

Four Personal Achievement Goals and Self-Reported Cheating Behavior

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Abstract

The objective of the present study was to investigate the predictive utility of the four personal achievement goals included in the 2x2 achievement goal framework with reference to self-reported cheating behavior exhibited by female first-year University students when they were attending an Ancient Greek Language and Literature class in the last year of their Secondary Education studies. Correlation analyses revealed that performance-approach, performance-avoidance, and mastery-avoidance goals were not predictive variables of self-reported cheating behavior, while mastery-approach goals were negative predictors. The findings underline the role played by mastery-approach goals in deterring cheating behavior in academic settings.

Sophocles (496-406 B.C.) was one of classical Athens' three great tragic playwrights. In his tragedy "PHILOCTETES" (94-95), which has survived up to date in its complete form, he put the following words in the mouth of young Neoptolemos, the honest son of Achilleas, during an argumentation with cunning Odysseas: "Still I prefer, my king, to fail when doing what is honorable than to be victorious in a dishonorable manner" (Sophocles, 409 B.C.). One of the central themes of this play was the conflict between the ethics of deception and fraud and the ethics of integrity and fairness.

Introduction

It seems that this value conflict continues to be in existence up to date. Callahan [1], in the book: "The Cheating Culture. Why More Americans Are Doing Wrong to Get Ahead", described in a detailed way a dishonest society in all forms of human activity, where cheating is something that everybody does, although some forms of cheating are condemned and punished, while others are ignored and unpunished, as most academic cheating does, or even encouraged. He pointed out that cheating is not a new problem but an enduring phenomenon in nearly all human societies and can be traced back in human history, as, for example, in the civil service in ancient China and in the Olympic Games in ancient Greece.

Commenting on Callahan's book [1], Houston Chronicle observed that cheating behaviors have expanded to every corner of society. So, dishonest types of behavior appear to thrive in an area of human endeavor which is the academic field [2-6].

According to Pulfrey and Butera [7] "The significant number of financial and academic frauds hitting the headlines is paralleled by high rates of cheating in schools". The issue of academic dishonesty has occupied researchers' attention and interest in several countries and the related research yield has suggested that it is a rather everlasting and worldwide phenomenon [8-18]. The present study represented an attempt to understand relations between personal achievement goals, as they are depicted in the 2x2 theoretical and conceptual achievement goal framework [19] and one type of academic dishonesty, namely cheating behavior, within an educational setting in Greece.

Brief Literature Review

Academic dishonesty

The term academic dishonesty is often used in the educational literature as synonymous with the terms academic cheating and academic misconduct [20]. The conceptual definition of academic dishonesty does not seem to be an easy task. According to Whitley and Keith-Spiegel [21], it appears to be a phenomenon that all people can recognize when they see it happen but few can give an exact definition. In the same line of reasoning, Kibler [22] has pointed out that the lack of consensus related to a conceptual definition of academic dishonesty is one major problem evident in the research reviews of the concept.

Pavela [23] has proposed a typology which, according to Whitley and Keith-Spiegel [21], is considered as one of the more widely cited definitions of academic dishonesty. Pavela's typology was a systematic classification of the types of academic dishonesty according to their common characteristics and the four types proposed were: cheating, fabrication, plagiarism, and facilitating academic dishonesty. He defined cheating as: "intentionally using or attempting to use unauthorized materials, information, or study aids in any academic exercise. The term academic exercise includes all forms of work submitted for credit or hours" (p. 78). To these four types Whitley and Keith-Spiegel [21] have added three more: misrepresentation, failure to contribute to a collaborative project, and sabotage.

Academic dishonesty has been studied empirically in relation to demographic, academic, personality, situational, and motivational characteristics. Motivational factors have mainly taken into consideration two criteria of achievement motivation, namely: academic self-efficacy and academic achievement goals [2,24].

The Achievement Goal Approach

In their review, Murdock and Anderman [5] have pointed out that most of the studies interested to understand and predict academic cheating are a-theoretical and that little effort has been made to interpret relevant research findings within an overall theoretical and conceptual framework, a state of affairs which retards the systematic theoretical progress in the academic dishonesty literature. Accordingly, they have argued that academic dishonesty could be interpreted in terms of the achievement goal approach, one of the most modern and prevalent approaches in the field of achievement motivational psychology.

The study of achievement motivation has been enriched in the course of the years by several approaches building on various constructs such as achievement motive, test anxiety, attributions, self-worth, level of aspiration, risk-taking, expectancy-value theory [25], and, more recently, by the achievement goal construct [26,27]. The theoretical basis of the achievement goal construct was grounded on the belief that students pursue different goals in educational settings and that these goals help those interested in the educational process understand students' motivation to achieve [26,28]. The essence of this construct is the concept of competence, which means that, when people are achievement motivated, they are working towards the fulfillment of their need for competence [29-32].

The conceptual evolution of the achievement goal construct has been especially interesting and it has, over the years, resulted in more and more elaborate definitions [25,33,34]. One of the most recent conceptualizations of the achievement goal construct, the 2x2 achievement goal framework, [19], has included four types of personal achievement goals, which have been distinguished on the basis of the combination of the definition dimension (the mastery-performance distinction) and the valence dimension (the approach-avoidance distinction) of the achievement goal construct. Mastery goals are focused on intrapersonal criteria of achievement, while performance goals are focused on interpersonal achievement criteria. The evaluative focus for performance or ability in approach goals is positive and potentially successful and it evokes approaching forms of behavior, while in the case of avoidance goals is negative and potentially unsuccessful and it evokes avoiding forms of behavior. As a result, four types of personal achievement goals have emerged, which are:

Mastery-approach goals, which entail an effort to approach task-based or intrapersonal competence, as, for example, in the case where a person makes an effort with the purpose of surpassing past atomic achievements.

Mastery-avoidance goals, which entail an effort to avoid task-based or intrapersonal incompetence, as, for example, when a person makes an effort in order not to do worst compared to past individual achievements.

Performance-approach goals, which entail an effort to approach interpersonal competence, as, for example, when a person engages with a task with the purpose of doing better compared to classmates.

Performance-avoidance goals, which entail an effort to avoid interpersonal incompetence, as, for example, in the case where a person is getting involved in a task with the purpose of avoiding being inferior to classmates.

One contemporary measurement tool designed to assess the four dimensional conceptualization of the achievement goal construct is the Achievement Goal Questionnaire-Revised (AGQ-R) [19], which is a

revised version of the Achievement Goal Questionnaire [35]. According to its designers, the AGQ-R items are characterized by clear conceptualization of achievement goals and a strong correspondence between the way they are conceptualized and their operationalization, prerequisites necessary for the interpretation of empirical findings and the subsequent theoretical progress. In their opinion, this new research instrument is not marked by certain problems associated with the measurement of achievement goals. Having as starting point the Achievement Goal Questionnaire and its conceptual foundation, the authors identified specific problems existing in some of its items as well as in items of other measurement instruments of achievement goals. These problems were related to: inclusion of items which collapse together the goal and the motivation underlying the goal, failure to directly assess goals as purposeful commitment guiding future behavior, inclusion of items that contrast goals, differential normative comparison emphasis regarding the two performance-based goals, exclusive focus on high levels of normative comparison regarding the performance-based goals, inclusion of items with content relevant to both performance-based and mastery-based goals, reference to differential amounts of affective content in items of mastery-based and performance-based goals. According to its designers, these problems have been attended to in the development of the AGQ-R.

Achievement goal approach and academic dishonesty

So, how these four achievement goals can help us understand and explain academic dishonesty forms of behavior? According to Anderman [36] and Anderman and Danner [6], the adoption of mastery goals minimizes the possibility of getting involved with academic cheating behaviors, because such behaviors are not instrumental to mastering or learning a task. If one's own goal is to truly acquire mastery over something, cheating is not helping towards the accomplishment of this goal and is not considered an adaptive and useful strategy to be used. On the other hand, the adoption of performance goals enhances the possibility of engaging in academic cheating behaviors, because they help a person to achieve these goals. When the goal is either to be compared positively or not to be compared negatively with others, cheating behaviors may be considered by a person an adaptive and effective strategy to be adopted maximizing the chances of attaining the goal. It may be regarded as an academic shortcut arrangement as far as mastery of a task is concerned, but, on the other hand, true mastery is not the goal anyway.

During the last years a constantly increasing research body has attempted to explain types of academic dishonesty through the view point of the achievement goal approach. Anderman and Danner [6] have noted that there are a number of studies which have examined the relations between personal achievement goals and academic cheating, and that the cheating, mostly self-reports, measures used have examined either actual cheating behaviors or what the students believed about the acceptability of cheating. With reference to the measurement of achievement goals, they have pointed out that several studies have made direct use of the achievement goal approach, while others have utilized very similar constructs, as "grade orientations" and "learning orientations".

Anderman, Griesinger, and Westerfield [37] in their research have used self-report questionnaires and they found that, in a middle school setting, early adolescents who reported cheating in a science class also described themselves as being more extrinsically and less mastery oriented than non-cheaters. A similar relationship was reported by Newstead, Franklyn-Stokes, and Armstead [38] with a sample of

British college students. Some of their empirical results indirectly suggested a relation between cheating and achievement goals. In their study, males, compared to females, reported more cheating and they were more likely to view studying as a stopgap and as a means to an end, which is rather a commitment to a performance goal. On the other hand, females were more likely than males to study in order to develop personally, which depicts rather a learning goal. Wrybeck and Whitley [39] found in their college study that respondents high in grade orientation were more likely to answer that they would behave as a cheater and accomplish did compared to those who were lower in grade orientation. Jordan [40] used survey methods to demonstrate that students who cheated had lower learning orientation scores than those who did not cheat. Conversely, cheaters scored much higher on grade orientation than did non-cheaters. Rettinger, Jordan, and Peschiera [9] found that the participants in their study, when presented with a scenario describing a student who was provided an opportunity to cheat and was described either as learning- or grade-oriented, rated protagonists described as grade-oriented as more likely to cheat than those described as learning-oriented. Using a sample of Canadian college students and a questionnaire with 21 circumstances examining beliefs and forms of behavior related to cheating, Genereux and McLeod [41] found that two of the five circumstances students rated as most likely to increase cheating were dependency of financial support on good grades and effect of course grade on long-term goals. In their study, Stephens and Gehlbach [42] found that a personal mastery goal orientation was a negative predictor of the extent to which high school students observed and engaged in several types of cheating behavior. In two studies, one within and across three achievement settings and one in an experimental setting, Van Yperen, Hamstra, and Van der Klauw [43] examined the relations between achievement goals and cheating (intentions and actual behavior). Their results revealed that individuals with performance-based goals (either approach or avoidance) had stronger intentions to cheat and actually tended to cheat more compared to individuals with mastery-based goals (either approach or avoidance). The results of a survey study carried out by Songsriwittaya et al. [13]. Have revealed that mastery goal orientation was not an influential factor on the self-reported frequency of copying behavior, while performance-approach and performance-avoidance goal orientations were major influential factors. In a correlational study conducted by Tas and Tekkaya [12] it was found that performance-approach goals and mastery goals were positive and negative predictor of students' cheating behavior respectively. In the above mentioned studies several research instruments have been used for the assessment of achievement goals.

To the researcher's knowledge very few studies have used questionnaires based on the achievement goal framework for the measurement of achievement goals. In the study conducted by Niiya, Ballantyne, North, and Crocker [44], in a controlled laboratory setting, the Achievement Goal Scale [45] was used and their results revealed that, for the female college students, performance-approach goals, performance-avoidance goals and mastery goals were not predictors of actual cheating behavior. The findings related to male students revealed that performance-avoidance goals predicted more cheating, while performance-approach goals and mastery goals marginally predicted less and more cheating respectively. In their higher-education study Pulfrey and Butera [7] have used the performance-approach measure of the Achievement Goal Questionnaire [35]. Their results indicated that performance-approach goals predicted greater condoning of cheating by Swiss students. Yang and Huang, and Chen [17] in their study have used the Achievement Goal Questionnaire-Revised (AGQ-

R) [19] for the measurement of achievement goals. Using a sample of college students, they examined the relation between achievement goals and academic dishonesty within a Chinese cultural context. Their results revealed that students who were to a lesser degree likely to engage in academic dishonesty were those adopting a greater mastery orientation. In opposition to theoretical arguments and previously mentioned research results, the study did not provide evidence for a relationship between the two performance-based goals and academic dishonesty. The same was true for the mastery-avoidance orientation.

In summary, the majority of the studies examining the relation between achievement goals and cheating seem to agree that the tendency for performance-based goals is to relate positively with cheating and for mastery-based goals to relate in a negative way [5,36,46,47]. Nevertheless, Senko et al. [46] in their review have pointed out that the relevant research is still limited and it has provided limited support for the hypothesis that performance-based goals increase cheating. There are also some inconsistent findings regarding the relation between mastery goals and cheating [36,46].

Purpose of the Study

This study was designed to examine the predictive utility of the four personal achievement goals, as depicted within the 2x2 theoretical and conceptual achievement goal framework, in relation to the frequency of self-reported cheating behavior by first-year female University students with reference to the subject of Ancient Greek Language and Literature they were taught in the last year of their Secondary Education studies.

The choice of Ancient Greek Language and Literature as the subject students should take into consideration when responding to the two self-report assessment tools was based on its high importance as far as University admission requirements were concerned. We will try to explain the rationale for this choice by giving briefly some information about the structure of the Secondary level of the Greek Educational System and the admission requirements to Higher University Education.

In the Greek Educational System, Secondary Education is divided into two levels: Gymnasium, equivalent to Middle or Junior High School, which is a compulsory three-year school for students with ages 12 to 15. When completing their studies in the Gymnasium, students can attend either the Unified Lyceum, which is an academically-oriented non-compulsory three-year Senior High School for students aged 16-18, or Vocational Training. During the first year of their studies in the Unified Lyceum, students attend general knowledge subjects, which constitute a common core for all students. During the second year, students who decide to follow Higher University Education have to choose between five disciplinary fields, one of which is: Humanities, Law and Social Sciences.

Admission to Higher University Education takes place through the system of Panhellenic Examinations, a national level examination system which is centrally coordinated by the Ministry of National Education and Religious Affairs. These examinations take place at the end of the third year of Unified Lyceum. The basic requirement for admission to Higher University Education is the achievement score on the "Certificate", which includes grades in four basic compulsory subjects and two general education subjects, all of which are examined at a national level. The general achievement score on this Certificate takes into account third year's school grades on the six subjects that are obtained through school level evaluation and grades on the same six

subjects obtained through national level examinations (30% and 70% respectively).

For students interested to follow studies in Humanities, Law and Social Sciences, as it was the case with the female students of our sample, the four compulsory basic subjects that were examined at a national level were: Ancient Greek Language and Literature, History, Modern Greek Literature, Latin. With reference to the two general education subjects examined at a nationwide level, the subject of Modern Greek Language was compulsory, and the other was a free elective by the student. The subject of Ancient Greek Language and Literature is regarded as having increased importance because it has a higher weight percentage in the final calculation of University admission units. This means that the students have to pay special attention to this subject, because the grade they will obtain through school level evaluation and national level examinations will be multiplied with a higher coefficient compared to the subject of History, which is the other subject of increased weight. So, the acquisition of a high grade in the subject of Ancient Greek Language and Literature is of vital importance to the students as far as their entrance to Higher Education is concerned. As we can realize normative comparison is a crucial prerequisite for University admission and the grade students obtain in this cognitive subject is the most important in determining the end product of the normative comparison.

Needless to say that the Greek educational system is extremely competitive and, as a result, the overwhelming majority of parents do everything they possibly can to help their children succeed. This state of affairs has led to the development of a prospering shadow education system. Students' families spend great amounts of money to pay private tutors for the purpose of helping their children to compete more effectively and to improve their standing relative to others. The situation becomes more demanding and burdensome in terms of private tutoring time and money spent in the case of students who aspire to University admission.

Another reason for focusing on a subject taught in Secondary Education was based on our thinking that the temporal distance between students' graduation from the Lyceum and their admission to Higher Education would facilitate them to give truthful responses and would minimize possible reservations and unwillingness to respond in a sincere way for the fear of being caught.

So, we thought that it would be interesting to examine the type of goals students would adopt in such a highly competitive environment and how each one of these types of goals would predict cheating behavior. The research questions we attempted to examine in this study were guided by existing achievement goal theorizing and, to some extent, by previous empirical evidence and they were the following:

Research Question 1: Would performance-approach goals be a positive predictor of self-reported cheating behavior?

Research Question 2: Would performance-avoidance goals be a positive predictor of self-reported cheating behavior?

Research Question 3: Would mastery-approach goals be a negative predictor of self-reported cheating behavior?

Research Question 4: Would mastery-avoidance goals be a negative predictor of self-reported cheating behavior?

Method

Participants

The subjects under investigation included 110 female undergraduate students in a public university department, who at the author's request participated voluntarily. Their ethnic identity was Greek and their mean age was 18.5 yr. (S.D.=0.5). The students were attending the first semester of their studies. The duration of their studies was eight semesters. The exclusive inclusion of females in our sample was dictated by numerical considerations having to do with the fact that the enrollment department traditionally attracts larger proportion of female students and we wanted to avoid an unequal gender representation in our sample.

Materials

Two self-report questionnaires were used for data collection in this research. For the assessment of achievement goals we have used the Achievement Goal Questionnaire-Revised (AGQ-R) [19], which is a 12-item questionnaire with four measures, each consisting of three items and assessing each of the four achievement goals depicted in the 2x2 achievement goal framework: mastery-approach goals (e.g., "my goal is to learn as much as possible"), mastery-avoidance goals (e.g., "my goal is to avoid learning less than it is possible to learn"), performance-approach goals (e.g., "my goal is to perform better than the other students"), performance-avoidance goals (e.g., "my goal is to avoid performing poorly compared to others").

In order to ensure content validity, the AGQ-R was translated into the Greek language by a backward translation procedure [48] which was carried out by two University Professors whose native language was Greek and who had proficient knowledge of the English language. At first, the questionnaire was translated into the Greek language by the author and then the Greek translation was back-translated into the English language by a colleague of the author. The next step was to compare the backward translation with the original questionnaire and to make any corrections considered appropriate by the two translators to the final Greek translation.

Two changes were made in the original questionnaire. One was to replace the use of present tense with the use of past tense in the wording of its items, because we wanted responses concerning achievement goals referring to the past. Another change was to modify some wordings to suit the purpose of our study; so, the wordings "class", "course", and "course material" in items 1, 2 and 11 respectively were replaced by the wording "subject of Ancient Greek Language and Literature". The questionnaire was given in the form of a 5-point Likert-type scale anchoring at 1: Strongly disagree and 5: Strongly agree. A higher score denoted a stronger endorsement of the achievement goal.

For the assessment of cheating behavior we have used a self-report cheating measure designed by Anderman, Griesinger, and Westerfield [37] that contained five items. The same, as with the AGQ-R, backward translation procedure was used for this assessment tool. Additionally, the present tense in the wording of its items was replaced by past tense. We also replaced the wording "science" by the wording "Ancient Greek Language and Literature". The students were asked to respond to items using a 5-point Likert-type scale ranging from 1: not at all true of me to 5: very true of me. A higher score meant higher levels of cheating behavior.

Procedure

The two questionnaires were administered and collected by the author at the end of a three-hour class period. The instruction given to the students was that their completion should be anonymous and their answers should have as a reference point the subject of the Ancient Greek Language and Literature which they were taught in the third last year of their Secondary Education studies in the Unified Lyceum.

Statistical Analysis

For the examination of the correlations between achievement goals and cheating practices we have used Spearman's rank correlation coefficient. Our data were obtained from five-point Likert-type scales

Variable	M	SD	Min.	Max.	Cronbach's α
Mastery-approach	4.21	0.59	3.00	5.00	0.68
Mastery-avoidance	3.95	0.79	1.00	5.00	0.78
Performance-approach	3.03	0.88	1.00	5.00	0.84
Performance-avoidance	2.94	0.95	1.00	5.00	0.88
Cheating	4.45	0.57	2.20	5.00	0.82

Table 1: Descriptive Statistics and Reliability Evidence of Scores on the Achievement Goal Measures and the Cheating Measure (N=110)

With reference to achievement goals, our results revealed that each one of them was endorsed by the students. The mean score for each one of the four AGQ-R measures was above its midpoint, with the highest related to the mastery-approach measure, being followed by the mastery-avoidance, performance-approach and performance-avoidance measures. The calculated Cronbach's alpha values obtained from the reliability analysis were all well above the acceptable level,

Variable	1	2	3	4	5
Mastery-approach					
Mastery-avoidance	0.46**				
Performance-approach	0.05	0.04			
Performance-avoidance	0.11	0.04	0.80**		
Cheating	-0.32*	0.10	-0.16	-0.12	

* $p < 0.05$ (2-tailed), ** $p < 0.01$ (2-tailed).

Table 2: Correlations between Scores on the Achievement Goal Measures and the Cheating Measure (N = 110).

The statistical analysis revealed the absence of statistically significant correlations between performance-approach goals, performance-avoidance goals, mastery-avoidance goals and cheating practices. The only negative and statistically significant correlation was between mastery-approach goals and cheating practices ($r = -0.32$, $p < 0.01$)

Another incidental interesting finding, which was not related to the research questions of this study, was the existence of rather strong and statistically significant positive correlations between performance-based goals ($r = 0.80$, $p < 0.01$) and mastery-based goals ($r = 0.46$, $p < 0.01$), which are pairs of goal measures sharing a conceptual overlap on the definition dimension of competence. The strongest link was

and Spearman's Rho was considered the most appropriate coefficient to be used for the calculation of correlations between ordinal variables.

Results

Descriptive statistics

The descriptive statistics (means, standard deviations, observed minimum and maximum values) and Cronbach's alpha values for each one of the four AGQ-R measures and the cheating measure are presented in Table 1. The acceptable cutoff value for Cronbach's α is considered to be > 0.70 [49].

with the exception of a value for the mastery-approach measure which was slightly below the acceptable level.

Correlations between Variables

The correlations between scores on the four AGQ-R measures and the cheating measure are presented in Table 2.

between performance-approach and performance-avoidance goals. On the other hand, our results did not indicate the existence of significant correlations between pairs of goal measures sharing a common valence dimension.

Discussion

In the context of this correlational study, we attempted to examine the predictive utility of the four personal achievement goals included in the 2x2 achievement goal framework with reference to self-reported cheating behavior. Our sample consisted of first-year female University students who were asked to report on their achievement goals and cheating behavior when they were attending the subject of Ancient

Greek Language and Literature in the last year of their Secondary Education studies. Only one of our hypotheses was confirmed. Mastery-approach goals, in accord with theoretical assumptions, were a negative predictor of cheating behavior.

Despite the fact that normative comparison was a vital requirement for University admission, our findings did not indicate the existence of positive correlations between cheating behavior and the two performance-based goals which entail an effort either to approach interpersonal competence or avoid interpersonal incompetence. We consider this finding encouraging, because, although the grading system encountered by the students was based on norm-referenced criteria that would eventually lead to a high-stakes assessment, they did not resort to cheating. The comparison of our research findings with those of other empirical studies which have tried to examine cheating behavior within the context of the achievement goal approach, revealed that our results were in agreement with those obtained in the study by Niiya et al. [44] who found that these two types of goals did not predict female college students' cheating. Similar to our findings were obtained in the study by Yang et al. [17]. for the male and female students of their sample who answered to the items of the AGQ-R. The use of the same assessment tool for the measurement of achievement goals across diverse ethnic and cultural contexts makes the comparison of the research findings easier and, by highlighting similarities and differences in the respondents' answers, gives information about the generalizability of the empirical findings. Nevertheless, additional research is needed for the clarification and validation of the relationship between performance-based goals and cheating behavior.

In our study we noted that mastery-approach goals were a significant negative predictor of cheating behavior and that, in contradiction to theoretical tenets, mastery-avoidance goals were not correlated with cheating behavior. Our findings agree with those obtained in the Yang et al. [17] study. There may be implications for applied teaching practices resulting from such findings. According to Murdock and Anderman [5], if educators desire fewer occurrences of cheating, they should organize instructional contexts that give emphasis on mastery and improvement and evaluate on this basis, however exacting and complicated this task may be in the contemporary competitive times and in academic settings where what it really matters most of the time is the final grade obtained rather than personal learning and progress. Mastery-avoidance goals have been included rather recently within the 2x2 achievement goal framework and the research body regarding their antecedents and their consequences is still limited and developing [19,50]. As a result, only limited research has been done examining directly the relationship between mastery-avoidance goals and cheating, especially within the 2x2 theoretical and conceptual achievement goal framework. Our study was an effort toward this end.

We consider worth mentioning that two studies which have been carried out in quite different ethnic and cultural contexts and have used the AGQ-R have reported similar findings. Of course, more empirical work is needed for the validation of these findings.

In our study we found that pairs of goal measures sharing a common definition dimension of competence were positively correlated to a statistically significant level. This was particularly true for the two performance-based goals and it is a finding recurrent in many empirical studies leading to an interesting discussion and research effort related to the variables underlying this link [19,51].

Strengths and Limitations

This was the first time the 2x2 achievement goal framework has been utilized for the examination of a certain type of academic dishonesty, namely cheating behavior, within an educational setting in Greece expanding the research yield referring to the type of relationship between achievement goals and cheating behavior. Furthermore, for the measurement of achievement goals, we have used the AGQ-R, which, as we have already mentioned, is a research instrument characterized by correspondence between the way the main constructs are conceptualized and the way they are operationalized. This correspondence facilitates a rather unambiguous and reliable interpretation of empirical findings and it eases the theoretical progress in the literature related to achievement goals [19].

As we have already mentioned, our sample consisted of female students and so our findings are limited to the feminine gender and cannot be generalized to the male gender. We must also note that, due to the correlational type of our research, we cannot make statements about cause and effect between the variables.

Conclusion

Our study was an attempt to examine the relations between four personal achievement goals included in the 2x2 theoretical and conceptual achievement goal framework and cheating behavior. Four hypotheses were tested and only one was supported by analysis. Contrary to our hypotheses, performance-approach and performance-avoidance goals were not positive predictors and mastery-avoidance goals were not negative predictors of cheating behavior. In accord with our hypothesis, mastery-approach goals were negative predictors of cheating behavior.

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