analysis results supported the study's final sample size ($N = 54$) for detecting large effect sizes.

7. DATA COLLECTION

This study's data were gathered using a traditional self-administered paper-pencil questionnaire developed by the researcher. Scholars (van de Looij-Jansen & de Wilde, 2008; Ward, Clark, Zabriskie & Morris, 2014) have noted that paper-pencil questionnaires yield results similar to online surveys, ensure technology does not skew participant responses, and result in a sample that is better representative of the framed population. Guided by research best practice literature (Mann, 1994; Paasche-Orlow, Taylor, & Brancati, 2003) and stringent ethical standards, such as the Belmont Report (U.S. Department of Health and Human Services [HHS], 1979) and Collaborative Institutional Training Initiative [CITI] training (2010), the questionnaire included a section with an invitation to participate as well as informed consent information.

The data collection section of the questionnaire included (a) questions to gather demographic data; (b) the five PPAP Scale questions; (c) an open-ended question asking participants to identify any activities mandated by their academic program (a maritime education obligation) that they felt had a favorable influence on their academic productivity; (d) an open-ended question asking participants to identify any activities mandated by their academic program (a maritime education obligation) that they felt had a negative influence on their academic productivity, (e) an open-ended question asking participants how the college could help them better balance their maritime education obligations (activities mandated by their academic program) and their academic performance, and (f) an open-ended question asking participants what they thought they could do to better balance their maritime education obligations (activities mandated by their academic program) and their academic performance.

Questionnaire responses were entered into an Excel spreadsheet, which was then loaded into SPSS. Data were cleaned and rechecked as recommended by best practice (Rahm & Do, 2000; Van den Broeck, Cunningham, Eeckels, & Herbst, 2005). All statistical analyses were performed using SPSS for Windows (IBM SPSS 19.0 Professional, SPSS Inc., Chicago, IL).

8. DATA ANALYSES

A total of 73 students from one State Maritime Academy, as approved by the institution's Institutional Research & Assessment Department, were invited to participate in the study. All 73 potential participants were enrolled in non-license related classes during the spring 2014 academic semester. Having agreed to the informed consent, all 73 potential participants completed the questionnaire. Among the 73 students who were invited to participate in the study, agreed to the informed consent, and completed the questionnaire, 54 (74%) were license students. Among the 54 license students that agreed to informed consent and completed the

survey, all 54 (100%) lived on campus and were enrolled in Degree/License programs. A total of 47 (87%) were enrolled in the Marine Transportation Deck License program, six (11%) were enrolled in the Marine Engineering License program, and one (0.2%) was enrolled in the Naval Architecture License program. The gender distribution was 12 (22.2%) female and 42 (77.8%) male. With respect to student class, 16 (29.6%) were 3/C; 18 (33.3%) were 2/C; and 20 (37.0%) were 1/C.

Presenteeism's score was derived by computing the average of five Likert-type survey questions collectively referred to as the PPAP Scale, which was embedded in the questionnaire. The average (and standard deviation) presenteeism score was 2.47 (1.06) and the range was 1.00 to 5.00 measured on a continuous measurement scale with a range from 1 = *not difficult at all* to 5 = *difficult all of the time*. Considering the midpoint on the scale is 3.0, the presenteeism score was somewhat low on average. Smaller scores indicated lower presenteeism (perceived higher academic performance); larger scores indicated higher presenteeism (perceived lower academic performance).

The questionnaire included two open-ended questions regarding students' maritime education obligations, which this study defined as activities mandated by the student's academic program, to facilitate identification of favorable and negative maritime education-related factors that the participants felt influenced their academic performance. One question asked respondents to list maritime education obligations that they felt favorably influenced their academic performance. The other open-ended question asked respondents to list maritime education obligations that they felt negatively influenced their academic performance. The researcher coded participant responses. Nine favorable and eight negative factors were identified.

Only 24 of the 54 study participants answered the question about favorable factors. All 54 study participants answered the question about negative factors. The most commonly identified factors having a favorable influence on academic performance were (a) cruise ($n = 9$, 37.5%) and (b) license/maritime instruction ($n = 12$, 50%). The most commonly identified factors having a negative influence on academic performance were (a) mandatory regimental activities ($n = 23$, 42.6%); (b) taps ($n = 11$, 20.4%); (c) morning/afternoon formations ($n = 13$, 24.1%), and (d) watch ($n = 16$, 29.6%). Thus, two favorable and four negative factors were determined to have a sufficient number of participants in each group to support statistical analysis. Those six factors were the basis for the study's six research questions and corresponding null (H_0) and alternative (H_a) hypotheses.

8.1 Two factors identified as having a favorable impact on academic performance (hypotheses 1 and 2)

Of the 54 participants, only 24 (44%) responded to the survey question asking participants to list any activities mandated by their academic program that they felt favorably influenced their academic performance. Based on the 24 license students' responses, nine factors were identified. Among those 24 license students and nine factors, only two factors, cruise and license/maritime instruction as expressed in research questions 1 and 2, had a sufficient number of students in each group for purposes of comparison. Two-sample t -tests were performed on those two factors to determine if there were differences in the average presenteeism score between participants who identified the factor as having a favorable impact on their academic performance compared to those who did not identify the factor as having a favorable impact on their academic performance.

8.1.1 Hypothesis 1 (cruise)

Hypothesis 1 explored what differences are represented by the level of presenteeism between license students who did and did not identify cruise as favorably impacting their academic performance. A two-sample t -test was conducted to determine if there was a difference in the average presenteeism score between the two groups, yes = *those who identified the factor*; no = *those who did not identify the factor*. Contributing to testing two-sample t -test assumptions, a Levene's test was conducted, the results of which showed no evidence to suggest the homogeneity of variances assumption was violated. The histogram of presenteeism scores gave no evidence of outliers or a non-normal distribution. The assumption that the observations were independent of each other was satisfied because all license student participants completed the survey only once. Therefore, the assumptions for the two-sample t -test were assumed satisfied.

Figure 1 is an error bar chart which shows the average and 95% confidence interval for the average presenteeism score, separately for those who did and did not report cruise as having a favorable impact on their academic performance. The figure shows very little difference between the two groups.

Tables 3 and 4 show the results of the two-sample t -test. There was not a statistically significant difference in the average presenteeism score between the two groups, $t(22) = .51$; $p = .62$. Because the p value was greater than .05, the null hypothesis was not rejected and it was concluded that there is no evidence to suggest the level of presenteeism is different between those who do and those who do not report cruise as having a favorable impact on their academic performance.

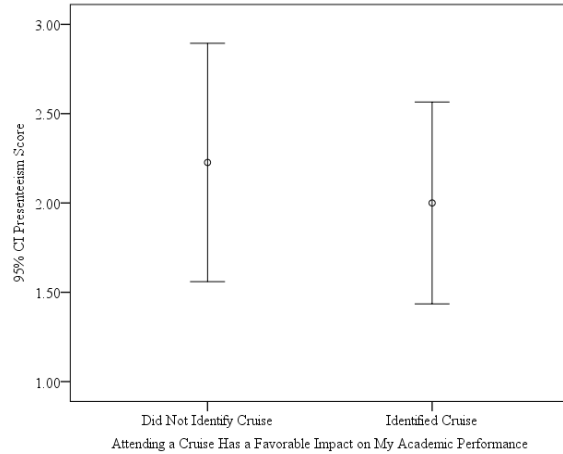


Figure 1. Error bar chart of presenteeism scores by favorability of cruise on academic performance

Table 3

Descriptive Statistics for the Presenteeism Score by Favorability of Cruise on Academic Performance

	<i>n</i> = 24	Std.			
		Mean	Deviation	Minimum	Maximum
Did not identify cruise	15	2.23	1.20	1.00	5.00
Identified cruise	9	2.00	.73	1.20	3.00

Table 4

Two-Sample t-test to compare the Average Presenteeism Score by Favorability of Cruise on Academic Performance

	<i>t</i> -test for Equality of Means		
	<i>t</i>	<i>df</i>	<i>p</i>
Presenteeism	.51	22	.62

8.1.2 Hypothesis 2 (license/maritime instruction)

Hypothesis 2 addressed what differences are represented by the level of presenteeism between license students who did and did not identify license/maritime instruction as having a favorable impact on their academic performance. A two-sample *t*-test was conducted to determine if there was a difference in the average presenteeism score between the two groups, *yes = those who identified the factor; no = those who did not identify the factor*. Assumptions for the two-sample *t*-test were tested and verified as previously discussed. Figure 2 shows very little difference between the two groups.

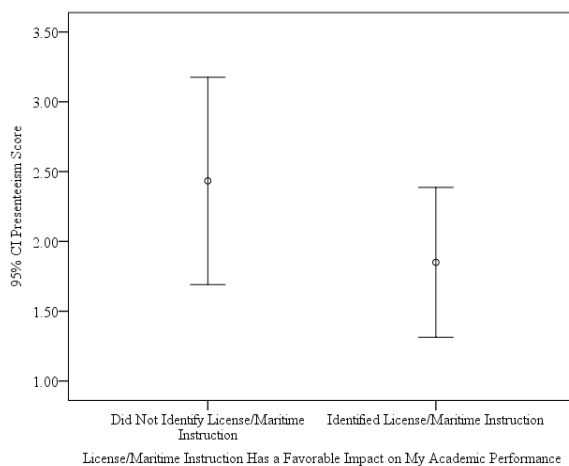


Figure 2. Error bar chart of presenteeism scores by favorability of license/maritime instruction on academic performance

Tables 5 and 6 show there was not a statistically significant difference in the average presenteeism score between the two groups, $t(22) = 1.40$; $p = .18$. It was concluded that there is no evidence to suggest the level of presenteeism is different between those who do and do not report license/maritime instruction as having a favorable impact on their academic performance. Therefore, the null hypothesis was not rejected.

Table 5

Descriptive Statistics for the Presenteeism Score by Favorability of License/Maritime Instruction on Academic Performance

	<i>n</i> = 24	Std.			
		Mean	Deviation	Minimum	Maximum
Did not identify license/maritime instruction	12	2.43	1.17	1.00	5.00
Identified license/maritime instruction	12	1.85	.84	1.00	3.60

Table 6

Two-Sample t-test to compare the Average Presenteeism Score by Favorability of License/Maritime Instruction on Academic Performance

	<i>t</i> -test for Equality of Means		
	<i>t</i>	<i>df</i>	<i>p</i>
Presenteeism	1.40	22	.18

8.2 Four factors identified as having a negative impact on academic performance (hypotheses 3, 4, 5, and 6)

In comparison to 24 of the 54 participants (44%) identifying favorable factors impacting their academic performance, all 54 participants (100%) identified negative factors in response to the survey question asking respondents to list any activities mandated by their academic program that they felt negatively influenced their academic performance. Although eight factors were identified as having a negative impact on academic performance, only four factors had a sufficient number of license students in each group for purposes of comparison: (a) mandatory regimental activities; (b) taps; (c) morning or afternoon formations; and (d) watch, as expressed in the study’s research questions 3, 4, 5, and 6. Two-sample *t*-tests were performed on those four factors to determine if there were differences in the average presenteeism score between those

who identified the factor as having a negative impact on their academic performance compared to those who did not identify the factor as having a favorable impact on their academic performance.

8.2.1 Hypothesis 3 (mandatory regimental activities)

Hypothesis 3 investigated what differences are represented by the level of presenteeism between license students who did or who did not report mandatory regimental activities as having a negative impact on their academic performance. A two-sample *t*-test was conducted to determine if there was a difference in the average presenteeism score between the two groups. The assumptions for the two-sample *t*-test were tested and verified as previously discussed. Figure 3 shows very little difference between the two groups.

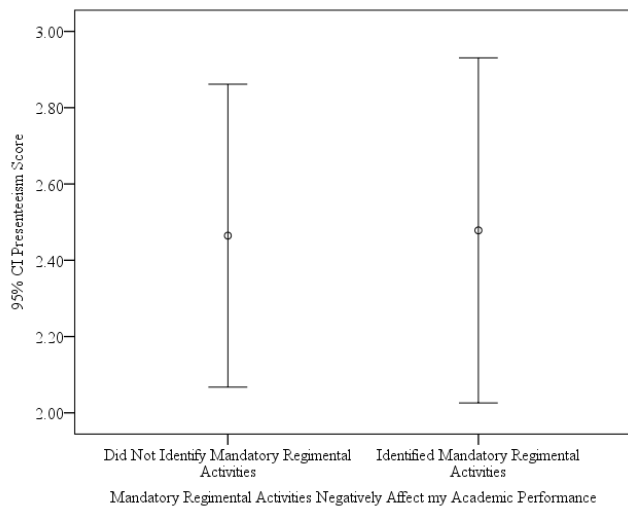


Figure 3. Error bar chart of presenteeism scores by negativity of mandatory regimental activities on academic performance

Tables 7 and 8 show there was not a statistically significant difference in the average presenteeism score between the two groups, $t(52) = -.05$; $p = .96$. It was concluded that there is

no evidence to suggest the level of presenteeism is different between those who do and do not identify mandatory regimental activities as having a negative impact on their academic achievement.

Table 7

Descriptive Statistics for the Presenteeism Score by Negativity of Mandatory Regimental Activities on Academic Performance

	N = 54	Std.			
		Mean	Deviation	Minimum	Maximum
Did not identify mandatory regimental activities	31	2.46	1.08	1.00	4.00
Identified mandatory regimental activities	23	2.48	1.05	1.00	5.00

Table 8

Two-Sample t-test to compare the Average Presenteeism Score by Negativity of Mandatory Regimental Activities on Academic Performance

	<i>t</i> -test for Equality of Means		
	<i>t</i>	<i>df</i>	<i>p</i>
Presenteeism	-.05	52	.96

8.2.2 Hypothesis 4 (taps)

Hypothesis 4 explored what differences are represented by the level of presenteeism between license students who did or did not report taps as negatively impacting their academic performance. A two-sample *t*-test was conducted to determine if there was a difference in the average presenteeism score between the two groups. Assumptions for the two-sample *t*-test were

tested and verified as previously discussed. Figure 4 shows very little difference between the two groups.

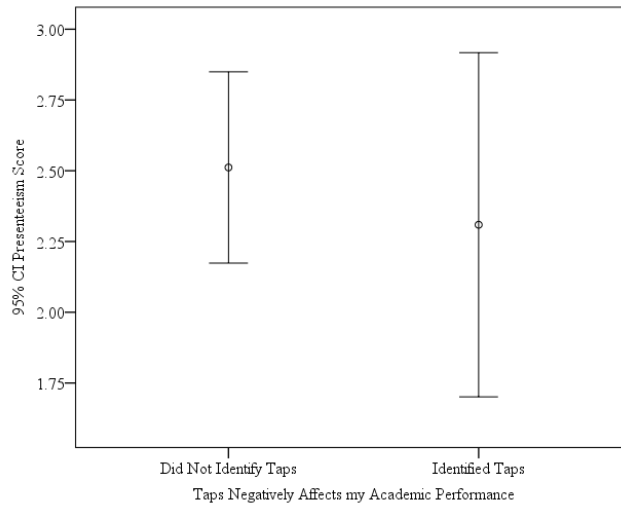


Figure 4. Error bar chart of presenteeism scores by negativity of taps on academic performance

Tables 9 and 10 show there was not a statistically significant difference in the average presenteeism score between the two groups, $t(52) = .56$; $p = .58$. It was concluded that there is no evidence to suggest the level of presenteeism is different between those who do and do not report taps as having a negative impact on their academic performance. The null hypothesis was not rejected.

Table 9

Descriptive Statistics for the Presenteeism Score by Negativity of Taps on Academic Performance

	N = 54	Std.			
		Mean	Deviation	Minimum	Maximum
Did not identify taps	43	2.51	1.10	1.00	5.00
Identified taps	11	2.31	.90	1.20	3.80

Table 10

Two-Sample t-test to compare the Average Presenteeism Score by Negativity of Taps on Academic Performance

	<i>t</i> -test for Equality of Means		
	<i>t</i>	<i>df</i>	<i>p</i>
Presenteeism	.56	52	.58

8.2.3 Hypothesis 5 (morning or afternoon formations)

Hypothesis 5 addressed what differences are represented by the level of presenteeism between license students who did or did not report morning or afternoon formations as having a negative impact on their academic performance. A two-sample *t*-test was conducted to determine if there was a difference in the average presenteeism score between the two groups. The assumptions for the two-sample *t*-test were tested and verified as previously discussed. Figure 5 shows very little difference between the two groups.

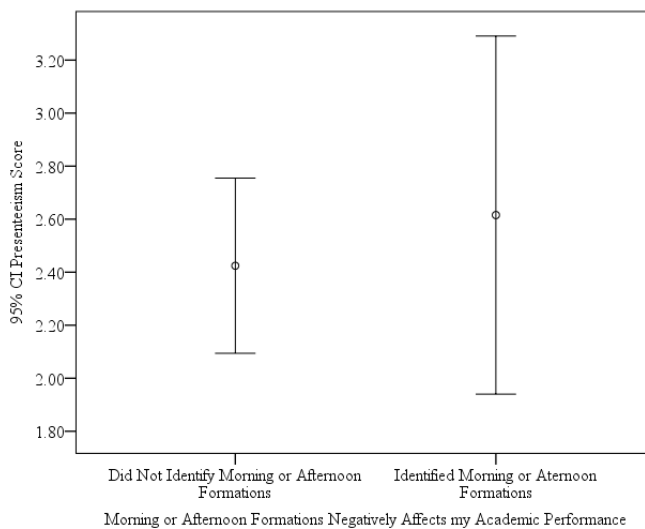


Figure 5. Error bar chart of presenteeism scores by negativity of morning or afternoon formations on academic performance

Tables 11 and 12 show there was not a statistically significant difference in the average presenteeism score between the two groups, $t(52) = -.56$; $p = .58$. It was concluded that there is no evidence to suggest the level of presenteeism is different between those who do and do not report morning or afternoon formations as having a negative impact on their academic performance. Therefore, the null hypothesis was not rejected.

Table 11

Descriptive Statistics for the Presenteeism Score by Negativity of Morning or Afternoon Formations on Academic Performance

	N = 54	Std.			
		Mean	Deviation	Minimum	Maximum
Did not identify morning or afternoon formations	41	2.42	1.05	1.00	4.00
Identified morning or afternoon formations	13	2.62	1.12	1.20	5.00

Table 12

Two-Sample t-test to compare the Average Presenteeism Score by Negativity of Morning or Afternoon Formations on Academic Performance

	<i>t</i> -test for Equality of Means		
	<i>t</i>	<i>df</i>	<i>p</i>
Presenteeism	-.56	52	.58

8.2.4 Hypothesis 6 (watch)

Hypothesis 6 investigated what differences are represented by the level of presenteeism between license students who did or did not report watch as negatively impacting their academic performance. A two-sample *t*-test was conducted to determine if there was a difference in the

average presenteeism score between the two groups. The assumptions for the two-sample *t*-test were tested and verified as previously discussed. Figure 6 shows very little difference between the two groups.

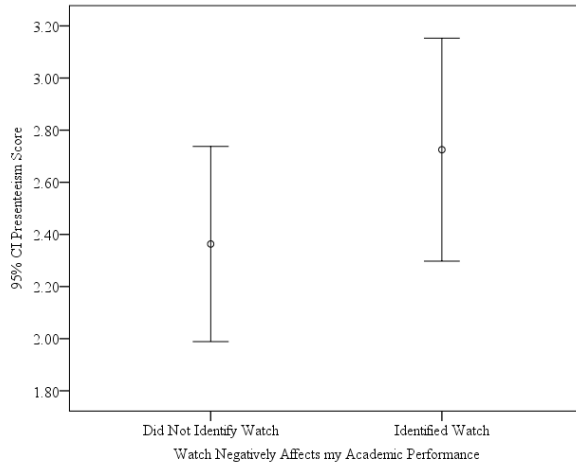


Figure 6. Error bar chart of presenteeism scores by negativity of watch on academic performance

Tables 13 and 14 show there was not a statistically significant difference in the average presenteeism score between the two groups, $t(52) = -1.15$; $p = .25$. It was concluded that there is no evidence to suggest the level of presenteeism is different between those who do and those who do not report watch as having a negative impact on their academic performance.

Table 13

Descriptive Statistics for the Presenteeism Score by Negativity of Watch on Academic Performance

	<i>N</i> = 54		Std.		
	Mean	Deviation	Minimum	Maximum	
Did not identify watch	38	2.36	1.14	1.00	5.00
Identified watch	16	2.73	.80	1.20	4.00

Table 14

Two-Sample t-test to compare the Average Presenteeism Score by Negativity of Watch on Academic Performance

	<i>t</i> -test for Equality of Means		
	<i>t</i>	<i>df</i>	<i>p</i>
Presenteeism	-1.15	52	.25

9. SUMMARY OF RESULTS

This study employed a cross-sectional, non-experimental, paper-pencil survey, comparative quantitative research design to investigate presenteeism, defined as a concept associated with students’ perceived academic performance, and factors specific to maritime education and do so with an instrument comprised of academic achievement-related elements to operationalize presenteeism (i.e., the instrument developed for this study, namely, the PPAP scale). This study found no statistical evidence to suggest the level of presenteeism, measured with the PPAP Scale, among the study’s sample of license students is associated with factors perceived to favorably or negatively impact academic performance. Table 15 summarizes results of this study.

Table 15

Summary of Hypotheses Test Results

Null Hypothesis	Determination
H ₀₁	Null hypothesis 1 is not rejected. There is no statistically significant difference in the level of presenteeism between those who do and those who do not report cruise as having a favorable impact on their academic performance.
H ₀₂	Null hypothesis 2 is not rejected. There is no statistically significant difference in the level of presenteeism

between those who do and those who do not report license/maritime instruction as having a favorable impact on their academic performance.

- H₀₃ Null hypothesis 3 is not rejected.
There is no statistically significant difference in the level of presenteeism between those who do and those who do not report mandatory regimental activities as having a negative impact on their academic performance.
- H₀₄ Null hypothesis 4 is not rejected.
There is no statistically significant difference in the level of presenteeism between those who do and those who do not report taps as having a negative impact on their academic performance.
- H₀₅ Null hypothesis 5 is not rejected.
There is no statistically significant difference in the level of presenteeism between those who do and those who do not report morning or afternoon formations as having a negative impact on their academic performance.
- H₀₆ Null hypothesis 6 is not rejected.
There is no statistically significant difference in the level of presenteeism between those who do and those who do not report watch as having a negative impact on their academic performance.
-

10. DISCUSSION

This study added to limited extant maritime education and presenteeism literature and filled gaps in the literature. This study was the first to operationalize presenteeism with the PPAP Scale and the first to investigate presenteeism, defined as students' perceived academic performance, among license students. Statistical analyses yielded results suggesting no association between the level of presenteeism, measured with the PPAP Scale, among the study's sample of license students is associated with factors perceived to favorably or negatively impact academic performance. Factors investigated in this study were reported by its respondents, in numbers supporting statistical analyses, as favorably (i.e., cruise and license/maritime instruction) or negatively (i.e., mandatory regimental activity, taps, morning or afternoon formations, and watch) impacting their academic performance.

Additional insight can be gained from students' comments in response to two open ended questions included in the questionnaire. One question asked participants how the college could help them better balance their maritime education obligations, defined as activities mandated by the student's academic program, and their academic performance. Comments evidenced a consistent theme among the respondents that they perceived an imposed imbalance between time they were able to allocate to academics compared to time needed to fulfill their regimental responsibilities and obligations. Comments included: (a) "aim the college more towards academics and less about fulfilling regiment obligations;" (b) "regiment should be more relaxed; it's not as important as education;" and (c) "let us go to sleep before 10:30 pm;" (d) "spread out people evenly to stand watch;" (e) longer library hours;" (f) "less stupid rules;" (g) "reduce overlaps between class schedule and watch schedules;" (h) cancel the morning formations that causes lack of sleep;" (i) "stop afternoon formations... have dress inspection in the morning;" and (j) "give us more time in advance to prepare our schedules... give... watch assignments for the month rather than the day or weekend." One student suggested, "Get rid of taps at 11 pm so cadets can study through that time or go to bed early." Another comment offered further insight, "We are not in the Navy... remove the regimental system so that student can be more effective in their classes. Nobody is here for the regiment. They're all here for the education." Not all students agreed. One student commented, "Decrease academic requirements... the license comes first."

The other open-ended question asked participants what they thought they could do to better balance their maritime education obligations and their academic performance. Again, maritime education obligation was defined as activities mandated by the student's academic program. One student's comment, which articulated that the student felt he or she could do

“nothing because it’s mandatory,” suggests the strong influence students’ perceptions have on their efforts. Other comments included (a) “Go to bed earlier;” (b) “Get more sleep at night;” (c) “do more studying;” (d) “more sleep;” (e) “better time management;” and (f) “not wait until the last minute.”

Lack of sleep was mentioned quite a few times in response to both questions. This perception is not surprising considering over 66% of respondents reported going to sleep after midnight, a time that is directly impacted by taps, and license students must be awake in time for morning formation. Pilcher and Walters (1997) discussed the adverse effects of student sleep deprivation, including a student’s mood, ability to pay attention in class, and difficulty with successful completion of complex tasks. The current study did not include sleep deprivation among its considerations; however, the aforementioned additional insight gained from the two open-ended questions suggests that the study’s license student respondents perceived lack of opportunities to sleep as a factor adversely impacting a needed balance between academics and regimental obligations. Three of the four factors this study investigated because respondents reported those factors as negatively affecting their academic performance (i.e., morning or afternoon formations, taps, and watch) have a close association with license students’ lack of sleep opportunities, which provides further evidence of this perception among those who participated in the study.

11. LIMITATIONS

Several limitations resulted from this study’s purpose to investigate a population of license students attending State Maritime Academies in the United States. Reaching potential participants from the six academies was beyond the resources of the researcher. Therefore, the final sample consisted of license students attending non-license classes during the spring 2014

semester at one of the six State Maritime Academies. This may have influenced those who participated in this study even though anonymity and confidentiality were assured and respondents participated in the study after agreeing to informed consent. To mitigate this limitation, the researcher, who is Collaborative Institutional Training Initiative (CITI) certified, conducted the study in compliance with strict ethical standards as discussed previously. In addition, the study's purpose and design were submitted to and received approval from the institution's Institutional Research and Assessment (IRA) Department.

There may be limitations associated with the accuracy of self-reported data (Gonyea, 2005; Kuncel, Credé, & Thomas, 2005). However, studies involving students (e.g., Anaya, 1999; Bruning, Dempsey, Kauffman, Zumbrunn, & McKim, 2013; DeShields, Ali, & Kaynak, 2005; Mikami et al., 2013; Perry et al., 2001) and studies measuring presenteeism in the workplace (Kessler et al., 2004; Mills, Kessler, Cooper, & Sullivan, 2007; Yen, Edington, & Witting, 1991) have reported self-reported data aligned with objective measures. The use of self-reported data was integral to this study, which relied heavily on respondents' reporting of their perceptions. Research (e.g., Critcher & Dunning, 2009; Dart et al., 2000; Ehrlinger & Dunning, 2003; Entwistle & Waterson, 1988; Greene et al., 2004; Larrick et al., 2007; Ryan, 2001) has shown that a student's perception significantly influences their behaviors associated with academic performance. Further, Ramsden (1991), opined that students' perceptions, criticized by some as too subjective to lend value to objective measures of academic achievement, provide an aggregate subjectivity supporting relevant results.

Additionally, instruments measuring self-reported data may have limitations associated with respondent recall (Hassan, 2006). To minimize that limitation, the PPAP Scale used a two-week recall period. Presenteeism measurement instrument scholars (e.g., Lerner et al., 2001;

Stewart, Ricci, & Leotta, 2004; Stewart, Ricci, Leotta, & Chee, 2001) have asserted that a two-week recall period significantly improves the accuracy of participant self-report responses.

Because this is the first study to use the PPAP Scale, operationalizing the abstract concept of students' perceived academic performance using academic performance-related behaviors presented limitations that the lack of previous research utilizing the new instrument or measuring presenteeism as a construct representing students' perceived academic performance cannot offset. However, as discussed previously, statistical analysis of the PPAP Scale evidenced excellent internal reliability and each element comprising the scale was well-supported with scholarly literature. Additionally, this study's results were limited by the use of two open-ended questions to gather data from which the independent variables were selected. It is possible that some respondents did not readily think of a factor they felt favorably or negatively impacted their academic performance. Results may have varied if a list of factors from which the respondents could have selected had been offered.

The aforementioned limitations resulted from the study's approach to investigating its research questions. Despite inherent limitations, the research design supported the study's purpose. Future research can be guided by the study's inherent limitations as well as its results.

12. SUGGESTIONS FOR FUTURE RESEARCH

This study is the first to operationalize student presenteeism with the PPAP Scale, an instrument comprised of five student behaviors that support academic performance. This new approach provides many opportunities for future research to fill gaps in presenteeism and maritime education literature. In addition to investigating other license student populations, which could be investigated in an array of groups (e.g., age, gender, class, major, GPA), researchers can investigate general student populations, including studies comparing license

students to non-license students. The PPAP Scale as a measure of students' perceived academic performance can extend to diverse student populations. Additional research using the PPAP Scale would further support the instrument's reliability and validity. Although the independent variables in this study were maritime education-related factors, because presenteeism was operationalized using five student behaviors that support academic performance, the PPAP Scale can be employed to investigate any student population.

Future studies may reveal other factors that students' believe negatively or favorably impact their academic performance. As an alternative, instead of the independent variable selection approach employed by this study, future researchers may opt to offer a list of negative and favorable factors. Other research opportunities include comparison of PPAP Scale score results to objective measures. Additionally, future researchers can conduct longitudinal studies to compare results over time, such as the beginning of the semester versus the end of the semester or upon entering the program versus completion of the program.

Furthermore, the new research approach employed by this study, namely, achievement-related elements to operationalize presenteeism, could complement research that has only recently extended the concept of presenteeism to students' perceived academic performance operationalizing presenteeism using health-related issues (e.g., Deroma, Leach, Leverett, 2009; Hysenbegasi, Hass, & Rowland, 2005; Matsushita et al., 2011; Mikami et al., 2013). In sum, considering the infancy of this new approach, any studies, new or replicated, will add knowledge to the scholarly body of literature.

13. CONCLUSION

The extension of the concept of presenteeism, a relatively new field of study, to studies investigating perceived academic performance loss among students is in its early stages. To fill

gaps in presenteeism and maritime education literature, this study was the first to investigate presenteeism, defined as perceived academic performance, among license students. This study was also the first to operationalize presenteeism as a concept representing students' perceived academic performance by using the PPAP Scale, which operationalized presenteeism with five student behaviors associated with supporting academic performance. This study found no statistical evidence to suggest the level of presenteeism, measured with the PPAP Scale, among the study's sample of license students is associated with factors perceived to favorably or negatively impact academic performance. The study's null hypotheses were not rejected.

Additional insight was gained from students' comments in response to two open ended questions included in the questionnaire. Comments revealed a common theme among the respondents that they perceived an imposed imbalance between time they perceived as available for allocation to academics compared to time needed to fulfill their regimental responsibilities and obligations. Comments also suggested that the study's license student respondents perceived lack of opportunities to sleep as a factor adversely impacting a needed balance between academics and regimental obligations. Further supporting this perception, three of the four factors investigated in this study were selected because respondents reported those factors as negatively affecting their academic performance (i.e., morning or afternoon formations, taps, and watch); each factor impacts the students' sleep opportunities.

This study's results contributed to limited extant presenteeism and maritime education literature and may add insight to those seeking to understand students' perceptions. The study's results may support discussions with license students. In addition, the results may help to inform maritime education administrators, policy makers, and educators to develop an environment that contributes to optimizing students' academic productivity.

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