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PRESERVICE SCIENCE TEACHERS' ORIENTATIONS TO CLASSROOM MANAGEMENT

FEN BİLGİSİ ADAY ÖĞRETMENLERİNİN SINIF YÖNETİMİNE YÖNELİK YAKLAŞIMLARI

Ayşe SAVRAN*, Jale ÇAKIROĞLU**

ABSTRACT: The purpose of this study was to explore preservice science teachers' perceptions of their classroom management beliefs. In addition, we were interested in determining differences in preservice teachers' beliefs regarding classroom management by gender and grade level. For this purpose, the adapted form of the Attitudes and Beliefs on Classroom Control (ABCC) Inventory was administered to 584 (172 third year and 412 fourth year) preservice science teachers enrolled in science teacher education programs at the eight different universities. Data were analyzed by utilizing descriptive statistics and t-tests. Results revealed that preservice science teachers had non-interventionist orientations on the People Management subscale, whereas they had interventionist orientations on the Instructional subscale. Contrary to the expectation, no significant difference revealed between preservice science teachers' perceptions of classroom management beliefs on the two subscales of the ABCC Inventory regarding gender and grade level.

Keywords: Classroom management, orientations, preservice science teachers, gender differences

ÖZET: Bu araştırma, fen bilgisi öğretmen adaylarının sınıf yönetimine yönelik inançlarını belirlemek amacı ile yapılmıştır. Ayrıca fen bilgisi öğretmen adaylarının cinsiyet ve sınıf farkı değişkenlerine göre sınıf yönetimine yönelik inançlarında fark olup olmadığı araştırılmıştır. Bu amaçla, Martin, Yin ve Baldwin (1998)' nin Sınıf Yönetimine Yönelik Tutum ve İnanç anketi Türkçe'ye çevrilmiş ve sekiz farklı üniversiteden toplam 584 (172'si üçüncü sınıf ve 412'si dördüncü sınıf) fen bilgisi öğretmen adayına uygulanmıştır. Elde edilen verilerin analizinde, betimsel istatistik ve t-test kullanılmıştır. Araştırmanın sonuçları, fen bilgisi öğretmen adaylarının sınıf yönetiminin ders yönetimi alt boyutunda disiplinci bir yaklaşıma sahip olurken, insan yönetimi alt boyutunda ise disiplinci olmayan bir yaklaşıma sahip olduklarını göstermiştir. Fen bilgisi öğretmen adaylarının sınıf yönetimine yönelik yaklaşımlarında cinsiyet ve sınıf farkı değişkenlerine göre ise beklenen fark çıkmamıştır.

Anahtar sözcükler: Sınıf yönetimi yaklaşımlar, fen bilgisi aday öğretmenleri, cinsiyet farklılıkları

1. INTRODUCTION

There is no doubt that the classroom atmosphere somehow organized as an environment that supports learning in spite of its complex endeavor. It is structured by the nature of relations and interactions within teachers and students as well as external factors such as administration, family and educational backgrounds. Classroom is, therefore, defined as a kind of ecosystem of various components in which teachers and students live and it affects how they behave in the class (Zabel & Zabel, 1996).

In this setting, teachers are responsible for creating and maintaining an effective learning environment to achieve instructional goals. Although classroom teaching is an extremely complex task, it appears easy to conduct in a well-organized and well-managed classroom in which students are hold sustained engagement in learning activates. In such a well- managed classroom, the teacher orchestrates the learning of students in a sense of respect and cooperation with their classmates. Much research findings converge on the conclusion that classroom organization and management strategies are both necessary and sufficient for establishing the classroom as an effective learning environment (Brophy, 1983, 1988; Emmer, Evertson, & Worsham, 2000; Evertson, Emmer, Sanford, & Clements, 1983; Doyle, 1986).

* Ayşe Savran, Pamukkale University, Faculty of Education, Departmentof Elementary Education.

** Assist. Prof. Dr. Jale Çakıroğlu, Middle East Technical University Faculty of Education, Department of Elementary Education.

Classroom management continues to be a primary concern for educational research in providing effective learning. In this manner, Brophy (1988) defined classroom management as the actions taken to create and maintain a learning environment conducive to attainment of the goals of instruction- arranging the physical environment of the classroom, establishing rules and procedures, maintaining attention to lessons and engagement in academic activities. In fact, classroom management includes all the things teachers must do to foster student involvement and co-operation in classroom activities and to establish a productive working environment (Roelofs & Veenman, 1994).

A great deal of literature provide insights how teachers will be able to manage student behavior and the classroom context in establishing and maintaining an effective learning environment to prevent misconduct behavior. Further, Brophy (1998) states that "this knowledge about classroom management will have to be integrated with knowledge of subject matter, pedagogy, and students within a coherent program of instruction that is suited to the opportunities and constraints within which the teacher must work" (p.4).

In particular, Brophy (1983) emphasized that good classroom management implies good instruction, because instructional skills are required to help the teacher be effective in good planning, organize the activities, and make effective transitions between these activities through the accomplishment of good management goals to assess desired learning outcomes.

Brophy (1998) pointed out that teachers who approach classroom management as a process of establishing and maintaining effective learning environments tend to be more successful than teachers who emphasize their roles as authority figures or disciplinarians. In this manner, Brophy (1988) distinguished effective managers from ineffective managers according to their success in preventing problems from occurring in the first place rather than skills to deal with problems after they have occurred. This is achieved by a systematic approach, which starts with preparation and planning before the school year begins, is implemented through expectations and establishment of procedures and routines at the beginning of the year, and is maintained throughout the year.

Martin and Baldwin (1992) asserted that teachers' approaches toward the managing the classroom would vary as a function of their beliefs regarding the nature of appropriate and inappropriate behaviors and how to control them. In this manner, Glickman and Tamashiro (1980) classified beliefs toward discipline on a continuum of control that reflects the extent to which teachers want to exercise control over students ranges from interventionist to interactionalist to non-interventionist. According to Martin and Baldwin (1992), the interventionists emphasize "what the outer environment does to the human organism to cause it to develop in its particular way", and at the opposite end of the continuum are the non-interventionists who "presuppose the child has an inner drive that needs to find its expression in the real world". Midway between these two extremes, interactionalists focus on "what the individual does to modify the external environment, as well as what the environment does to shape the individual" (p.5).

In an attempt to develop a multi dimensional-construct of classroom management, Martin and Baldwin (1992) designed the Inventory of Classroom Management Style (ICMS) to measure teachers' perceptions of their classroom management beliefs on a continuum of control that ranging from interventionist to interactionalist to non-interventionist as originally conceptualized by Glickman and Tamashiro (1980). During the last decade by utilizing this inventory, Martin and her colleagues have conducted a very substantial research that focuses on beliefs regarding classroom management differ among teacher and play an important role in effective classroom management. These studies have consistently shown a clear link between teacher characteristics and their management approaches.

In such a study, Martin and Baldwin (1992) investigated the differences between the beliefs of experienced and preservice teachers regarding classroom management. They found that preservice teachers scored significantly more non-interventionist than did experienced teachers.

Similarly, Martin and Baldwin (1993) assessed the differences between the beliefs of novice and experienced teachers regarding classroom management styles. Results indicated that novice teachers were found to be more interventionist than experienced ones.

Another study was conducted by Martin and Baldwin (1996) who investigated differences between the classroom management style of elementary and secondary level teachers via the Inventory of Classroom Management style (ICMS). It was revealed that elementary teachers scored significantly less interventionist than their secondary counterparts in their beliefs toward classroom management.

In a continuation of previous research regarding the nature of classroom management styles, Martin and Yin (1997) searched out whether there were differences between the classroom management style of male and female by utilizing the Attitudes and Beliefs on Classroom Control (ABCC) Inventory (refined form of the ICMS). Result of the study indicated that male teachers were more interventionist on two of the three ABCC subscales (instructional management and behavior management).

Doyle (1986) suggested that one of the major tasks of teaching is to establish and maintain order in the classroom. In the difficulty of this task, classroom discipline and motivating students are much greatest concern of beginning teachers' (Veenman, 1984) and preservice teachers' (Evans & Tribble, 1986) perceived problems. Because managing the classroom effectively with instruction is hard especially for beginning and preservice teachers, the beliefs that preservice teachers have about how to manage their classes are worth of investigation.

Given the significance of classroom management in successful teaching, the purpose of this study was to measure preservice science teachers' perceptions of their classroom management beliefs. The specific research questions to be stated in this study are as follows:

1) What are preservice science teachers' classroom management beliefs?
2) Is there any difference between female and male preservice science teachers regarding their perceptions of classroom management beliefs?
3) Is there any difference between third year and fourth year preservice science teachers regarding their perceptions of classroom management beliefs?

2. METHODOLOGY

2.1 Sample

Data in this study were collected from a total number of 584 preservice science teachers enrolled in science teacher education programs at eight different universities: Middle East Technical University, Pamukkale University, Karadeniz Technical University, Süleyman Demirel University, 19 Mayıs University, Dokuz Eylül University, Hacettepe University, and Balıkesir University. Among the participants, 412 of them were seniors who were ready to be teachers in secondary schools and the remaining were juniors who have not started their teaching practice experience. The sample included 357 females and 227 males.

2.2 Instrument

The participants completed the adapted form of the Attitudes and Beliefs on Classroom Control (ABCC) Inventory (Martin, Yin, & Baldwin, 1998). The ABCC Inventory was translated into Turkish by the researchers. Factor analysis was conducted on the scores of the Turkish version of the ABCC Inventory to substantiate the construct validity.

2.2.1 The Attitudes and Beliefs on Classroom Control (ABCC) Inventory

The ABCC Inventory was developed by Martin et al. (1998) with the purpose of measuring teachers' perceptions of their classroom management beliefs and practices consists of 26 Likert format statements. Within this inventory, classroom management was defined as a multi-faceted construct that includes three broad dimensions: Instructional Management (14 items), People Management (8 items), and Behavior Management (4 items). Each scale was derived to assess a continuum of control ranging from interventionist to interactionalist to non-interventionist. A four-point Likert scale was used. After reverse scoring of some items, high subscale scores indicate a more controlling, interventionist approach while lower scores are indicative of a less controlling belief in that dimension of classroom management style.

A sample item from the Instructional Management subscale is given below:

"I believe the teacher should direct the students' transition from one learning activity to another."

A sample item from the People Management subscale is given below:

"I believe students should create their own daily routines as this fosters the development of responsibility."

2.2.2 Factor Analysis of the Attitudes and Beliefs on Classroom Control (ABCC) Inventory

Factor analysis was performed to confirm underlying dimensions or factors of the ABCC Inventory. Initial principal component analysis with varimax rotation of the 26-items inventory revealed seven factors with eigenvalues greater than one. However, results of a scree plot suggested two-factor structure. Initial principal component analysis calling for two factors was conducted. In two-factor structure, three items (items 6, 7, and 24) were omitted using a factor loading of .30 as the cut-off point and one item (item 17) loaded on the wrong factor. After deleting the four items, subsequent factor analysis for the refinement of the two factor structure retained items weighted highly on their own scale. Three remaining items (items 23, 25, and 26) in the behavioral management scale were retained on the people management scale with high loadings. These two factors corresponded to the instructional and people management scales of the ABCC Inventory, accounting for 29.60% of the variance in the respondents' scores. In the final version of the two-factor structure of the ABCC Inventory, the instructional management scale includes 12-items with loadings ranging from .33 to .64 and the people management scale includes 10-items with loadings ranging from .46 to .58. Table 1 displays final corrected item-total scale correlations and factor loadings.

Table 1. Final Corrected Item-Total Scale Correlations and Factor Loadings

Factor	Item	Item-Total Correlations	Factor 1 Loadings	Factor 2 Loadings
	Item1	.33	.453	
	Item2	.36	.470	
	Item3	.24	.328	
Instructional	Item4	.23	.342	
Management	Item5	.34	.442	
	Item8	.47	.617	
	Item9	.30	.459	
	Item10	.36	.486	
	Item11	.36	.503	
	Item12	.36	.500	
	Item13	.38	.527	
	Item14	.50	.643	
Total Scale α= .71				
	Item15	.43		.545
	Item16	.43		.544
	Item18	.35		.455
	Item19	.35		.557
People	Item20	.31		.492
Management	Item21	.42		.582
	Item22	.46		.545
	Item23	.42		.574
	Item25	.32		.478
	Item26	.47		.576
Total Scale α= .73				

2.2.3 Reliability and Validity of the ABCC Inventory

In order to assess the internal consistency of the ABCC Inventory, Cronbach's alpha coefficient was computed as well corrected item- total correlations. Reliability analysis of the Instructional Manage ment scale produced an alpha of .71. Corrected item-total correlation of all items was .23 and above. The People Management scale produced an alpha of .73. All items had corrected item-total correlations of .31 and above, as seen in Table 1.

For the purpose of obtaining content validity, the adapted version of the ABCC was examined in the light of the three experts' suggestions in this subject matter. As mentioned in the instrumentation section, the construct validity evidence of the inventory was obtained by employing factor analysis and the results revealed the existence of two distinct factors.

3. RESULTS

The respondents' scores on the ABCC Inventory were analyzed by utilizing descriptive statistics. Because of its two distinct dimensionality subsequent analyses were conducted separately on each sub-dimension. Item scores of each sub-dimension were summed to create two separate scale scores for each respondent. Consequently, a scale variable for each subscale was computed by taking the mean of the responses to the items retained each factor. Each scale was derived to assess a continuum of control ranging from interventionist to interactionalist to non-interventionist that reflects the degree of teacher power over students. After reverse scoring of some items, the higher teachers' subscale scores, the more they favor a controlling, interventionist orientation in that dimension of classroom management

In this context, the preservice science teachers indicated more interventionist orientations on the Instructional Management subscale. For the Instructional Management subscale, raw scores ranged from 14 to 48, with a mean score of 36.49 and a standard deviation of 4.54. On the other hand, preservice science teachers indicated less interventionist orientations on the PeopleManagement subscale. For the People Management subscale, raw scores ranged from 10 to 37, with a mean score of 19.30 and a standard deviation of 4.07.

A series of t-tests was conducted to determine gender difference on the two subscales at the significance level .05, as seen in Table 2, there is no statistically significant difference between the mean scores of male and female preservice science teachers' classroom management beliefs on both the Instructional Management and the People Management subscales of the ABCC Inventory (p>.05).

Table 2. T-Test: Female versus Male Preservice Science Teachers on the subscales of the ABCC Inventory

Sub-scale	Gender	N	Mean	SD	Df	*t*-value
Instructional Management	Female	357	36.66	4.35	582	1.548
	Male	227	36.07	4.84		
People Management	Female	357	19.19	3.89	582	-.573
	Male	227	19.39	4.38		

A series of t-tests was conducted to determine differences in classroom management beliefs between the third year and fourth year preservice science teachers at the significance level .05. Table 3 displays that there is no statistically significant difference between the mean scores of the third year and fourth year preservice science teachers' classroom management beliefs on both the Instructional Management and the People Management subscales of the ABCC Inventory (p>.05).

Table 3. T-Test: The Third Year versus Fourth Year Preservice Science Teachers on the subscales of the ABCC Inventory

Sub-scale	Grade	N	Mean	SD	Df	t-value
Instructional Management	3rd	172	36.22	4.39	582	-.742
	4th	412	36.52	4.62		
People Management	3rd	172	18.96	3.89	582	-1.190
	4th	412	19.40	4.16		

4. DISCUSSION AND CONCLUSIONS

Analyses revealed that preservice science teachers expressed strong controlling over their students in terms of instructional management. The instructional Management subscale includes such aspects as monitoring seatwork, structuring daily routines and allocating materials. Related to the extent in which these tasks are managed contributes to the general classroom atmosphere and management style (Martin et al., 1998). In this respect, for example, they believe strongly that students need direction in how to work together, monitoring their learning behavior continuously, allocating classroom materials, assigning seat and, the structure of a daily routine that is organized by the teacher.

On the other hand, preservice science teachers were found to be scored non- interventionist on People Management subscale. The People Management subscale includes the teacher-student relationships in the manner of what teachers believe about students as persons and what teachers do to develop the teacher-student relationship. They give students opportunities to create their own daily routines, to judge the quality of their own work, to pursue their own interests and to select their own seats. This finding is in the contradiction that less interventionist teachers on the People Management revealed more interventionist orientations on the Instructional Management. The reason for these interventionist orientations of the prospective teachers may come to believe that it is the way to be effective teachers by maintaining order and controlling students' instructional activities.

It is interesting to note that no significant differences regarding gender was revealed neither on the Instructional Management nor on the People Management subscales of the ABCC Inventory. Given the difference in the literature, however, males are more controlling, authoritative, assertive, and aggressive than their female counterparts. Martin and Yin (1997) investigated gender differences between the classroom management style of elementary and secondary schools teachers on the subscales of the ABCC Inventory. They found that male teachers were more interventionist on two of the three ABCC subscales: the Instructional Management and Behavior Management.

Similarly, neither the Instructional Management nor the People Management subscales yielded a significant difference on the scores of respondents regarding their grade level. For the senior students completed their practice teaching experience that is the first time to meet the real classroom settings, whereas juniors who have not started their teaching practice experience. In the literature there have been a number of studies that consider how practice teaching experience impacts on beginning teachers' beliefs. Veenman (1984) defined the practice teaching experience as a transition phase in which a "reality shock" is likely when they confront the complexity of the teaching task. With regard to classroom management beliefs Hoy and Woolfolk (1990) found that students teachers were more controlling after completing their practice teaching experience. It appears to be particularly important to analyze the students early experiences in teaching science in order to better understand their impacts on teachers' perceptions of classroom management beliefs.

Given the significance of classroom management in successful teaching, teachers ought to be equipped with effective management principles and strategies that enable them to cope with inappropriate student behavior and sustain student engagement in learning activities. This study will provide insights for undergraduate programs and teacher educators in revision their program or practicum experiences in conceptual understanding of preservice teachers' classroom management for successful teaching.

Much more research should be conducted to explore the effects of classroom management on instructional effectiveness and the impacts of factors that influence teachers' orientations to classroom management. Further research should be required to understand students' perceptions of their teachers' classroom management beliefs as well their teachers within their relationships in the classroom settings to contribute creating more effective educational environment.

REFERENCES

Brophy, J. (1983). Classroom organization and management. Elementary School Journal, 83(4), 265-285.

Brophy, J. (1988). Educating teachers about managing classrooms and students. Teaching and Teacher Education, 4(1), 1-18.

Brophy, J. (1998). Claaroom management as socializing students into clearly articulated roles. Journal of Classroom Interaction, 33(1), 1-4.

Doyle, W. (1986). Classroom organization and management. In M. Wittrock (Ed.), Handbook of research on teaching (3rd ed. p. 392-431). New York: MacMillian.

Emmer, E. T., Evertson, C., & Worsham, M. E. (2000). Classroom management for secondary teachers. (5th ed.). Boston: Allyn and Bacon.

Evans, E. D., & Tribble, M. (1986). Perceived teaching problems, self- efficacy, and commitment to teaching among preservice teachers. Journal of Educational Research, 80(2), 81-85.

Evertson, C.M., Emmer, E.T., Sanford, J.P., & Clements, B. (1983). Improving classroom management. An experiment in elementary school classrooms. Elementary School Journal, 84(2), 173-188.

Glickman, C. D., & Tamashiro, R. T. (1980). Clarifying teachers' beliefs about discipline. Educational Leadership, 37, 459-464.

Hoy, W. K., & Woolfolk, A.E. (1990). Socialization of student teachers. American Educational Research Journal, 27(2), 279-300.

Martin, N. K., & Baldwin, B. (1992, November). Beliefs regarding classroom management style: The differences between pre-service and experienced teachers. Paper presented at the Annual Meeting of the Mid-South Educational Research Association. Knoxville, TN.(ERIC Document Reproduction Service No. ED 355 213)

Martin, N. K., & Baldwin, B. (1993, April). Validation of an inventory of classroom management style: Differences between novice and experienced teachers. Paper presented at the Annual Meeting of the American Educational Research Association, Atlanta, GA. (ERIC Document Reproduction Service No. ED 359 240)

Martin, N. K., & Baldwin, B. (1996, January). Perspectives regarding classroom management style: Differences between elementary and Secondary level teachers. Paper presented at the Annual Meeting of the Southwest Educational Research Association, New Orleans, LA.(ERIC Document Reproduction Service No. ED 393 385)

Martin, N. K., & Yin, Z. (1997, January). Attitudes and beliefs regarding classroom management style: Differences between male & female teachers. Paper presented at the Annual Meeting of the Southwest Educational Research Association, Austin,TX. (ERIC Document Reproduction Service No. ED 404 708)

Martin, N. K., Yin, Z., & Baldwin, B. (1998). Construct validation of the attitudes and beliefs on classroom control inventory. Journal of Classroom Interaction, 33(2), 6-15.

Roelofs, E., and Veenman, S. & Others. (1994). Improving instruction and classroom management behavior in mixed-age classrooms: Results of two improvement studies. Educational Studies, 20(1),105-127.

Veenmann, S. (1984). Perceived problem of beginning teachers. Review of Educational Research, 54(2),143-178.

Zabel, R.H and Zabel, M.K. (1996). Classroom management in context: Orchestrating positive learning environment. Boston: Houghton Mifflin Company.