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Structural Model of Competence and Self-Efficacy Related to Classroom Management and Classroom Management Attitude in the Faculty Members

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Abstract

Background and Objective: Classroom management is key factor in achieving to effective teaching-learning process. There are several factors involved in the management of the classroom by faculty members. The purpose of this study was to investigate the structural model of competence, self-efficacy related to classroom management, and classroom management attitudes in the faculty members of Isfahan University of Medical Science at 2013- 2014 academic years.

Materials and Methods: This research was descriptive-correlational and the subjects consisted of 92 faculty members. Instruments were Perceived Self-Efficacy in Classroom Management scale (Emmer and Hickman ,1991), Teacher Competency Scale (Seker *et al*, 2004), and the Attitudes and Beliefs on Classroom Control (ABCC) Inventory (Martin *et al*., 1998) that distributed among faculty members through proportional stratified sampling. Data were analyzed by correlation, regression analysis and structural equation modeling using SPSS 22 and Amos 22 software.

Results: Results showed a significant correlation between competence, self-efficacy of classroom management, the attitudes and beliefs on classroom control, and demographic factors (teaching experience and degree) with together ($p<0/01$). The finding of analysis of regression also showed competency scale can predict attitudes and beliefs on classroom control ($P<0.01$). Moreover based on structural model, the predicted rate of classroom management attitude through competency was 0.56 (Gamma =0.56).

Conclusion: Faculty members of the university can improve and strengthen the management and administration of their classroom by developing their competence in teaching and improving their managerial self-efficacy.

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Introduction

Class management is one of the most important components in learning-teaching situations (1), regarded as one of the criteria for realization of effective teaching (2). Lack of proper management and organization of classes by teachers and instructors leads to failure in attracting the attention of learners and creating an appropriate environment for learning. Class management can be applied in a broad umbrella term, which describes the efforts of teachers in control of activities in class, including learning, social interactions and pervasive behavior (3). The major goal of class management is creation and maintenance of social order for more efficient education and learning. Two essential factors, which play a role in empowering of teachers in class management, are self-efficiency and competency of instructors.

Teachers with proper self-efficiency and competency are equipped with strategies, enabling them to make correct decisions about various situations in classroom and effectively manage their classes. According to the literature, the general class management by teachers is not favorable, and there is a lack of essential abilities and satisfaction in these individuals to form desirable discipline and effective class control. Given such situations in classes and recognition of its individual and social outcomes, it is an undeniable necessity for learners, teachers, higher education system, and even society to evaluate the factors affecting skills and abilities of teachers in management of classes. The most important factor for success of higher education system in realization of the desired educational goals is professors. Through creating reliable emotional connection, effective control of the classroom and an active environment, a professor can be able to provide the best teaching situation in class, and the necessary conditions for learning and changing the students. In this respect, professors are managers, who use management strategies to maintain the order and control of the classroom and perform educational activities.

According to the experts, effective management of classroom is the most important issues of teachers. In this respect, Doyle defined class management as treatment of misbehaviors and disorders occurring in educational environments. According to this scholar, the aim of class management is creation and maintenance of social order to improve teaching and learning (4). Class management refers to the formation of a safe and dynamic environment for learning. This

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concept is a combination of character, abilities, and professional qualification of teachers (5). Poor class management can lead to academic procrastination of students (6), whereas proper management of classrooms moves the educational system of a class toward its training goals (7). Nevertheless, several studies have shown that misbehavior of students in class is the most common concern of novice and experienced instructors, where 50% of the class duration is allocated to disciplinary issues and class control. Even teachers with appropriate teaching skills have concerns regarding the possibility of misbehavior of students and lack of ability to effectively control the class (8). An effective management system creates more organized classes and meaningful learning (9).

With proper management of classes, teachers can use new teaching methods (student-centered methods and collaborative education) in order to improve their teaching efficiency, solve the behavioral problems of students, and enhance their learning through effective control of the classroom (10). Interactive class management style increases self-directed learning of students (11). One of the most important factors affecting management of classes and creation of effective learning environment is beliefs of teachers in management of classes. In this regard, Zuckerman has stated that activities of teachers in class are mainly based on their beliefs and abilities (12). In other words, reaction of teachers to class situations and methods used to solve the problems in a classroom are originated from their beliefs (13). Confidence of teachers in their abilities, which affect their performance capabilities, is recognized as self-efficiency, which determines how a person feels, thinks, motivates himself and behaves (14). In addition, self-efficiency beliefs are powerful predictors of behaviors of teachers (15).

An instructor can accurately and greatly manage a classroom if he believes so (16). A teacher with high self-efficiency defends humanist management, which emphasizes the independence of students (17). Another important factor for proper class management is competency of teachers. This concept includes knowledge, behavior, thinking, decision-making, and character of teachers and effective control over learning activities of students (18). On the other hand, Huntley mentioned that teachers with high competency are capable of managing the behaviors of students (19). Competency of professors can be an appropriate predictor of

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class management and other components of high-quality teaching (20). Studies have shown that competency of teachers directly affects their teaching quality (21, 22). In a research by Brouwer and Tomic, effects of efficiency of teachers on management of class and their occupational burnout were assessed. According to the results of the mentioned research, perceptual self-efficacy of teachers had longitudinal effect on depersonalization and simultaneously on individual progress of students. In addition, a negative relationship was observed between self-efficiency and emotional exhaustion of teachers (8).

In this regard, Goddard *et al*. concluded that teachers with a greater sense of self-efficiency were more successful in using class management skills (23). These instructors are willing to use more systematic, properly designed, student-centered and humanist strategies to manage classes in order to be better accepted by students (24). Giallo and Little reported in a study that teachers with high self-efficiency were more successful in management of their classes and dealing with misbehaviors of students, compared to instructors with lower self-efficiencies (25). In another research, Abu-Tineh et al. evaluated the self-efficiency of teachers and class management styles in schools of Jordan. In this research, it was reported that teachers used Instructional management styles in their classrooms more, compared to the other management techniques (e.g., people and behavior managements). In addition, a significant and positive relationship was observed between individual self-efficiency of teachers and each class management style (Instructional, people and behavior managements) and the component of class management in general (26). Forbes and Zint evaluated the confidence of elementary teachers in their competency and student learning promotion ability. Results were indicative of a significant association between teaching experience and competency of teachers. While novice teachers focus on involving students in research activities to improve their learning, they have low confidence in their own abilities (27).

In a research performed by Huntley on novice teachers using phenomenology method, it was concluded that effective management of classes was one of the indicators of competency in instructors, where competency of teachers was reflected in their ability to manage a classroom (19). In terms of effects of beliefs and abilities of teachers on proper activities in class, Jafari et al. assessed the relationship between self-efficiency and

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competency of faculty members of Islamic Azad University and their teaching quality. In the mentioned study, a significant association was found between self-efficiency of professors and class management and other teaching components. Therefore, it seems that self-efficiency of teachers can predict their teaching quality. Results obtained in this research were also indicative of a significant relationship between self-efficiency and competency of teachers, where competency can predict class management and other effective teaching components (20). After the review of the literature, we found that limited number of studies have been performed on factors determining effective management of classes in our higher education system. In addition, there is no research, in which the effects of beliefs and competency of professors on effective management of classes are directly evaluated. Meanwhile, the results from other countries have demonstrated the significant role of confidence and abilities of teachers in proper control and management of classes (28, 29). Therefore, the present research aimed to determine the share of self-efficiency and competency of professors in effective management of classes.

Identification of the effective role of these factors in class management can provide scientific and practical solutions to improve the ability of teachers and professors to manage classes, create and maintain effective learning, improve the learning of students and achieve the educational goals of the institute. In this regard, the following goals are evaluated in this research:

1. There is a significant relationship between competency and self-efficiency of faculty members in management of classes.
2. There is an association between competency of faculty members and their attitude toward class management.
3. There is a significant relationship between self-efficiency of faculty members and their class management attitude.
4. Competency, experience and self-efficiency of faculty members can predict their management attitudes in classes.
5. There is a significant relationship between competency, self-efficiency and class management attitude of faculty members and their demographic characteristics (teaching experience and academic rank).
6. There are multiple relationships between competency, self-efficiency in class management, attitude toward class management and demographic characteristics (teaching experience and academic rank) in the society of faculty members.

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Materials and Methods

Given the goal of the research, which was determining the relationship between competency and self-efficiency in class management and classroom management attitude of faculty members in Isfahan University of Medical Sciences, this research was carried out as a descriptive and correlational study.

A) Study population and sampling: study population included all full-time faculty members (N=763) of Isfahan University of Medical Sciences, Isfahan, Iran in 2013-2014. At first, 40 copies of the self-efficiency questionnaire were distributed among the subjects to perform the pilot and determine the adequacy of the sample size. In total, 92 samples were selected according to statistical calculations and based on Cochran formula at test power of 0.8 and significance level near zero (P=0.001) (30). In addition, stratified sampling was applied to evaluate the variables of the research in faculty members of Isfahan University of Medical Sciences. In this research and in proportion to the number of faculty members of each faculty, a number of faculty members of each school was selected as sample group, who obtained the questionnaire of the research.

Table 1: Selected sample size for each faculty, proportional to the size of the faculties

Faculty	Medical Sciences/ medicine	dentistry	Pharmacy and Pharmaceutical Sciences	Rehabilitation Sciences	Health School / Department	School of Advanced Technologies in Medicine (SATiM)	Management and Medical Informatics	Nutrition and Food Sciences	Nursing	total
population	425	91	41	32	26	21	33	10	84	**763**
Sample	51	11	5	4	3	3	4	1	10	**92**

B) Research tools: in total, three questionnaires were used in this research: "classroom management self-efficacy scale" designed by Emmer and Hickman (1991), which contained 14 items and was scored based on a six-point Likert scale (from completely disagree=1 to completely agree=6) (31). Self-efficiency of teachers in management of classrooms is assessed by this questionnaire. Reliability of this tool was estimated at 0.80 by its designers. In the present study, reliability of the mentioned scale was determined at 0.82. Teacher competency assessment scale was designed

by Seker *et al*. (2004), which comprised of 38 items and was scored based on a three-point Likert scale (inadequate=1-adequate=3) (32). The mentioned scale evaluated the perception of teachers toward learning-teaching processes. In the present research, reliability of the questionnaire was determined at 0.89. The final study tool was attitudes and beliefs on classroom control (ABCC) inventory by Martin, *et al*. (1998), items of which have been developed according to classroom operations and observations (3). The mentioned inventory was comprised of 26 items and scored based on a four-point Likert scale (from "does not describe me well=1, to "describes me well=4"). In addition, this inventory contains three dimensions of classroom management styles (Instructional management=14 items, people management=eight items, and behavior management=4 items). Validity of this inventory was evaluated using factor analysis (Martin *et al*., 1998). Reliability of this tool was confirmed by its designers at the Cronbach's alphas of 0.82, 0.69, and 0.69 for dimensions of Instructional, people and behavior management, respectively. In the current study, reliability of this tool was estimated at 0.92. In addition, questions, such as years of service and academic rank, were added to the end of the mentioned questionnaires to determine the demographic characteristics of the subjects.

C) Data analysis: analysis of the data was performed using correlation coefficient, regression analysis and structural equation model. In the latter item, multiple relationships between latent (experience and management of classroom) and obvious (academic rank and teaching experience, which are indicative of the latent variable of experience, variables of competency and self-efficiency and variables of teaching, people and behavior managements, which are indicative of latent variable of class management) variables were evaluated.

Indicators of the fitting model included: CMIN ($\chi 2$) or Chi-square, applied to evaluate the consistency between the observed and re-produced covariance matrix. Therefore, a non-significant amount for this indicator is of paramount importance (33). In addition, root mean square error of approximation (RMSEA) was based on residual matrix analysis. For this indicator, the acceptable models had amounts below 0.06 (34, 35); $\chi 2$/df (normal or relative Chi-square), which was used to consider the free parameters in calculation of fitting indicator and was estimated by simple division of the Chi-

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square into the degree of freedom of the model. For this indicator, the amounts in the range of 1-3 were acceptable (36). On the other hand, the amount above 0.90 was indicative of proper fitting for goodness of fit index (GFI), which estimates the ratio of the sum of the squares explained by the model to the total sum of the estimated squared matrices. For the adjusted goodness of fit index (AGFI), the amount of ≥0.90 was indicative of proper fitting of the model (37). For comparative fit index (CFI), which was based on correlation between the current variables of the model, and for incremental fit index (IFI), which was calculated based on comparison of designed models with the independence model, the amount above 0.90 was acceptable (38). In addition, the amount of 0.90 was acceptable for normed fit index (NFI) by Bentler-Bonte (39). Moreover, Tucker-Lewis index (TLI), which was based on mean correlation coefficient among variables of the model, the acceptable models had the score of >0.95 (40).

Data analysis was performed in SPSS version 22 and IBM SPSS Amos version 22.

Results

Hypothesis one: there is a significant relationship between competency of faculty members and their classroom management self-efficiency. As observed in Table 2 and correlation matrix, a significant association was found between the competency of faculty members and their class management self-efficiency, which are both regarded as predictive variables of classroom management (P<0.01). The amount of this relationship was reported to be 0.76.

Hypothesis two: there is a relationship between the competency of faculty members and class management attitude and its components (Instructional, people and behavior managements). According to Table 2, a significant association was observed between the competency of faculty members and their class management attitude (P<0.01). The amount of this relationship was reported to be 0.84. In addition, a significant relationship was found between the competency of faculty members and three classroom management styles (P<0.01). The highest amount of this relationship was 0.84 between the components of competency and Instructional management.

Hypothesis three: there was a significant relationship between class management self-efficiency of faculty members and class management attitude and its components (Instructional, people and behavior

managements). According to Table 2, a significant association was found between class management self-efficiency of faculty members and their class management attitude (P<0.01). The amount of this relationship was 0.68. In addition, a significant relationship was observed between class management self-efficiency and all three class management styles (P<0.01), and the lowest amount was 0.60, found between class management self-efficiency and behavior management.

Hypothesis four: a significant relationship was found between competency and class management self-efficiency of faculty members and their class management attitude with demographic characteristics of teaching experience and academic rank. As observed in Table 2, a positive and significant association was found between demographic characteristic of teaching experience and all of the other variables (P<0.01). The highest amount of this relationship was 0.93, observed between the variables of competency and teaching experience. In addition, a positive and significant relationship was found between the academic rank and all of the other variables (P<0.01). In this regard, the highest amount was 0.60, observed between academic rank and variable of class management self-efficiency.

Table 2: Correlation coefficients between research variables

	variables	1	2	3	4	5	6	7	8
1	**competency**	-							
2	**class management self-efficiency**	0/76**	-						
3	**Class management attitude**	0/84**	0/68**	-					
4	**Instructional management**	0/84**	0/69**	0/98**	-				
5	**People management**	0/81**	0/60**	0/95**	0/92**	-			
6	**behavior management**	0/76**	0/69**	0/92**	0/90**	0/83**	-		
7	**academic rank**	0/56**	060**	0/50**	0/49**	0/47**	0/48**	-	
8	**teaching experience**	0/93**	0/78**	0/81**	0/81**	0/77**	0/75**	0/60**	-

** p< 0/01

Hypothesis five: competency, experience and class management self-efficiency of faculty members can predict their class management attitude. In this section, level of predictability of each variable was assessed using step-by-step regression method, and the results are provided in the table below.

Table 3: Results of regression analysis with stepwise method for predictive variables (Competency, experience and self-efficacy in class management) and criterion variable (class management attitude)

Model		R	R^2	F	R square change	Regression coefficients
1	competency	0/86	0/75	268/59	0/75	Beta= 0/865 t = 16/39 p = 0/001

As observed in the table, only the variable of competency predicted class management attitude of faculty members ($P<0.01$, $R^2=0.75$). The pure relation of this component with classroom management attitude was 0.75. In addition, the significance of regression coefficient of experience and class management self-efficiency was above 0.05 ($P>0.05$). In other words, this component failed to significantly increase the predictability power.

Hypothesis six: multiple associations were found between competency, class management self-efficiency, class management attitude, and demographic characteristics (teaching experience and academic rank) in faculty members. The Amos software was used to evaluate this hypothesis and design a structural equation model for relationship between the variables of competency, class management self-efficiency, and class management attitude and demographic characteristics of teaching experience and academic rank of faculty members. Relationships between the variables of research are shown in Figure 1, and structural model fitting indicators of relationship between the mentioned variables are presented in Table 4.

As observed in Figure 1, standard gamma correlation between experience and competency of faculty members was 0.96, which was indicative of a 96% positive effect of experience on competency. On the other hand, standard gamma correlation between experience and self-efficiency was 0.82, which indicated the 82% positive effect of experience on self-efficiency. Moreover, the amount of standard gamma correlation between experience and class management was 0.34. Furthermore, it was observed that the amount of standard gamma correlation between competency and class management attitude was 0.56, which was indicative of 56% positive effect of competency on class management attitude. On the other hand, the amount of standard gamma correlation between self-efficiency and people and

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behavior managements was low.

Compared to the academic rank, the component of teaching experience with y lambda of 0.95 had a greater weight in determining the experience of faculty members. In addition, the component of Instructional management with x lambda of 0.99 had a greater weight in determining the type of class management used by faculty members, compared to other components. According to the results, the hypothesis six was confirmed to a large extent.

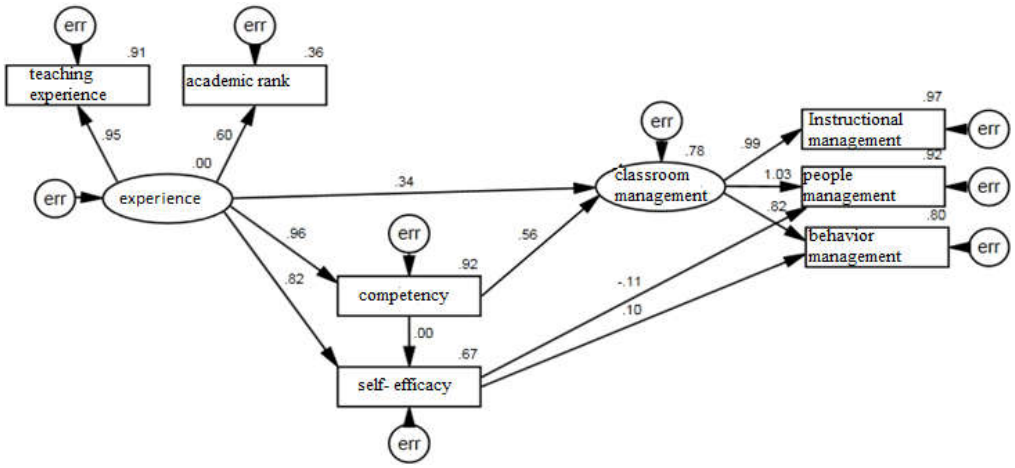

Figure 1: Structural equation modeling of the effect of competency, self-efficacy in class management and demographic factors (teaching experience and academic rank) of faculty members on classroom management attitude

Fitting indicators of structural model of the evaluated components are presented in Table 4. In this regard, CFI, NFI, TLI, and IFI were all indicative of acceptability of the model, showing amounts above 0.95, which were indicative of perfect fitting of the model. RMSEA, which represents the absolute fit, also showed the amount of 0.057, which was indicative of appropriate fit. On the other hand, GFI, which represents absolute fit, showed amounts above 0.95, which was indicative of desired fit. Finally, AGFI showed the amount of 0.896, which was indicative of proper fitting of the model. It could be concluded that the collected data were near the acceptable range, and the designed model was confirmed.

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Table 4: Fitting indexes for structural modeling of competency, self-efficacy and demographic factors in classroom management attitude

Fit indexes	$\chi 2$	df	$\frac{\chi 2}{df}$	GFI	AGFI	IFI	TLI	CFI	NFI	RMSEA
structural modeling	11/690	9	1/299	0/967	0/896	0/997	0/992	0/996	0/985	0/057

Discussion

Several studies have shown that the majority of teachers are unable to control their classes, and behavioral problems abundantly occur in classes. In addition to the disruption of the teaching process, teachers are unable to organize the contents and teaching process, failing to motivate students to learn. Without acquiring class management skills, teachers will not be able to use modern teaching techniques (collaborative student-centered method). The ability to control students in a classroom is the main factor for success in each education field. Failing to properly react to disrupting behaviors of students and control of the class leads to the waste of training time of students and dissatisfaction of teachers with their profession, causing significant depression in these individuals. In this respect, the current research evaluated the class management situation in the society of faculty members of Isfahan University of Medical Sciences. In the present study, the main focus was on designing a structural model from multiple relationships between the evaluated variables. In this model, the obvious variables of academic rank and teaching experience, which were indicative of latent variable of experience, were regarded as the predictive variables for competency, self-efficiency and class management attitude of professors. In addition, the variables of competency and self-efficiency were considered as moderating variables for evaluation of indirect impact of experience on class management attitude. While there was a poor direct effect of experience on class management attitude, it had a significant high direct impact on competency and self-efficiency.

In terms of predictability of teaching experience for competency and self-efficiency, our findings are incongruence with the results obtained by Forbes and Zint (27). However, experience had more effect on competency, compared to the component of self-efficiency. Given the mediating nature of competency, teaching experience had a direct

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impact on class management, and could be regarded as predictor of class management attitude of faculty members. In this regard, our findings are in line with the results obtained by Jafari *et al*. (20), in which it was concluded that competency of faculty members predicted their class management attitude. Competency of professors includes logical thinking, communication, successfulness, individual relations, information acquisition, accountability, creativity, and innovation, which are regarded as the original characteristics of a successful and effective manager. In the present research, competency of professors refers to knowledge and mastering the subject of the course, presenting subjects in proportion to the understanding of learners, focusing on their needs, creating positive interactions with students, motivating and growing creativity in students, using technology and determining educational strategies, which can be regarded as the essential tools for effective implementation of three dimensions of Instructional, people and behavior managements. Therefore, an effective and competent professor is first a successful manager of the classroom.

In the model of the research, competency directly affected and predicted self-efficiency of faculty members, which is consistent with the results obtained by Jafari *et al*. (20). Teachers with high level of competency have confidence in performing tasks related to class management and can motivate themselves to better implement the relevant techniques and employ positive beliefs and attitudes in this regard. In the present study, a significant relationship was also found between class management self-efficiency and attitude of the professors, which is consistent with the results obtained by Goddard *et al*. (23), Giallo and Little (25) and Abu-Tineh *et al*. (26), who evaluated the relationship between self-efficiency and general meaning of class management attitude in their studies. In the current research, self-efficiency of professors was defined as their ability to manage classes, which involved the attitude toward class management and confidence of teachers in their abilities to manage the behavior of students, so that order and coordination in classes are maintained (4). Given the correlation between class management self-efficiency and class management attitude in the present study, it was observed that self-efficiency insignificantly predicted the people and behavior managements, and failed to predict class management at the end.

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Conclusion

After the recognition of effects of self-efficiency and competency of teachers on class management, strategies can be employed to improve these skills in faculty members, enhance class management, and create a constructive teaching and learning environment and effective academic progress of students. One of the major drawbacks of this research was lack of generalizability of the final results to a larger population of faculty members in the country due to lack of considering the effect of individual differences, such as talent and character of each individual, on the evaluated variables. It is recommended that educational workshops and courses be held for faculty members, who are awarded for participation in these courses, to improve their self-efficiency and competency, which will result in enhanced class management.

Given the effect and significant role of experience in improvement of competency and self-efficiency of faculty members, which will lead to better management of classes, it is suggested that mentoring and teaching younger professors by more experiences professors be expanded in universities. In this regard, cooperative teaching can be significantly helpful. Moreover, it is recommended that experimental studies with two groups of young and experiences professors be performed in the future to evaluate the effect of experience on competency and self-efficiency of faculty members. Our findings can improve the current teaching-learning condition in higher education system. It is hoped that this research will have a significant share in institutionalization of an academic attitude in the area of class management, so that perfect teaching and learning can be observed in the higher education system.

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