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Abstract

The main purpose of this study was to determine student teachers' perceptions concerning the effects of class size with regard to the teaching process. A total of 41 fourth-year student teachers participated in the study. A questionnaire including open-ended items was used for data collection. The study revealed that there is a direct relationship between class size and motivation, teaching method used, classroom management, and assessment according to student teachers' views. Although carried with a small sample size, this study is expected to establish a firm basis for the future studies to contribute to teacher training programs, which enhance student teachers teaching abilities in both large and small classes.

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The Perceptions of Student Teachers about the Effects of Class Size With Regard to Effective Teaching Process

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The main purpose of this study was to determine student teachers' perceptions concerning the effects of class size with regard to the teaching process. A total of 41 fourth-year student teachers participated in the study. A questionnaire including open-ended items was used for data collection. The study revealed that there is a direct relationship between class size and motivation, teaching method used, classroom management, and assessment according to student teachers' views. Although carried with a small sample size, this study is expected to establish a firm basis for the future studies to contribute to teacher training programs, which enhance student teachers teaching abilities in both large and small classes. Key Words: Student Teachers, Effective Teaching Strategies, Class Size, and Teacher Education Programs

Introduction

There are many factors which affect the teaching process (Kyriacou, 1997). Among these, class size is considered one of the most important factors. The related literature clearly indicates that the class size and the effects associated with class size should be seriously taken into consideration by educators. In his overview of studies about class size, Podmore (1998) stated that research on class size generally examined the relationships with class size and children's achievement, children's motivation, teacher satisfaction, teacher stress, and the organization.

Classes might be small or large in size. In both cases, it is expected that teachers should teach in an effective way with the students' educational interests and learning experience in mind. The definition of a "small" or a "large" classroom might differ in different contexts. Hargreaves, Galton, and Pell (1998, p. 12), for instance, indicate that there is little agreement about the optimal size of a class. As Galton (1997) notes, at the primary level there are variations in the size of school and of classes.

Research conducted by Galton and Hargreaves (1996) and common sense suggests that smaller classes provide teachers with the opportunity to devote more time to each student with regards to talking about the tasks, giving feedback on work, etc. In this context, the question asked by Croll and Hastings (1996, p. 39) is very critical: "What changes when there are fewer children in a class?" According to Croll and Hastings,

Class size effects cannot be just a matter of the number of children in a class. The number of children must have an effect on other classroom processes and activities which themselves bear more directly on learning. The most frequently offered suggestion is that the reduced number results in each child getting more teacher time... (p. 39)

Time is an important aspect in teaching because teachers need to manage time effectively in order to implement their strategy. However, some researchers emphasize that small classes mean more time for teachers. Therefore, this issue is worth considering in classroom size research.

Blatchford and Mortimore (1994) indicated that there are several concerns about class size reductions. However, as Zahorik, Halbach, Ehrle, and Molnar (2003) indicate, class size reduction alone does not always end up with high student performance. For this, teachers should both acquire and practice effective teaching strategies.

Class Size and Teaching Styles

The numbers of students is one of the factors that determines the teaching methods used in the classrooms by teachers (Küçükahmet, 2000). In their other words, class size inevitably influences teaching styles (Capel, Leask, & Turner, 1995). As mentioned in a study by Bosker (1998), teachers in smaller classes have more opportunities to monitor individual pupils closely; therefore smaller classes provide the opportunity for more individualized instruction and help during practice. Croll and Hastings (1996) also point out that teaching methods and children's experience in the classroom may change in small classes. McKeachie (cited in Dillon & Kokkelenberg, 2002) indicates that while class size may not be significant in courses best suited for lecture style learning, courses that encourage the students to think critically while developing their problem-solving skills are more suitable for a smaller classroom atmosphere. On the other hand, Blatchford, Goldstein, and Mortimore (1998) also suggested that teachers might alter their style of teaching, and tend to use a whole class teaching method when faced with a larger class. This suggests that there might be some differences between teaching in small classes and in large classes.

The literature suggests a possible relationship between class size and teachers motivation strategies. These strategies show considerable variation. Capel et al. (1995) indicates that there is a difference between teaching a large group of -unmotivated and motivated pupils. This is also an important point because motivating students may not always be an easy task especially for student, and newly qualified teachers. Although experienced teachers may easily cope with the competitive and more motivated students, this may pose a problem for newly qualified teachers. For instance, Veenman (1984) investigated beginning teachers' perceived problems. Motivating students was considered to be one of the most challenging problems perceived by beginning teachers in this investigation.

Another effect of class size on teaching may be related to assessment. The findings of the study conducted by Shapson, Wright, Eason, and Fitzgerald (1980) indicate that teachers believe the evaluation process is different in large and small classes. According to the teachers in the Shapson et al. study, teachers working in class sizes consisting of 16 to 23 students were more satisfied because marking took little time and corrections were immediate,; whereas in classes of 30 students marking became more formal, time-consuming, and sometimes delayed. The findings of the study conducted by Korostoff (1998) also support this view. In this study teachers expressed the ease of keeping track of students' achievement, suggesting that the evaluation of students is easier in small classes.

The correlation between class size and student achievement is another important and considerable aspect of the research on class size. Slavin (1989) brings interesting issues to bear regarding class size, indicating that there is no significant correlation between small class size and academic achievement. Capel et al. (1995) also state that class size influences teaching styles in the classrooms, which also effects what can be achieved. Slavin (1989) also stated some important points by reviewing previous researches as follows,

Teachers do change their behavior in small classes, but the changes are relatively subtle and unlikely to make important differences in student achievement. Class size could have a substantial effect on achievement indirectly; there may be highly effective instructional programs that could not be successfully implemented in large classes. However, although this possibility seems logical, at present there is no hard evidence. (p. 106)

On the other hand, Reece and Walker (1997) emphasized a view different from this study in that “when the group is greater than 20 students, such large groups can lead to difficulties in dealing with individuals and so you may have to resort to strategies such as lecture and demonstration” (p. 130).

So far, the arguments on class size show that there are some controversial views on class size and its effects. Furthermore, various research techniques have been implemented regarding issues about class size such as how class size effects teaching, teaching styles, or student achievement. Even though, there are many interesting research findings on this topic, the following have been selected to emphasize the research methods used previously by other researchers.

Research on Class Size

Shapson et al. (1980) investigated the effects of class size on teachers' expectations; the attitudes and opinions of students and teachers, student achievement in reading, mathematics, composition and art, student self-concept, and a variety of classroom process variables such as teacher-pupil interaction and method of instruction. Sixty-two classes of students in the fourth and fifth grades were selected from 11 schools, with teachers who had at least two years of teaching experience. The data were collected with the use of various research techniques such as paper and pencil measures, standardized achievement tests, and a self-concept scale. In addition, teacher-pupil interaction, pupil participation, pupil satisfaction, method of instruction, subject emphasis, physical conditions, use of educational aids, and classroom atmosphere were observed using an observation schedule. Overall, the findings of the study indicated that small classes offer more flexibility to the teachers compared with the larger classes.

Galton and Hargreaves (1996) conducted a study to identify any differences between the strategies and interaction styles used by expert teachers when working with large and small classes. The observation instrument used to collect data in this study was a modified version of the Teacher Record, used in the ORACLE research, where the teachers were observed and interviewed. The study indicated that teachers spent more

time on task, more feedback was given on work in small classes, and less time was spent talking about routine supervision and controlling for assignment etc.

On the other hand, Bennett (1996) designed a study to assess the attitudes and perceptions and experiences of head teachers, parents, chairs of governors, and teachers related to the current situation regarding class size in schools. This study also attempted to determine whether class size effects the students' learning experience and the teachers' classroom practices. According to the teachers, based on data gathered through a questionnaire from 325 primary schools, it was found that class size effects the quality of teaching and learning. Teachers also expressed the following views: smaller classes would provide more attention for individual children and larger classes would make assessment difficult.

In summary, after this brief review of literature on class size, it is apparent that there are various views concerning the effects of class size on the teaching process. This review was highly beneficial because the research findings on class size need further investigation. Additionally, it can be argued that since distinct research techniques were used in these studies, their conclusions regarding class size effects on teaching varied considerably.

The methods used in class size research vary. In other words, there is a diversity of research methods used in these research as also noted by Blatchford, Edmonds, and Martin (2003). Paper and pencil measures of the opinions and attitudes (Shapson et al., 1980), observation and interview (Galton & Hargreaves, 1996; Korosstoff, 1998; Zahorik et al., 2003; Blatchford et al., 2003), questionnaire (Bennett, 1996), and literature review (Slavin, 1989) were the common research methods used in class size research. Researchers who have explored class size have also used experimental methods (Nye, Hedges, & Konstantopoulos, 2001).

The related literature also shows that there has been success in gathering the views of teachers about this issue. For example, a survey was used to gather data from teachers in the study of Hall and Nuttall (1999). On the other hand, Galton (1998) has suggested that case studies involving expert teachers are also needed, which is another point to also be considered by the researchers who attempt to conduct new studies on class size.

All these studies suggest that while some studies were conducted empirically, some of them are qualitative. Even though earlier research indicated that there was no statistical correlation, observation showed that class size did have an effect, while other studies suggested that class size effected the classroom context with regard to teachers' perceptions based on interview data. In addition, Nye et al. (2001) notes that studies on class size have some limitations because the investigations are small scale and short term. In addition, Goldstein and Blatchford (1998) have also indicated that observational studies related to class size have limitations in terms of their poor design and inadequate analysis. On the other hand, some research (Galton & Hargreaves, 1996) point out crucial points about class size effects based on observation and interview. All of this suggests is that the results of the case studies may be incorporated into experimental studies, and also large-scale longitudinal studies can be conducted as Galton (1998) suggests.

In the present study, the research in question developed from the researcher's professional involvement with student teachers, who were training in a teacher education program. During the instruction process, a noticeable issue related to class size emerged

which needed further investigation. The student teachers observed that their perceptions and concerns regarding instructional strategies, namely motivating students, classroom management, teaching methods and techniques, and evaluation and assessment were also related to class size. From this point, it was thought that further investigation was needed, particularly regarding the student teachers perception rather than teachers' perceptions, since teachers' views have tended to dominate this area. It was also thought in this study that teacher education programs should be taking student teachers views into account because it could benefit teacher educators, teacher education programs, future research,.

Aim of this Research

The major aim of the present study was to identify the perceptions of student teachers concerning the effects of class size with regard to the teaching process. Student teachers' views about class size and its effects were investigated with regard to different aspects of the teaching process.

Method

Participants

The participants of the study were student teachers in the last semester of their program, attending Gazi University in Turkey. Student teachers were the only participants taking part in the study because it aims to identify the student teachers' perceptions about class size and its effects. A total of 41 student teachers from three departments of an education faculty of Gazi University in Turkey during the 2003-2004 school year were included in this study. Seven males and thirty-four females were in the sample. The participants were in their third year of their field of study. The main reason for including third year students was that they had enough background about teaching since they completed most of their education courses.

Data Collection

Open-ended questions were developed to gather data about the perceptions of student teachers on class size. Student teachers were asked the following questions in this study:

1. What are your thoughts about class size and its relation with the following:
 - Motivation
 - Teaching methods and techniques
 - Classroom management
 - Evaluation and assessment
2. What are your thoughts about the effects of class size on student achievement in teaching process?
3. What are your thoughts about the effects of class size on behaviors of the teachers in teaching process?

Student teachers answered the open-ended questions by writing. Throughout the administration of the questionnaire, the researcher was present in the classroom in order to assist with any problems or questions which might have arose. The researcher also explained the purpose of the research and the directions of the questionnaire. The researcher ensured that all the data collected will be used only for this research.

Data Analysis

After the participants completed the questionnaire, the researcher gathered the information and created a file for each question, which analyzed and determined the general responses. Sandelowski (1998) states that there is more than one style for reporting the findings of qualitative research, however, content analysis was used in order to analyze open-ended items (Miles & Huberman, 1994; Strauss & Corbin, 1990) in this study since the data were suitable for this type of analysis. First, all responses for each item were typed in to a computer file to see them as a whole. After this process, common points in the responses were found and interesting points that needed further investigation were determined. Open-ended items were very useful because they provided in-depth information related to student teachers' views about class size effects. In addition, quotations from the student teachers' comments about the items related to class size effects were selected to present some interesting views. Briefly, in presenting the data in this study not all the student teachers perceptions had been mentioned, only the most significant views which highlighted the researchers' awareness of student teacher perceptions. In selecting student teachers' response process, the researcher concentrated on the responses explaining the relationship between class size and the issues given in the aims of the study.

Limitations

The study has certain limitations that need to be taken into account. Firstly, the validity and the reliability of the study are limited by the 41 student teacher responses from three different departments. In future research in this area, it can be studied more specifically. Case studies can be carried out for each department with student teachers specializing in different areas. Secondly, the data was collected from students in only one university. Thirdly, the researcher administered the questionnaire to student teachers from only three departments who attend the course called, *Planning and Evaluation of Instruction*. Finally, it should be noted that this study is limited to the purpose of attracting the attention to the importance of obtaining the views of student teachers with regard to class size rather than giving a general perspective about this important issue .

Findings

The first question asked to the student teachers was, "What are your thoughts about class size and any of the following: motivation, teaching methods and techniques, classroom management, evaluation, and assessment." The respondents were also asked how they came to their conclusions.

Class Size and Motivation

Although 2 out of the 41 student teachers made no comment about the issue of relationship between the class size and motivation levels, and 38 of them acknowledged the presence of a relationship between them. These 38 student teachers argued that the most difficult part of teaching in large classes was the motivation. One participant said, "Motivation of 20 children is easier than motivation of 40 children because each child is motivated differently." Another student teacher stated that,

Knowing how to motivate the students is very important. Motivation of students requires knowing individual characteristics of each student. In the case of less crowded classes, students' needs could be more easily recognized and it would be easier for teachers to motivate them.

This suggests that student teachers in this study think that it is easier to motivate smaller classes and understanding individual differences between the students is important. In other words, student teachers' views show that they strongly believe that there is a relationship between class size and motivational strategies. According to study findings of Blatchford et al. (2003), children in large classes are more likely to be off task, particularly in terms of not attending to the teacher and not attending to their work when on their own. Capel et al. (1995), for example, also noted that there are some differences between teaching in motivated and unmotivated classrooms, as mentioned earlier in this paper. On the other hand, only one student teacher argued that there was not a relationship between class size and motivation and that it was possible to motivate students in all conditions. This finding indicates that student teachers might have different point of view than experienced teachers do regarding class size and its effects. The student teachers and experienced teachers might think on the issue differently since student teachers have not begun their real teaching in the classrooms.

Class Size and Teaching Methods

Concerning the relationship between class size and teaching methods, the majority of the student teachers emphasized that there was an influence of the class size in the type of teaching method implemented. Two participants did not provide an answer to this item and two participants suggested that there is no relationship between class size and teaching methods. With the exception of these four respondents, the remaining student teachers all indicated that there is a relationship between class size and teaching methods.

Several researches on this issue indicate that there is a relationship between class size and teaching methods. As mentioned earlier, related literature also indicates that teachers might change their teaching styles in large or small classes (Blatchford et al., 1998; Shapson et al., 1980). This point is also stressed by most of the student teachers in the present study. On the other hand, Blatchford and Mortimore (1994) also indicated based on the literature that reducing class size has little effect on teachers' methods and styles. In other words, they argued that teachers do not change their methods of teaching

when faced with smaller classes. This is pointed out by only several student teachers in our study.

Class Size and Classroom Management

In terms of the relationship between class size and classroom management, almost all of the participants expressed the following views: there was a relationship between class size and classroom management, and managing large classes is always more difficult than managing small classes. In their review, Blatchford and Mortimore (1994) also stated that classroom management of behavior is easier in smaller classes. Additionally, one student teacher regarded classroom management as more related to the knowledge and skills of the teacher. Some of the views of the student teachers related to this aspect as follows:

- If the class size is smaller, the possibility of encountering classroom management difficulties decreases.
- It is easier to deal with students in small classes because it enables the teacher to manage the classroom more effectively.
- It might be difficult to manage large size classes.

These findings seem to be consistent with those in the literature (see Shapson et al., 1980). For instance, the study findings of Zahorik et al. (2003) indicate that successful teachers establish clear rules, routines, and reward systems in their classrooms, and they do not allow students to distract the class. Additionally, in the study of Blatchford et al. (2003), the results from systematic observations showed that children in large classes are more likely to be off task, particularly in terms of not paying attention to the teacher and not focusing on their work when working on their own..

On the other hand, several student teachers stated different viewpoints on this issue. One participant stated that, “classroom management depends on teachers’ skills even though doing this seems much easier in small size class.” Similarly, another student teacher stated that “it is good to have small size class for teachers, but I do not think this would effect classroom management strategies of teachers directly.”

Class Size and Assessment

Concerning the effects of class size on the knowledge of how students learn, student teachers often argued the following views: firstly, classrooms should not be too large in size because they need to gain knowledge on how students learn; secondly, teachers encounter difficulties to make assessments regarding this issue in large classes and lastly, large classes limit the use of distinct evaluation techniques. One participant stated that,

- In small sized classes, evaluation of student achievement appears easier.
- It might be difficult to apply all kinds of evaluation techniques in larger classes.

- In larger classes it is not only more difficult to observe the children who lack understanding of the subject but also those who do understand.

These findings seem to be consistent with the findings of other studies. Shapson et al. (1980), for example, also emphasized that marking becomes more formal and time consuming in large classes. On the other hand, two student teachers stated that class size did not influence student evaluation in the present study. One of them stated that, “class size might not be an important factor in every phase of evaluation. In fact, I do not think class size effects the evaluation of student directly.” This finding of the study shows that student teachers have different views from experienced teachers in some cases, even though some researchers (see Bennett, 1996) indicate in their research that teachers believe that class size has an effect on the quality of teaching and learning.

Class Size and Student Achievement

The second question in the study was, “What are your thoughts about the effects of class size on student achievement in teaching process? State your reasons.” Seven student teachers did not answer this item. Thirty-four participants argued that student achievement would decrease as a result of devoting less time to students in large classes. The following three comments represent the thinking of the student teachers.

- “For those students who have limited attention, class size has critical effects.”
- “Students can be successful when individual attention is shown to them. In large classes, it is very possible to neglect some students. Thus, it will negatively effect their achievement.”
- “In large classes teachers spend more time managing the classroom instead of providing teaching, which might effect students’ achievement.”

As seen from the comments of some student teachers, class size has a considerable effect on achievement. This is also pointed out by Kiger (2002) who indicated that smaller classes effect student achievement by individualizing the teaching and learning process. Literature review made in this study also indicated that this view is shared by several researchers in the area. We have to stress the fact that the student teachers have limited teaching experience. Therefore their views are open to change when they face real classroom atmosphere.

Class Size and Teacher Behavior

The third and last question in the study was, “What are your thoughts about the effects of class size on behaviors of the teachers in teaching process? State your reasons.” Student teachers answered this item clearly indicating that in less crowded classrooms, the behaviors of teachers improved. Below are some of the participants’ responses.

- “Establishing good relationships with individual students and also with the whole class might be more difficult in large sized classes.”

- “In large classes teachers have difficulties regarding to issues such as creating good relationships with students, motivating them and using time effectively which might effect their behavior towards other children.”
- “It might be easy for teachers to apply activities and activity based learning in small sized classes.”

Some of the participants believed that in small classes, teachers would become less tired, more productive, and develop more positive interactions and effective communication with students. They also stated that teachers of small classes would be well motivated to teach. Additionally, the participants argued that teachers’ attitudes and behaviors towards classroom management would be different in large classes.

Although several distinct views about this point were expressed in literature, the participants of this study unanimously stated that teachers should behave positively and productively. On the other hand, teachers do not necessarily change their behavior when they move to smaller classes. An investigation has been made to ascertain whether teachers change their behavior in large and small classes in the study conducted by Hargreaves et al. (1998). The results suggested that teacher-pupil interaction in smaller classes was consistent with the features of effective teaching including extended adult-child interactions, a good positive atmosphere, etc. When considering the issue of effective teaching, every aspect needs to be considered. The research conducted by Finn, Pannozzo, and Achilles (2003) emphasizes this issue, which indicates that smaller classes effects teacher morale and enjoyment of teaching should be taken into account when further research is conducted in this area.

Conclusion

This review of the literature and research project both indicate that class size is an important dimension in planning and realizing effective teaching. Studies on class size have reported different findings, which suggest that there is a positive correlation between increasing class size and pupil progress, and there is also a negative correlation between these two concepts (Galton, 1994, pp. 94-95). The student teachers’ views also supported this assumption in this study. In a sense, to train student teachers on this issue is important. Even though in this research student teachers seemed to have well formed opinions about the matter, all teacher training programs should implement this consideration in the teaching methods courses. Further research into the relationship between class size and new teachers could be useful, such as training teachers to teach effectively in large or small classrooms settings. This would be the first step in overcoming the difficulty of teaching large classes. The findings of the study conducted by Hargreaves et al. (1998) also suggests that teachers of large classes also have some difficulties in maximizing the opportunities offered in the small class setting because they are not used to dealing with small numbers. Another result of reviewing related literature on this present study is that various research techniques were used in the studies regarding class size. Observation, interview, questionnaire, systematic observation, and literature review were the common research methods used in the class size research reviewed.

Even though, the statistical relationship is not addressed for this study, analysis results showed that student teachers' responses reflected that there is a close relationship between class size and motivation, teaching methods used, classroom management, and assessment. For them, the use of various teaching methods was a viable way in less crowded classes and in such classes; students could be motivated more easily. Thus, effective classroom management can be established in small-size classes. Furthermore, distinct techniques of assessment can be easily employed in such classes. These views of student teachers are consistent with those of experienced teachers as stated in other studies.

Moreover, the majority of the student teachers who participated in the present study have indicated that a close relationship exists between class size and student achievement, and also between class size and teacher behaviors. Given the fact that findings of the other studies indicated no change in the behaviors of the teachers in relation to class size, it may be argued that there seem to be differences between the views of student teachers on class size and their teaching practices.

If we summarize, the findings of this present study suggest that this issue requires further investigation. In doing this, the research could reveal the student teachers views more clearly and emphasize the important points which need to be addressed and considered by teacher training programs.

Recommendations

This study provided us with some information about class size and its effects on teaching processes based on student teachers' views. First, student teachers' views should be considered in the context of research on class size because they state some important points on this issue. In this sense, more research is needed. Therefore, new studies can be conducted which examine different subject areas. It may be argued that class size affects on achievement may differ.

Secondly, qualitative research techniques are observed to be used more frequently in recent years. However, using both qualitative and quantitative research techniques may provide us with more detailed information on the issue. It can be concluded that both quantitative and qualitative data is needed in the studies to be conducted in the future.

Thirdly, the student teachers should also be trained regarding how to teach effectively, and which teaching techniques should be employed in both large and small classrooms, since they have to be prepared for teaching in both cases. This is an important point because while many researches suggest that teaching is easier for teachers in smaller classes, they might encounter some difficulties if they do not have enough knowledge and skills about how to teach in a small class environment. In this sense, teacher education programs have crucial responsibilities. Training student teachers in a wider range of teaching styles could be useful.

Within teacher training programs student teachers need to be equipped with the teaching strategies in order to effectively teach both small and larger classes. The student teachers should not only know about the teaching strategies, but they should also be acquainted with putting them into practice in smaller or large classes. Therefore, if this issue is not addressed adequately it may affect their perception of the teaching profession.

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