Relationships Between Interaction in Class and Pupils' Achievements

Refik Çela

MA Ed., Education specialist in Albania and Lecturer at Social Sciences Faculty of Tirana University
E-mail: refikcela@yahoo.com

Abstract *Teaching as a process where we gain knowledge, we develop abilities and form attitudes do not understand without teacher- pupil and pupil- pupil interaction in class, that reflects directly on pupils' achievements. According to teachers and pupils research has concluded that in primary schools predominates high level of teacher- pupil and pupil- pupil interaction in class, and that has a positive influence on pupils academic, and non academic achievements. The relationship between teacher- pupil and pupil- pupil interaction in class and pupils academic achievements and non academic or social achievements variables is a significant and important relationship.*

1. Introduction

It is assumed that teacher- pupil and pupil- pupil interaction in class reflects on pupils achievements. The level of teacher- pupil and pupil- pupil interaction in class is related undisputedly with strategies, methods and techniques that different teachers choose to make his or her teaching. What is the meaning of interaction in class? Interaction as a process is been developed between two pairs, between the teacher and the pupils, but also between the pupils themselves. Interaction means active participation of pupils in construction of knowledge, active participation in working pairs, active participation in working groups, active and effective participation in compilation and applying of teaching modules, curricular projects, and different teaching activities. Interaction means questioning as an effective teaching method that we may find in a class climate interaction, means discussion in class for different teaching issues that help pupils to develop critical thinking abilities, problem solving abilities, analysis, synthesis, and assessment abilities. Interaction means measurement of pupil's achievements and assessment of them using advanced techniques for knowledge and ability assessment, but means also self- assessment of pupils that help them to develop self- assessment abilities of them. This dilemma of the relationships between level of teacher- pupil and pupil- pupil interaction and pupils' achievements is the premise of this research.

2. Methodology of Research

Main methods used in research on relationships between teacher- pupil and pupil- pupil interaction in class with pupils' academic and non academic or social achievements are quantitative, but we have used qualitative as well. In this research we have studied variables on their directly relationships with data generated by instruments implementation that are structured questionnaire for pupils and for teachers. Although to increase reliability of our research, we have used qualitative method that are semi structured interview applied with specialists of regional educational departments.

2.1 Instruments

The main instrument of research, on base of that we made statistical quantitative analysis, was structured questionnaire. We used two questionnaires to gain data: a structured questionnaire with pupils and a structured questionnaire with teachers. There were five dimensions on teacher structured questionnaire: (1) class climate, (2) teacher- pupil and pupil- pupil interaction in class and pupils' non academic or social achievements, (3) teacher- pupil and pupil- pupil interaction in class with pupil's academic achievements, (4) teacher professional development, (5) curriculum.

2.2 Quantitative analysis

Since the research for relationships between teacher- pupil and pupil- pupil interaction in class with pupil's academic and non academic or social achievements was mainly quantitative, statistical quantitative analysis was primary. In advance of other statistical analysis we derived frequencies of variables, so we determined statistical constants: mean, median, mode, standard deviation, variance, minimum and maximum, as well as detailed data related to derived values in

numerical and in percentage form. To find out the value of statistical significance, or with other word to verify if the relationship between teacher- pupil and pupil- pupil interaction in class with pupils' academic and non academic or social achievements is significant or non significant we used cross tabulation through chi square test, where with"Pearson Chi Square" and "Phi and Cramer's V" constant values we argued the relationship between variables in study. We used correlation to find out the strength and the direction of relationship between two main variables, through Pearson coefficient value. To confirm also the strength and the direction of relationship or the level of association between two main variables, we used bivariate regression. From this analysis, as well as confirmation of statistical significance value for relationship between two main variables, we derived another important indicator, "R Square". To deepen analysis, based on "R Square" value derived from bivariate regression, we applied multivariate regression as well. The aim to use multivariate regression analysis was to verify the effect of other variables on dependent variable's variance: (1) class climate, (2) teacher professional development, and (3) curriculum.

2.3 Qualitative analysis

To apply qualitative method we used semi structured interviews from which derived qualitative data. We used typology to evaluate the answers of the interviews. We used a systemic analysis to evaluate interviews's data that served to support study work.

3. Findings

The main source of data, that served as a base for quantitative statistical analysis there were structured questionnaires with pupils and teachers, that we used on the population of pupils and teachers in six counties in the country.

3.1 Frequencies of main variables' values

Interaction in class means a class where pupils involve in teaching process and where they sustain each others and that supposed to influence positively on pupils' academic and non academic or social achievements; or a class where pupils work individually that supposed to influence negatively on pupils' academic and non academic or social achievements. Below there is distribution of interaction in class with impact on pupils' social achievements variable values- experimental group.

Table 1: Distribution of interaction in class with impact on pupil's social achievements variable values - experimental group.

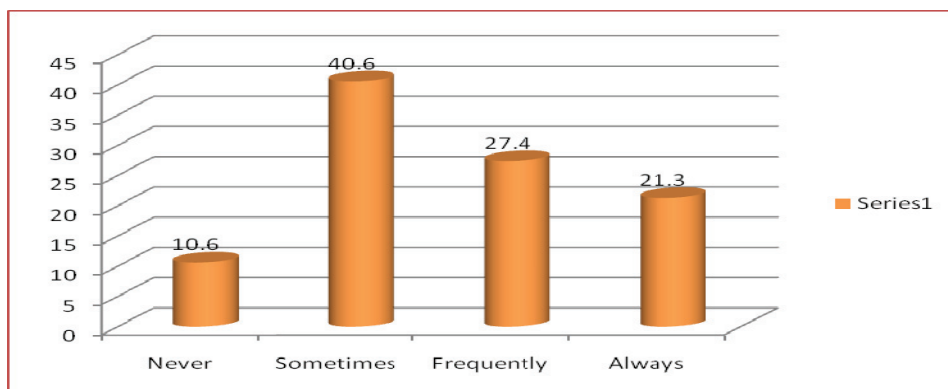| No	Distribution of interaction in class with impact on pupils social achievements	Frequencies	%
1	Never	33	10.60
2	Sometimes	126	40.60
3	Frequently	85	27.40
4	Always	66	21.30
	Total	310	100.00

Chart 1: Distribution of interaction in class with impact on pupil's social achievements variable values - experimental group in %.

Almost 49% of respondents- pupils of IV, V, VI grades, of primary schools- experimental group, report that there is high level of interaction in class with impact on pupils' social achievements in their classes frequently or always. Meanwhile about 51% of them report that there is high level of interaction in class with impact on pupils' social achievements in their classes never or sometimes. Almost 30% of respondents' pupils of IV, V, VI grades, of primary schools- control group, report that there is high level of interaction in class with impact on pupils' social achievements in their classes frequently or always. Meanwhile about 70% of them report that there is high level of interaction in class with impact on pupils' social achievements in their classes never or sometimes. Although we see a big difference in distribution of interaction in class with impact on pupils social achievements variable values for experimental group 49% versus 51%, compared to control group 30% versus 70%, again we see the same tendency of values distribution. Predominates positivist, constructivist climate in IV, V, VI grades, as well as existence of instructive, passive climate that in control group reports to be in higher figures. In the majority of IV, V, VI grades of primary schools predominates teacher's individualism work versus inclusion of them, versus cooperation and collaboration between pupils that influences negatively on social formation of pupils.
Below there is distribution of interaction in class with impact on pupils' academic achievements variable values - experimental group.

Table 2: Distribution of interaction in class with impact on pupil's academic achievements variable values - experimental group.

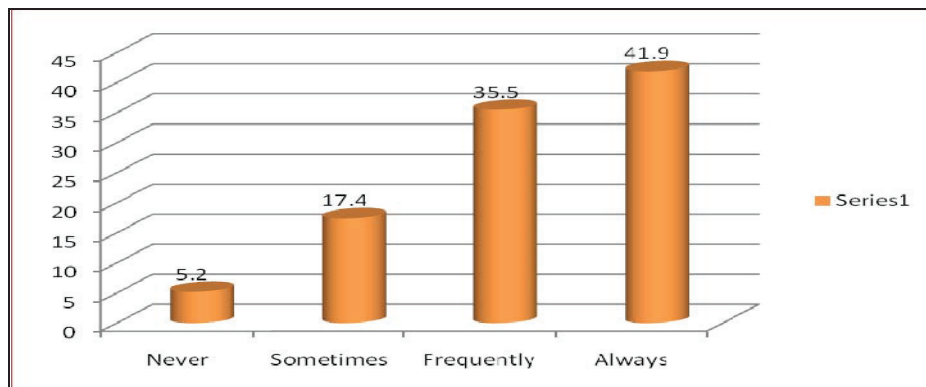| No	Interaction in class with impact on pupils academic achievements	Frequencies	%
1	Never	16	5.20
2	Sometimes	54	17.40
3	Frequently	110	35.50
4	Always	130	41.90
	Total	**310**	100.00

Chart 2: Distribution of interaction in class with impact on pupils academic achievements variable values - experimental group in %

Almost 77% of respondents' pupils of IV, V, VI grades, of primary schools- experimental group, report that there is high level of interaction with impact on academic achievements in their classes frequently or always. Meanwhile about 23% of them report that there is high level of interaction with impact on academic achievements in their classes never or sometimes. Almost 84% of respondents' pupils of IV, V, VI grades, of primary schools- control group, report that there is high level of interaction with impact on academic achievements in their classes frequently or always. Meanwhile about 16% of them report that there is high level of interaction with impact on academic achievements in their classes never or sometimes. Although we see a difference in distribution of interaction in class with impact on pupils' academic achievements variable values for experimental group 77% versus 23%, compared to control group 84% versus 16%, again we see the same tendency of values distribution. Predominates positivist, constructivist climate in IV, V, VI grades, as well as existence of instructive, passive climate that in control group reports to be in higher figures. In IV, V, VI grades of primary schools predominates high level of teacher- pupil and pupil- pupil interaction that influences positively on their academic achievements, as well as the presence of low level of teacher- pupil and pupil- pupil interaction that influences

negatively on their academic achievements. Comparing distribution of interaction in class with impact on pupils' social achievements variable values generated by two groups of teachers experimental and control, result that we have almost the same tendency and the same reported figures. So, 87% of teachers' experimental group and 82% of teachers' control group state that high level of interaction with directly impact on social achievements of pupils repeats frequently or always; meanwhile 13% of teachers' experimental group and 18% of teachers' control group state that high level of interaction with directly impact on social achievements in their classes repeats never or sometimes.

3.2 Cross tabulation, Chi square test

Based on chi square test results, statistical significance value derived from analysis made for "Pearson Chi Square" and for "Phi and Cramer's V" is .006. Value .006, that is to say 0,006 means that 0,006% is the possibility that the relationship between two variables to be by chance. With other words the relationship between two variables teacher- pupil and pupil- pupil interaction with pupils achievements is 94% significant, and is 6% probable that this relationship to be by chance. Another result we took on cross tabulation through teacher- pupil and pupil- pupil interaction with pupils' social achievements for pupils' experimental group. On this case statistical significance value is .001. This means that in this case the relationship between two variables: teacher- pupil and pupil- pupil interaction with pupils' social achievements is 99.9% significant and 0.1% probable that this relationship to be by chance. Concluding we may say that the relationship between level of interaction in class and pupils' academic achievements variables is a significant relationship, strong one and with reciprocal influence. The relationship between level of interaction in class and pupils' social achievements variables is a significant relationship, strong one and with reciprocal influence too.

3.3 Correlation analysis

Generated data from correlation analysis for pupils' experimental group gave us Pearson correlation coefficient value equally 0.041. This value means that there is a correlation between teacher- pupil and pupil- pupil interaction with pupils' academic achievements variables near minimum value. This means also that there is a weak relationship between two variables in the study. Direction of correlation is positive linear. This means that increasing of values of one variable would result in increasing of values of the other variable as well. But the amount of influence is not considerable, even is near minimum value. As a conclusion we may say that although main tendency of positive linear correlation, the level of teacher- pupil and pupil- pupil interaction do not have considerable indication in pupils' achievements. If we refer data generated by correlation analyses for pupils' control group, based on Pearson Test, we would get Pearson correlation coefficient value equally 0.090. This value, apart from value differences compared to experimental group, means that there is a correlation between teacher- pupil and pupil- pupil interaction with pupils' academic achievements variables near minimum value too. What about the value and direction of correlation between teacher- pupil and pupil- pupil interaction with pupil's social achievements variables? If we refer data generated by correlation analysis for pupils' experimental group, based on Pearson Test, we would get Pearson correlation coefficient value equally 0.105. This value, apart from value differences compared to correlation between teacher- pupil and pupil- pupil interaction with pupils academic achievements variables, means that there is a correlation near minimum value between teacher- pupil and pupil- pupil interaction with pupil's social achievements variables. This means that there is a weak relationship between two variables in the study. Direction of correlation is positive linear in this case too. The value of Pearson correlation coefficient is 0.031 in the control group too, that indicates the tendency of relationships between variables. As a conclusion we may say that correlation between level of interaction in class and academic and pupil social achievements variables is a minimum correlation. Thus, the level of interaction in class has a minimum influence on pupils' academic and social achievements.

3.4 Regression analysis

To explore the relationship between teacher- pupil and pupil- pupil interaction with pupils' academic and social achievements, we used regression analysis in two forms: (1) bivariate regression, and (2) multivariate regression. Data generated from regressive analysis for the relationship between teacher- pupil and pupil- pupil interaction with pupils' academic achievements variables for pupils' experimental group gave us "R Square " value .000, that means that about 0% of variance on pupils' academic achievements dependent variable is caused by teacher- pupil and pupil- pupil interaction independent variable. Meantime, data generated from regressive analysis for the relationship between teacher- pupil and pupil- pupil interaction with pupils academic achievements variables for pupils' control group gave us

"R Square "value .008, that means that only 0.8% of variance on pupils' academic achievements dependent variable is caused by teacher- pupil and pupil- pupil interaction independent variable, meanwhile the other part of variance is caused by other unknown or hidden variables. Regressive analysis for the relationship between teacher- pupil and pupil- pupil interaction with pupils' social achievements variables for pupils' experimental group gave us "R Square "value .011, that means that about1.1% of variance on pupils' social achievements dependent variable is caused by teacher- pupil and pupil- pupil interaction independent variable, meanwhile the other part of variance is caused by other unknown or hidden variables. Meantime for pupils' control group gave us "R Square " value .031, that means that only 3.1% of variance on pupils' social achievements dependent variable is caused by teacher- pupil and pupil- pupil interaction independent variable, meanwhile the other part of variance is caused by other unknown or hidden variables. Concluding for bivariate analysis we may say that although indication of level of interaction in class variable on academic and social achievements variable is low, this is according to correlation analysis, based on regressive analyses result that 0.8% of variance on pupils' academic and social achievements is caused by interaction in class variable. Meanwhile percentage of variance on social achievements that is caused by level of interaction in class varies from 1.1- 3.1%.

We involved in multivariate analyses except teacher- pupil and pupil- pupil interaction with pupils academic achievements variables, three other variables to find out their indication on dependent variable: (1) class climate, (2) interaction in class with impact on social achievements, (3) interaction in class with impact on academic achievements. Based on coefficients analysis result that "R Square" is .039, that means that only 3.9% of variance on pupils' academic achievements is caused by by teacher- pupil and pupil- pupil interaction variable + new variables added in analysis: (1) class climate, (2) interaction in class with impact on social achievements, (3) interaction in class with impact on academic achievements, meantime 96.1% of variance is caused by other variables that are not part of this study. Based on multivariate regression coefficients for pupils' control group result that "R Square" is .066, that means that only 6.6% of variance on pupils' academic achievements is caused by by teacher- pupil and pupil- pupil interaction variable + new variables added in analysis: (1) class climate,(2) interaction in class with impact on social achievements, (3) interaction in class with impact on academic achievements, meantime 93.3% of variance is caused by other variables that are not part of this study. Multivariate analysis for the relationships between teacher- pupil and pupil- pupil interaction with pupils social achievements variables gave us "R Square" value .077, that means that only 7.7% of variance on pupils' social achievements is caused by by teacher- pupil and pupil- pupil interaction variable + new variables added in analysis: (1) class climate,(2) interaction in class with impact on social achievements, (3) interaction in class with impact on academic achievements, meantime 92.3% of variance is caused by other variables that are not part of this study. Multivariate analysis for the relationships between variables: teacher- pupil and pupil- pupil interaction with pupils social achievements, for pupils- control group, gave us "R Square" value .032, that means that only 3.2% of variance on pupils social achievements is caused by by teacher- pupil and pupil- pupil interaction variable + new variables added in analysis: (1) class climate,(2) interaction in class with impact on social achievements, (3) interaction in class with impact on academic achievements, meantime 92.3% of variance is caused by other variables that are not part of this study. As a conclusion from multivariate analysis we may say that percentage of variance caused by independent variables: (1) class climate, (2) interaction in class with impact on social achievements, (3) interaction in class with impact on academic achievements on variables: academic and social achievements varies from 3.35 to 6.6% on academic achievements, and from 3.25 to 7.7% on non academic or social achievements.
Comparing results from qualitative analysis with results from qualitative analysis, we may say that qualitative instruments' findings support quantitative ones.

4. Conclusions

- Generally in IV, V,VI grades of primary schools predominates constructivist, positivist, inclusive, and cooperative climate, but there is also instructivist climate, where the teacher is in the center, and where the pupil is a little involved in restructuring of knowledges, abilities, and atittudes.
- According to teachers, that supported by qualitative data as well, in the majority of IV, V, VI grades of primary schools predominates inclusive and cooperative teaching that influences positively on social formation of pupils.
- Generally in IV, V,VI grades of primary schools predominates high level of teacher- pupil and pupil- pupil interaction that indicates positively on their academic achievements, but there is also the presence of low level of o teacher- pupil and pupil- pupil interaction that indicates negatively on their academic achievements.
- The relation between teacher- pupil and pupil- pupil interaction in class with pupils' academic achievements is

a significant and important relation, and there is very few possibilities that this relationship come by chance.

- The relation between teacher- pupil and pupil- pupil interaction in class with pupils' non academic or social achievements is a significant and important relation, and there are fewer possibilities that this relationship come by chance

- The correlation between teacher- pupil and pupil- pupil interaction in class with pupils' academic and non academic or social achievements variables is a minimum correlation, that means that the level of interaction in class has a minimum influence on pupils' academic and non academic or social achievements

- The generated data by bivariate regressive analysis for the variance on the pupil's academic and non academic or social achievements caused by teacher- pupil and pupil- pupil interaction in class variable indicates that there is a low caused variance.

- Percentage of variance caused by indication of independent variables: (1) class climate, (2) interaction in class with impact on social achievements, (3) interaction in class with impact on academic achievements there is also a low value

5. Recommendations

- The teachers must create in their teaching a cooperation, collaboration, and inclusive climate of pupils in class that would increase pupil's participation in the learning process and would also support their achievements.

- The teachers must design a teacher- pupil and pupil- pupil interactive environment in their teaching, that would influence on pupils' working groups education, cooperation, coo participation, and responsibilities' sharing.

- The teachers must design a teacher- pupil and pupil- pupil interactive environment in their teaching that would influence on pupils' academic achievements.

- The teachers must design a teacher- pupil and pupil- pupil interactive environment in their teaching that would influence on pupils' non academic or social achievements.

- Responsible educational institutions for professional development of teachers, central and local, would compile and use long- term, median- term, and short- term programmes for professional development of teachers, including class climate and interaction in class programmes.

- University teachers'' faculties must assess the report knowledge- ability in the curriculum of initial training of teachers meaning usage of a harmonically report through them including knowledge and ability for class climate, and teacher- pupil and pupil- pupil interaction in class that would influence on the quality increasing of teacher initial training

References

Alig-Mielcarek, A. J. J, Hoy, W. K. (2005). Instructional leadership: Its nature, meaning, and influence. Pearson Education, Inc. Boston, Sh. B. A.

Bottoms, G & O, Neill, K. (2001). *Learning to teach. Handbook of educational psycology*. New York: Macmillan Cross, K. P. (2001). *Motivation: Er…Will that be on the test*? The Cross papers Number 5. League for Innovation in the Community College.

Di Gropello, E. (2006). *A comparative analysis of school-based management in Central America.* 35036. World Bank Working Paper no. 72, f. 53.

. Di Paola, F. M., Hoy, K. W. (2008). *Principal Improving Instruction*. Pearson Education, Sh. B. A.

Eschenmann, K. (1991). *Student Perceptions of Teaching Style in The Health Occupation Classroom.* Journal of Health Occupations Education, 6(1).

Fullan, M. G. (1991). *The new meaning of educational change*. New York: Teachers college press.

Gardner, H. (2003). *Dimensionet e Mendjes*. Insituti i Studimeve Pedagogjike. Tiranë.

Gerald C.Ubben, Larry W. Hughes, Cynthia J. Norries (2007). *The principal- Creative leadership for excellence in schools.* Pearson Education, Sh. B. A.

Hallinger, P & Murphy, J. (1985). *Assessing the instructional management behaviour of principals*. Elementary school journal.

Hallinger, P. and Heck. R. H (1999). *Exploring the Principal's Contribution to School Effectiveness*. School Effectiveness and School Improvement. Vol.9, No. 2, f. 175.

Hanny, R. (1987). *Use, but don't abuse, the principals of instructional effectiveness*. The Ckearing House.

Hoy, A. W., & Hoy, W. K. (2006). *Instructional leadership: A learning- centered guide*. Boston: Allyn and Bacon. Inc. Review, Spring 2008.

Leithwood, K. & Jantzi, D. (1999). *Transformational School Leadership Effects: A Replication*. School Effectiveness and School Improvement. Vol.10, No.4, f.453.

Marzano, R. J., & Marzano, J. S. (2008). *Dimensions of Learning.* Michigan Department of Education. Tending to the Spirit/Culture.

Retrieved January 11, 2009.

Payne, R. K., PhD. (2003). *A Framework for understanding Poverty.* Highlands, Texas: Aha! Process Inc., (Original work published 1996).

Picciano, A. G. (2006). *Educational leadership and planning for technology*. 4th Edition. Pearson Prentice Hall.

Project in Albania (1998). *HRE in pegadogical universities*. [Brochure]. Tiranë.

(QTKA) Qendra Kombëtare e Trajnimit dhe Kualifikimit (2005). *Mësimdhënia me në Qendër Nxënësin.* Tiranë.

Robertson, P. J. dhe Kerri L. B. (1998). *Improving Schools Through School-Based Management: An Examination of the Process of Change*. School Effectiveness and School Improvement. Vol.9, No.1, f.29.

RWCT Project (1999). *Critical thinking across reading and writing*. [Digital library version]. Retrieved from: http://www.criticalthinkinginternational.org/programs?id=13

Senge, P., Nelda Cambron- McCabe, N., Luca, T., Smith, Dutton, J. B., Kleiner, A. (1999) *Shkollat e të Nxënit*. Instituti i Studimeve Pedagogjike. Tiranë.

Vollansky, A. and Bar-Elli, D.(1996). *In Israel / Moving Toward Equitable School-Based Management. Site-Based Management*: *Making It Work*. Volume 53, No 4. f.60-62.

Vroom, V. H. (1995). *Work and Motivation.p.75-89.* San Francisco: Jossey-Bass Inc., (Original work published 1964).

Weber, J. (1996). *Leading the instructional program*. In S. Smith & P. Piele, School leadership.Eugene Clearing House of Management.