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EDUCATION POLICY | RESEARCH ARTICLE

Enhancing higher education student attendance through classroom management

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Abstract: The findings of three consecutive studies about effective classroom management techniques designed to enhance higher education student attendance and the resulting correlation between student attendance and student achievement are reported here. The consecutive studies included a pilot study, culminating study, and replication study. The experimental groups included both female and male participants ($N = 14$) in the pilot study and only female participants in the culminating study ($N = 19$) and the replication study ($N = 16$). The results indicated an enhancement in higher education student attendance and a positive significant correlation between student attendance and student achievement. The discussion highlights main research findings supported by previous research, and a conclusion provides recommendations for higher education institutions and directions for future research.

Subjects: Education Studies; Educational Research; Study of Higher Education

Keywords: higher education; student attendance; classroom management; CAMTs and CARs

1. Introduction

Classroom management plays a fundamental role in enhancing student attendance in higher education. Improving attendance requires effort, planning, and time (Geltner & Clark, 2005; Snyder, 1998). Student attendance is significant and has a positive correlation with student achievement

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PUBLIC INTEREST STATEMENT

This research examines effective classroom management techniques designed to enhance student attendance in higher education. Findings of this research, which involved three consecutive studies, showed improvements in student attendance and a correlation between student attendance and student achievement in higher education classrooms. The author provides justification for the effectiveness of the described classroom management techniques as essential in higher education, recommends their use for higher education institutions, and outlines directions for future research.

(Chandler, 2008; Durden & Ellis, 1995; Emmer, Evertson, & Worsham, 2006; Gump, 2004; Marburger, 2001, 2006; Park & Kerr, 1990; Romer, 1993; Schmidt, 1983). However, higher education still lacks effective classroom management techniques (Al-Hamdan, 2007).

The purpose of this research is to present: (1) the findings of three consecutive studies about effective classroom management techniques designed to enhance higher education student attendance, and (2) the correlation between student attendance and student achievement based on these techniques.

2. Student attendance in higher education: some background

Worldwide, a common routine in initial class meetings for instructors, both novice and experienced and in public and private higher education settings, is to explain the requirements for the course, the reading assignments, and the due dates for these assignments. Baseline classroom rules mentioned might include policies on work handed in “late” and tardiness (i.e. coming into class after it has begun). These baseline management routines and requirements help instructors guide and manage their classrooms.

However, in Kuwait, there are currently no professional training programs, studies, or training courses in the use of and benefits derived from the utilization of classroom management. Some faculty members, especially those who graduated from educational institutions in Kuwait, have not been trained in or are not prepared to use classroom management techniques that have a direct impact on student attendance and learning in university classrooms (Al-Hamdan, 2007). To remedy this shortcoming, Al-Hamdan (2007) suggested training new faculty members in Kuwait in the utilization of classroom management techniques in their university classes.

These and related issues show the global significance of improving university classroom attendance by developing and implementing classroom management techniques. For example, in most Kuwaiti universities and many worldwide, instructors do not enforce attendance, which gives students the choice to attend class or not. However, class attendance is related to grades in college courses. Additionally, if class attendance is not mandatory, then students will not attend classes on a regular basis as expected (Gump, 2004). Several studies (e.g. Bowman, 2007; Bromfield, 2006) investigate student attendance of classes in a university. Bowman’s research (2007, p. 81) focused on a common concern expressed by instructors at all levels in working with students: “How can educators ... [increase] student motivation ... [in their ... classrooms] ... through their policies and practices.” Some of the following methodological procedures are used in Bowman’s study: (1) providing the students with choices, (2) offering unexpected rewards, and (3) focusing on or emphasizing the challenging and interesting aspects of a task so the students will want to perform it.

Snyder (1998) extended these procedures and noted that university instructors who work with advanced graduate students should provide guidance and model these successful procedures in their own classes. This way, these soon-to-be university professors will see the benefits of using effective management techniques, including classroom procedural policies and attendance requirements that enhance those already used in their colleges or universities. Snyder’s research results include: (1) modeling classroom strategies for students and using them consistently throughout the semester, and (2) building strategies into classroom time to apply them in context so the students understand them. Here, the emphasis is on students’ classroom procedures and meaningful efforts to understand them and not instructors’ needs at particular times throughout class meetings. Some of the observational and modeling procedures used in Snyder’s research are: (1) viewing together the students’ behavior, (2) offering specific techniques to help maintain student interest in being models in their next classes, and (3) providing more than one opportunity to practice necessary skills and routines. Similar to these observational and modeling procedures, Boyer, Bixler, Gordon, Heck,

and Lee (1939) proposed that instructors attempt to find solutions to their classroom problems or situations and test management procedures consistent with their own teaching philosophies and those of their employing universities.

Bromfield (2006) investigated how university instructors first recognize their own issues and concerns in seeking solutions to their classroom management issues. Bromfield recognized that initial attempts to understand and establish classroom management procedures involved instructors and their views of the procedures' importance. Thus, in a sense, Bromfield observed that self-perception and self-awareness were forerunners of instructors' thinking about classroom management procedures. Several planning steps in Bromfield's study used to help instructors think about "self" in planning management procedures include: (1) discussing and exploring student behaviors, (2) introducing theoretical frameworks for discussion and use in practice, and (3) incorporating this interdependency in teaching to create more effective behavior management in the classroom.

In higher education settings, Chang's research (2005, p. 770) used several special methods that were helpful in developing, implementing, and testing classroom management procedures. The results showed that students benefit from meeting faculty members outside class, including in becoming more likely to build an effective student group in class. Other research procedures used by Chang include: (1) faculty members having meaningful "interactions" with either individual students or small groups of students, (2) students having satisfying personal contact with instructors, and (3) students meeting with faculty members during their scheduled office hours.

Devadoss and Foltz (1996) extended management procedures and techniques to include rules and strategies that provide students with positive and constructive ways (1) to see the beginning, middle, and end points of management, and (2) to understand how these techniques affect them. In this study, for example, the researchers made the first day of the course meaningful and interactive by introducing the course content, rules, and classroom management procedures. Examples of each of these elements were given, as well as time for discussion and interaction between the professor and the students and among the students. In support, the research results of Emmer et al. (2006) showed that involving students cooperatively in discussions about classroom rules creates a sense of responsibility for their behavior in the classroom.

In addition to behavior-focused management rules and classroom expectations of student behavior, Devadoss and Foltz (1996) introduced another element into classroom management and techniques. Their research showed that providing extra points to university students for attending classes directly decreased absenteeism (for further examples of university classrooms using extra points, see Reeves, 2008).

Rocca's (2004) research investigated why students at the college level choose not to attend their classes. Her results showed that students who perceived their professors as higher in immediacy were more likely to attend class, while those who perceived their professors as higher in verbal aggression were less likely to attend class. The following two methods also came from Rocca's research: (1) implementing strategies that help instructors transmit immediacy rather than aggression, and (2) demonstrating daily communication behaviors of instructors that have an impact on student attendance.

In the words of Boyer et al. (1939, p. 2), Rocca's results and methods moved beyond "the framework of the individual ... [to] the framework of the social group of which he/she is a part." This seminal statement certainly implies the need for group-oriented classroom management strategies—that is, strategies that in general do more than increase individual student attendance in university settings.

The research of Mercurio, MacDonald, Bottenberg, Johnson, and Tubin (2007) showed that learning increases when university students know what is expected of them and understand course objectives and how the content fits these objectives. Additionally, students who assist in developing

strategies and classroom rules can try many ways of perceiving and solving problems in both university classrooms and real-life work settings (see Slavin, 2006). Furthermore, Chandler (2008) examined comparisons between university students' extrinsic vs. intrinsic motivations. A survey of these students revealed that college professors who provided opportunities for student/class participation were more likely to facilitate improvements in their students' work completion and class attendance. Attention to class participation in its various forms, such as panel and committee presentations, student-led discussions, and student or group-led presentations, appears to contribute to increased student attendance, attention and completion of assignments.

3. Methods

3.1. Research design

The research design included three consecutive studies: (1) a pilot study, (2) a culminating study, and (3) a replication study. Each study comprised experimental and control groups. The experimental groups received the designed classroom management techniques, and the control groups received the university's standard attendance policies.

3.2. Participants

The participants were both female and male ($N = 14$, 7 female and 7 male) in the pilot study, female ($N = 19$) in the culminating study, and female ($N = 16$) in the replication study. The participants were second-year undergraduate students majoring in Education. The eligibility criteria for the sample selection were based on completion of prerequisite courses in the teacher education program. The participants were enrolled in levels one and two of a four-tiered unit of Education courses in the teacher education program at a university in Kuwait. Level one Education courses are related to exploration of education as a profession, while level two Education courses are related to analyses of the nature and process of education. The groups were limited to mainly female students because 93% of the students enrolled in the university's education program were female. Because each of the studies was conducted at the same level of the teacher education program, all the participants studied subjects and materials with the same scope and focus.

3.3. Development of classroom management techniques

Classroom management techniques designed in the research were: (1) classroom attendance management techniques (CAMTs), and (2) classroom attendance rules (CARs). CAMTs are techniques used in this experimental research and included implementation of several classroom rules, attendance requirements, and credits given to students based on the specific classroom management techniques listed in Appendix 1. CARs are selected classroom attendance rules used in this study.

The procedures used for developing CAMTs and CARs are described as follows. First, a classroom activity was administered to develop a foundational list of techniques and rules for the CAMTs and CARs, respectively. The students were asked how an instructor could enhance or increase the students' attendance in university classes. Through oral discussion, the students identified techniques and rules that they felt would work well. The researcher wrote down the main points the students identified during the class activity. Second, a list of requirements for CAMTs was developed, including tardiness and absence rules, attendance requirements, and credits, using a token economy system. Third, a list of policies for CARs was developed. Fourth, a final version of the CAMTs and CARs was printed on a handout and given to the university students in the experimental groups with the course syllabus on the first day of class. The handout detailed the university instructor's requirements for student attendance in each course.

The classroom management techniques, listed in Table 1, involved tracking student attendance using a tricolor code: (1) green for on-time student attendance, (2) blue for late attendance, and (3)

Table 1. Summarized CAMTs and CARs in classroom management techniques

Classroom attendance type	Points	Credits	Assignment	Color
On-time attendance	1	1	No	Green
Late attendance	1	0	Yes	Blue
Absent	0	0	No	Red

Note: This table was retrieved from Appendix 1 of the original funded research project No. 2007-1109-02.

red for absences. For example, when a student attended on time, this was noted in green; late attendance was marked in blue; and absence was marked in red. The colors were chosen because of their psychological and behavioral modification effects on the participants (Zelanski & Fisher, 1999). Red tends to act as a warning that a behavior is unacceptable, while blue and green tend to engender feelings of acceptance. Wolfarth and Sam's (1982) experimental study revealed that cool colors reinforce behaviors, while warm colors tend to arrest undesired behaviors.

3.4. Verification and reliability

The classroom management techniques CAMTs and CARs were verified by three faculty members to determine their validity, accuracy, and appropriateness for use with university students in this research study. The first faculty member made three modifications to the CAMTs; this modified version was given to the second faculty member, who suggested adding a new rule to the CARs: "students who are five minutes late are considered tardy (i.e. late) and are subject to the terms described above in CAMTs (number 3-a) and CARs (number 2)." Finally, a third faculty member examined the CAMTs and CARs for face and content validity and found no further changes necessary. The reliability of the modified CAMTs and CARs was checked by distributing a survey to 10 other faculty members with 5–15 years of teaching experience in higher education. The surveys were collected and analyzed using the Statistical Package for the Social Sciences (SPSS for Windows, version 15.0). Reliability yielded a Cronbach's Alpha coefficient of 0.92, which indicated a high degree of agreement among the 10 experienced faculty members and demonstrated conformity to the internal constructs of the CAMTs and CARs.

3.5. Data collection and analysis

The three consecutive studies were conducted in three different periods: (1) the pilot study was administered during the summer semester of the academic year (AY) 2006–2007, (2) the culminating study was administered in the fall semester of AY 2008–2009, and (3) the replication study was administered in the spring semester of (AY) 2008–2009. Student attendance data were collected by a research assistant on an Excel spreadsheet and statistically analyzed using SPSS. These data were collected from 20 classes in the pilot study and 43 classes for each of the culminating and replication studies. Statistical tests used to analyze the collected data included the Shapiro-Wilk test, t-test and Pearson Correlation test.

4. Results

4.1. Pilot study

The results indicated that the students' final grades improved as a result of applying the CAMTs and CARs. The improvement in the students' final grades was due to the 20% bonus given for good attendance performance at the end of the summer semester. The additional credits raised the students' final grades and indicated a positive relationship between the credit value gained through

Table 2. Results of regression analysis

Std. error of the estimate	Adjusted R ²	R ²	R	Model
3.96926	0.131	0.203	0.451	1

Note: This table was retrieved from Appendix 1 of the original funded research project No. 2007-1109-02.

Table 3. t-test results in culminating study for student attendance means in experimental and control groups

Group	Mean	S.D.	R	t	Sig. t
Experimental	39.84	3.47	0.582**	3.335	0.004
Control	37.58	2.85			

Note: This table was retrieved from Appendix 1 of the original funded research project No. 2007-1109-02.

**Sig. at 1%.

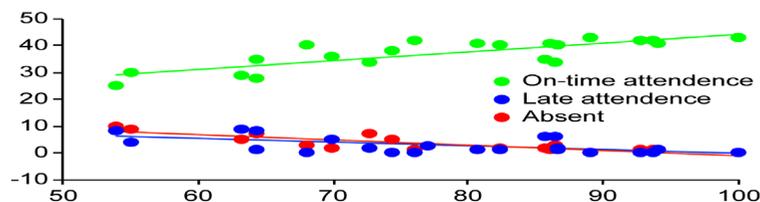
student attendance and final grades. Therefore, improvements in student attendance and final grades were revealed in the results of the regression analysis test, as shown in Table 2. In contrast, the students in the control group had no improvements because there was no implementation of classroom management techniques in their classes.

4.2. Culminating study

The results indicated that the mean attendance rate for the experimental group (81.7) was higher than that for the control group (79.4), with a significant difference (7.4, $p > 0.05$). These results demonstrate the effect of applying the CAMTs and CARs strategy: specifically, an 84% improvement in the experimental group compared with the control group. This means that the percentage of enhancement in student attendance was approximately 8.4% for each student in the experimental group. Additionally, the enhancement in student attendance indicated that the mean class attendance for the experimental group was 40 classes, while it was 38 classes for the control group, with S.D.s of 2.9 and 3.9, respectively. Table 3 presents the significant difference (0.004, $p < 0.01$).

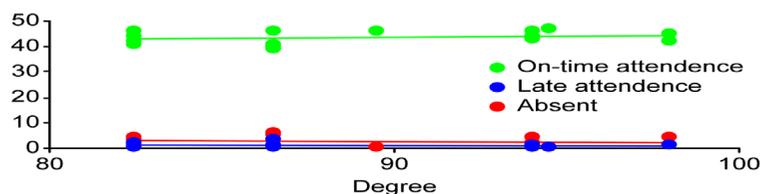
Additionally, Figure 1 presents the results that revealed a positive significant correlation (0.864) between on-time student attendance and overall student final grades in the experimental group, indicating that students who attended on time had higher final grades. The results indicated a negative correlation between late student attendance and student absence and overall student final grades; students who were tardy or missed classes received lower overall grades.

Figure 1. Culminating study relationship between students' overall final grades and on-time student attendance, late student attendance, and student absence in the experimental group.



Note: this figure was retrieved from Appendix 1 of the original funded research project No. 2007-1109-02.

Figure 2. Replication study relationship between students' overall final grades and on-time student attendance, late student attendance, and student absence in the experimental group.



Note: this figure was retrieved from Appendix 1 of the original funded research project No. 2007-1109-02.

Table 4. t-test results in replication study for student attendance means in experimental group and control group

Group	Mean	S.D.	t	Sig. t
Experimental	88.8	5.8	2.039	0.050
Control	84.2	7.0		

Note: this table was retrieved from Appendix 1 of the original funded research project No. 2007-1109-02.

4.3. Replication study

The results, presented in Table 4, showed that the experimental group had a higher mean (88.8) than did the control group (84.2). This indicates a significant ($p < 0.05$) enhancement in student attendance and final grades, with student attendance increasing approximately 4.6% per student in the experimental group. A positive significant correlation (0.441) was found between on-time student attendance and overall student final grades in the experimental group. The classroom management techniques affected the experimental group, as shown in Figure 2, which indicates that students attended an increased number of classes on time.

5. Discussion and conclusion

Higher education student attendance is a fundamental factor affecting student achievement. To examine this issue, a pilot study and follow-up studies were conducted. Across the three consecutive studies, the purpose was to enhance higher education student attendance through usage of management techniques, CAMTs and CARs, correlated with improving student achievement.

The classroom management techniques CAMTs and CARs, the processes implemented to impact and enhance student attendance, were used across the three consecutive studies.

Emmer et al. (2006) and Chandler (2008) showed the need for students and instructors to openly discuss ways to improve student classroom attendance in college courses. The ideas for student discussions were to help plan new CAMTs and assist in supporting them and their usage as CARs. This student involvement (i.e. “buying into the CAMTs and CARs through their assistance”) was shown to reduce student absenteeism (McCarthy, Sundby, Merladet, & Luxenberg, 1997). Several examples of effective classroom management techniques from the three consecutive studies included here were as follows (see list of both CAMTs and CARs in Appendix 1: combining instructor content themes for content organization and student experiences with, and discussions about, related content (Steele, 2007); creating questions about the instructor’s lesson plan and encouraging students to respond to them (Bond, 2008); giving extra points for attending classes (Lock & Hendley, 2007); planning additional meetings with students outside of the classroom (Chang, 2005); and asking students to take notes on the CAMTs and CARs and then discuss their impact on improving achievement and attendance (Slavin, 2006).

Implementation of the effective classroom management techniques required the use of CAMTs and CARs. In other words, CARs were needed to provide information to the instructor about whether the students were involved with and understood the CAMTs. Providing the instructor (and students) with detailed information was a major goal of the CAMTs. In designing and field-testing the CARs, colors indicated particular student attendance behaviors. For example, the instructor used green to indicate that the student came to class on time, tardiness was marked in blue, and red was used to indicate an absence.

In the pilot study, the use of the classroom management techniques CAMTs and CARs showed several promising results. First, higher education students enhanced their attendance. Regression analyses indicated a significant positive relationship between student attendance and student achievement, while students in the control group had no attendance enhancement or improvements because this group had no classroom management techniques implemented in their classrooms.

In the culminating and replication studies, both experimental and control groups were used. Several interesting results were found by increasing study time across two semesters. First, in comparing the means for student attendance through CAMT procedures with CAR monitoring in both the experimental and control groups, higher means were noted in the experimental group (81.7) than in the control group (79.4) in the culminating study. In the replication study, there was a higher mean (88.8) for the experimental group than for the control group (84.2). Second, comparisons between student attendance enhancements yielded greater improvement in student achievement for the experimental groups than the control groups, with greater improvement for each student individually in the experimental groups (8.4% in the fall and 4.6% in the spring semesters). Third, there was a positive and significant Pearson correlation of 0.864 in the culminating study and 0.441 in the replication study between the critical variables of on-time student attendance and overall student achievement in the experimental groups. Overall, the designed classroom management techniques, CAMTs and CARs, showed that higher education students in all the experimental groups who attended class regularly had improved attendance by the end of each academic semester.

A comparison of previous research and support documentation shows that CAMTs and CARs are critical classroom elements (Emmer et al., 2006). When used together, they have the potential to enhance higher education student attendance in classrooms and significantly improve student achievement. In this research, these improvements in student attendance and achievement and decreases in tardiness were noted several weeks into the experiment as well as at the end.

Chang (2005) suggested having college students use “note taking strategies” to write down and memorize CAMTs and CARs. Conroy, Sutherland, Snyder, and Marsh (2008, p. 24) noted that using classroom interventions, such as CAMTs and CARs, “generally mean[s] that the teacher has active, frequent, and regular engagement with students.” These initial activities helped students focus on the relevant management and attendance techniques and rules whose main ideas could be rewritten and restated in different words (Slavin, 2006). Thus, CAMTs and CARs are group-oriented scaffolds and frameworks useful to the student and his/her social classroom group (Boyer et al., 1939). Similar to the results from Johnson-Gros, Lyons, and Griffin (2008), which showed reduced student tardiness in high school settings, these CAMTs and CARs as classroom management techniques become learned student strategies to be used throughout the academic semester. Furthermore, they may become more quickly anchored and learned as the instructor models them in higher education classroom settings. In addition to instructor modeling, this study found results similar to Johnson-Gros et al. (2008) about instructor-held meetings with students in the office and elsewhere. The purpose of these meetings was to discuss strategies in classrooms and the students’ perceptions and thoughts about them. These meetings also provided students with an opportunity to participate constructively in rule setting. Furthermore, students, especially those majoring in education, could participate in designing and practicing classroom management techniques such as CAMTs and CARs in higher education settings and then use them in their future classrooms. In the instructor meetings in this study,

the students reported their understanding of others' expectations of them, the course, and how the course fit with the use of the classroom management techniques (see Geltner & Clark, 2005, on working with students to establish and increase student academic, social, and career growth).

In conclusion, the use of the classroom management techniques CAMTs and CARs dramatically enhanced higher education student attendance and on-time class arrival, with more on-time class attendance found among the experimental groups. These enhancements were significant and positively correlated with improved student achievement over the course of the study. Therefore, higher education institutions should implement CAMTs and CARs to enhance student attendance. Future research could examine the designed classroom management techniques on a higher education-wide basis. Consistent use across academic semesters by interested instructors in several classes would maximize social validity. At a minimum, this expanded research would provide useful social classroom laboratories for fine-tuning and even expanding the use of these classroom management techniques in courses with different content and in various course activities.

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Appendix 1

Classroom management techniques (CAMTs and CARs)

CAMTs

- (1) Attending class is worth 10% of the total class grade:
 - (a) One point for each class attended.
- (2) Credits
 - (a) One extra point for students attending the class one time beyond the number required for the attendance grade.
- (3) Subtracting points
 - (a) One point is subtracted from the total attendance requirement grade plus an extra class assignment is given in the case of being tardy for class. Tardiness is defined as being late for class by 5 or more minutes.
 - (b) Two points are subtracted as one from the total attendance requirement grade and another one from the total credits in the case of absence from class for one entire class meeting.

CARs

- (1) Come to class on time.
- (2) Late or tardy students receive one extra assignment.
- (3) Absence from class results in subtracting two points from the total attendance requirement and the total credits.
- (4) If a student is five minutes late, the student is considered tardy (i.e. late) and is subject to the terms described above in CAMTs (number: 3-a) and CARs (number: 2).
- (5) Absent students are subject to the terms in the above CAMTs (number: 3-b) and CARs (number: 3).



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