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ABSTRACT

In a microsupervision workshop experiment designed to investigate group differences in acquiring an indirect style of supervisory conference behavior, 18 elementary school inservice teachers were randomly assigned to a video-modeling, written-modeling and performance-feedback treatment or non-treatment. Criterion performances were the frequency and quality of the supervisory conference behavior used on two separate microsupervision sessions and on five observational instruments. Results showed: (1) experimental microsupervision did not yield significantly higher nor more varied performance frequencies than the control group; (2) the reliability trial results for the conference and teaching category systems were considered highly satisfactory; and (3) a high positive and negative relationship between teaching and supervisory conference behavior in the experimental group was attained. A discussion is presented on the findings, and on the linear relationship between personal and professional characteristics of teachers. A stepwise multiple regression analysis of a teaching behavior by supervisory conference ratio factors indicated that the teaching behavior, "Data Recall," was significantly predicted by several supervision ratio factors. (Author/JD)

ABSTRACT

MICROSUPERVISION AS A METHOD FOR TEACHER EDUCATION

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In a microsupervision workshop experiment designed to investigate group differences in acquiring an indirect style of supervisory conference behaviour, 18 elementary school in-service teachers were randomly assigned to a video-modelling, written-modelling and performance feedback - treatment or non-treatment. Criterion performances were the frequency and quality of the supervisory conference behaviour used on two separate microsupervision sessions and - on five observational instruments. Results of the six main hypotheses showed: firstly, that experimental microsupervision did not yield significantly higher nor varied performance frecuencies than control group. Secondly, the reliability trial results for the conference and teaching category systems were considered highly satisfactory. Thirdly, a high positive and negative relationship between teaching and supervisory conference behaviour in the experimental - group was obtained. Fourthly, the initial 49 supervision conference observational ratios were reduced to a new structure of 12 and 11 factors. Fifthly, a lineal relation hip - between personal and professional characteristics of teachers with Flanders I/D ratio could not be accepted. Finally, stepwise multiple regression analysis of a teaching - behaviour by supervisory conference ratio factors has shown that the teaching behaviour "Data Recall" was significantly predicted by several supervision ratio factors.

INTRODUCTION

The purposes of this study are twofold. First of all, to analyse and evaluate the nature and development of microteaching, and secondly, to examine the effects of a microsupervision workshop experiment in the supervisory conference behaviour of primary school tutors.

Microteaching is considered in its origin as a methodological alternative to the teaching practice period of the Stanford program entitled Secondary Teacher Education Program (STEP). The successive microteaching clinics allowed the diagnosis, training and evaluation of "interns" teaching skills, being the 1966 microteaching clinic format the one that synthesizes the concept, procedure and techniques of microteaching (Allen, 1980).

Stanford educators' criticism concerning the potential and effectiveness of microteaching in all areas of curriculum grew up at the beginning of the seventies (Weiss, 1972). Then, a second generation of teaching skills was advocated (Shavelson, 1973), new approaches to in-service training were developed (Borg, 1970) and educators' efforts coincided in searching for alternative models of learning the teaching act (MacLeod and McIntyre, 1977).

Microteaching is a teacher training method based upon the behaviour modification paradigm (McDonald, 1973). As a result, much attention is paid to investigating the effects of operant conditioning and modeling in learning teaching skills, Therefore, Skinner's and Bandura's theories of learning are the initial psychological foundations of the training method, Besides, microteaching is bound in a systems approach component. In effect, feedback as a cybernetic concept is the independent training variable most thoroughly investigated in microteaching. Students, peers, supervisors and interns are considered teacher performance evaluators. Video self-evaluation and self-confrontation are late developments in the training of teachers (Fuller and Manning, 1973; Bierschenck, 1975).

Teaching skills constitute an approach to understanding a theory of teaching (Gage, 1975). The teaching act is considered as a set of interrelated variables or pieces called skills that are associated with good teaching. The skills identification and validation movement that took place at Stanford University with Aubertine's, Jonhson's, Whemeyer's dissertations, for example, did not have a continuation with other research programs. This might explain why microteaching training programs were composed of an almost closed list of technical skills (McKnight 1979). Moreover, low-inference skills such as "questioning" were repeatedly used as dependent variables in hundreds of experimental designs. The process-product paradigm for research on teaching has not given evidence of the effectiveness of other teaching behaviours (Medley, 1977) and educators are initiating studies in the ecological paradigm of research on teaching in which results are not yet consistent. Microteaching, therefore, does not provide new empirical-based teaching skills. On the other hand, the competency-based teacher education movement (CBTE) has conceived the training curriculum in terms of competencies, that is, operational objectives that are based upon theory and research specifications. Hence teacher education programs seem like a clear-cut catalogue of teaching behaviours (competencies) which have as their immediate precedent the microteaching skills (Sobol, 1972; Cooper, 1979). Microteaching, interaction analysis and simulation were then performance-based training methods within a behaviourly-oriented training philosophy.

Microteaching has been scrutinized and evaluated several times by different educators (Manis, 1973; Brunsling, 1974; Hargie, 1977). They coincided in certain areas that should be further researched. For instance, the teaching skills concept is the first topic that needs revision. On the other hand, researchers considered the enormous efforts made to

discover new effective training variables-modelling, feedback, etc. -, interactions among treatments and subject characteristics, video training technology, teacher self-evaluation, training models and so on and so forth. Besides, microteaching has been the origin of other training methods such as microcounselling and microsupervision, which are analytical approaches to the counselling interview and supervision conference, respectively.

THE EXPERIMENT

The experiment evaluates the effects of a microsupervision workshop in the supervisory conference behaviour of primary school teachers. Microsupervision is a method of training in supervisory skills. Microsupervision keeps the conceptual structure, training variables and format of microteaching. Even more so, microsupervision divides the conference into supervision behaviours in the same way that microteaching does of the teaching act. Hence microsupervision is deeply related with interaction analysis and observation instruments. In effect, interaction analysis categories have been considered observational skills and aim at some supervision training programs.

Generally speaking, supervision behaviour has been a neglected area of research until very recently (Parry and Gibbs, 1974). Thus, the purpose of this experiment was to find answers to the following six questions:

1. Can a microsupervision workshop which develops an indirect strategy of supervision in a closed-circuit of TV laboratory modify the supervisory behaviour of a group of primary school teachers during supervisory conferences?

2. Is there any observer agreement in any of the following observation instruments: Blumberg, Flanders, Brown and Hoffman, Young and Young, M.O.S.A.I.C.S., and Amidon, Amidon and Rosenshine?

3. Is there any educational performance change among the pretest, training and postest situations in the experimental group? What is the relationship between teaching and supervision behaviours of the experimental group of teachers?

4. Can the 49 ratios of observational systems be reduced to a smaller number of factors?

5. Can the Flanders Indirect/Direct ratio be predicted with personal and professional characteristics of tutors?

6. Can some teaching behaviours be predicted with ratio factors of supervision categories?

All these questions shared a common preoccupation: describing tutor behaviour in supervisory conferences. As it was written above, an assumed supervision paradigm says that a supervisory conference is a teaching act (Lindsey, 1969; Dussault, 1973).

A supervisory conference is, therefore, a dyadic interaction that can be observed, described and quantified, and in which data thus obtained may be the means to propose a supervisory behaviour paradigm. When studies of supervisory conferences take into account certain independent variables (laboratory training, videotape play-back, microteaching simulation, etc.), then research methodology relies on observational techniques which use interaction analysis instruments (Young and Young, 1972).

There are very few instruments to analyse behaviour in supervisory conferences (Weller, 1971; Mosher and Purpel, 1972; Blumberg, 1974). Consequently, the supervisor role in teacher training institutions should be further studied (McAleese and Unwin, 1971; Griffiths, 1975; Brown and McGarvey, 1975; García, 1978), and supervisory conferences are adequate interaction encounters where patterns and

styles of supervision might be inferred (Perlberg and Theodor, 1972).

The effects of diverse independent training variables have also been measured through category ratios derived from observational instruments (Darr, 1972; Hil, 1972; Kozisek, 1975), although it is a scientific prerrequisite to determine the reliability of observational instruments (Medley and Mitzel, 1963).

METHOD

The sample size was 18 primary school in-service teachers of Seville (Spain). They all had an average of ten years teaching experience and this was the first time that they had participated in a video training laboratory. The small size of the sample is rather frequent in this type of training experiments (Copeland and Doyle, 1973; Douglass and Pfeiffer, 1973).

According to Campbell and Stanley, the experimental design was a pretest-postest control group, where the treatment group had the microsupervision training experiences. All subjects were randomly assigned to the two groups. Similarly 56 videotape recordings were randomly assigned to seven observers.

The independent variable -microsupervision workshop- consisted of a sequence of training experiences so as to learn an indirect strategy of supervisory conference. The indirectness construct was derived from several educators (Flanders, 1970; Cohen, 1972; Blumberg, 1974). We chose the "clinical supervision" cycle to arrange sessions during the treatment phase of the experiment. The dependent variables were 50 ratios derived from five observational systems: Blumberg, Flanders, Brown and Hoffman, Young and Young, and M.O.S.A.I. C.S.

The observational methodology included the following process:

1) Selection and training of judges. This included a theoretical explanation of the instruments, different readings and an application of the instruments to code videotape recordings.

2) Videotape equipment consisted of video camaras and monitors in two different rooms allowing videotaping and the viewing performances by two groups of teachers to take place simultaneously.

3) All observational systems were unknown in the Spanish context, except the FIAC instrument for teaching situations.

4) Coding procedures were of two types. Whereas Blumberg's, Young and Young's, and Amidon, Amidon and Rosenshine's systems are based upon time units, other instruments -M.O.S.A.I.C.S. and Brown and Hoffman's-quantify information in segments called thought units.

5) All videotapings were tapescripted and analysed afterwards.

6) Agreement and stability among observers followed Frick and Semmel's (1978) recommendations. In order to assure reliability we answered the following questions: "When should agreement be measured?", "agreement on what kinds of data?", "agreement with whom?", "agreement under what conditions and how "perfect"?"and "how can agreement be measured?"

The coded data was used to test statistical hypotheses. More specifically, Student t-test, Wilcoxon's matched-pairs signed-ranks statistic and Mann-Whitney U-test were applied to ratios of observational instruments to determine the strength and direction of change in the two groups.

In the second hypothesis, five statistical tests were used to assess reliability and stability among observers: Kendall's W test, Woolf's G test, three-way analysis of variance, four-way analysis of variance and Hotelling's T^2 test.

Because of the large number of dependent variables of this study, 55 parametric and nonparametric analysis of variance were computed in hypothesis 3. Additionally, Pearson Product-Moment Correlation coefficient was administered to determine if there were significant relationships between teaching and supervision ratios for the same subject.

The BMDP4M computer program was used to obtain factors derived from 49 observational ratios. Besides, a congruence coefficient assigned the values of two factorial solutions.

A stepwise multiple regression analysis was used in hypotheses 5 and 6. Predictor variables were personal and professional characteristics of teachers, while criterion variable was Flanders' revised Indirect/Direct ratio in hypothesis 5.

Finally, predictor variables were supervisory factorial solutions and criteria variables were teaching composites that had been significantly correlated with student achievement in hypothesis 6.

Data processing techniques included BMD statistical packages and handmade computer programs written in FORTRAN and BASIC languages. Last programs were designed for two main purposes: first of all, to describe supervisory conferences, and secondly, to modify and adapt statistical tests. Description of supervisory conferences included matrices, histograms, and frequencies and percentages of ratios.

RESULTS

Discussion. Hypothesis 1. There were significant differences in the means between the experimental and control groups in the postest performances of the following ratios of the observational systems: "Indirect Answers" (Blumberg's system) and "Positive/Negative" (M.O.S.A.I.C.S. instrument). Non - significant differences were obtained in the remaining ra-- tios. Besides, inconsistent significant differences resul-- ted when contrasting the means between the experimental and control groups in the postest and also when comparing the means between the pretest and postest situations in the experimental and control groups. (See Table 1).

Insert Table 1 here

Hypothesis 2. In the first subhypothesis -agreement among - observers- results indicated that Blumberg's, Flanders', - Brown and Hoffman's, Young and Young's, M.O.S.A.I.C.S., and Amidon, Amidon and Rosenshine's instruments were reliable - when data was analyzed by Kendall's coefficient concordance (w). However, disagreement among judges was obtained when contrasting data with Woolf's G statistical test. Agreement - among observers was calculated twice: at the beginning and end of the coding process. In the second subhypothesis -intraobservers agreement- stability was found in Blumberg's, Flanders', M.O.S.A.I.C.S., Young and Young's, and Amidon, - Amidon and Rosenshine's observational systems. However, observers coding stability in the Brown and Hoffman's instrument was not achieved. (See Table 2 for details).

Insert Table 2 here

Hypothesis 3. There were significant differences in the means of the pretest, treatment and postest situations of the experimental group in the following ratios: "Indirect/Direct","Supervisor answers" and "Supervisor questions" (Flanders' system); "Structuring domain" (Brown and Hoffman's system); "Indirect/Direct" (Young and Young's system), and "Complex/Simple" and "Positive/Negative" (M.O.S.A.I.C.S. instrument).

Besides, "Teacher immediate answer ratio" (Amidon Amidon and Rosenshine's system)was highly and negatively correlated with "Behaviour control" (Blumberg's system,r=-.797) and with "Content ratio" (Young and Young's system, r=-.885). At the same time, "Student persistence ratio" was highly and positively correlated with "Teacher talk" (Flanders' system, r=.799), highly and negatively correlated with "Structuring domain" (Brown and Hoffman's instrument, r=-.777) and highly and negatively correlated with "Supervisor soliciting teaching cycle" (M.O.S.A.I.C.S. instrument, r=-.675). (See Table 3).

Insert Table 3 here

Hypothesis 4. In Factor Analysis I, twelve factors explained 82.8 percent of the variance of 35 ratios derived from Blumberg's, Brown and Hoffman's, Flanders' and M.O.S.A.I.C.S. systems. Factors were named as follows: Indirectness, Inquiry, Supervisor answer,Evaluation, Static, Initiation,Teacher communication, Defensiveness, Supervisor talk, Preoccupation, Affectiveness and Structuring. In Factor Analysis II,eleven factors accounted for 82 percent of the variance of 34 ratios derived from Blumberg's,Brown and Hoffman's,Flanders', and Young and Young's instruments. Factors were named in the following way: Supervisor talk, Indirect questions, Questions,Indirect answers, Maintenance, Teacher initiation, Indirect -

reaction, Information, Affective, Supervisor answer and Inquiry. Afterwards, a congruence coefficient was calculated to assign both factor solutions.(See assignments in Table 4).

Insert Table 4 here

Hypothesis 5. The control variable ("Revised Indirect/Direct" ratio derived from Flanders' instrument) was predicted by - the variable called "Inspector Inform", although the variance explained (24.44%) was not enough to show that this last variable significatively affects the control variable. (See equation in Table 5)

Insert Table 5 here

Hypothesis 6. Considering as control variables the categories entitled "Memory" (Aschner-Gallagher's system), "Data - Recall" (CLAIM instrument) and "Specific items of data" - (Taba's system) and as predictor variables the two factorial solutions, twelve regression models were tested. The statistical package used was BMDP2R. The results showed that the "Data Recall" category -highly and positively correlated with student achievement in a previous study (Villar, 1982)- was predicted by the factors named Indirectness, Inquiry, Supervisor answer, Static, Teacher communication and Supervisor talk of Factor Analysis I.Also, "Data Recall" was predicted by factors named Questions, Indirect-Answers and Indirect - reaction of Factor Analysis II. (Table 6 presents equations).

Insert Table 6 here

Conclusions

H_1. The microsupervision workshop did not modify the supervisory behaviour of an experimental group of teachers - more than a control group.

H_2. There was observer agreement in the following instruments: Blumberg, Flanders, Brown and Hoffman, Young and Young, M.O.S.A.I.C.S., and Amidon, Amidon and Rosenshine. Besides, observer coding stability was obtained in all systems, except in Brown and Hoffman's instrument.

H_3. The microsupervision workshop changed the supervisor behaviour of experimental teachers in the pretest, treatment and postest situations. Moreover, there were strong relationships between teaching and supervisory beha--- viour .

H_4. There were two factorial solutions with the 49 ratios - derived from five supervisory category systems. A congruence coefficient assigned the 12 and 11 factors obtained in both factor analyses.

H_5. A lineal relationship was not accepted between Flanders' Indirect/Direct ratio and personal and professional variables.

H_6. A lineal relationship was accepted between the teaching category "Data Recall" and some factor coefficients of supervisory ratios.

Interpretation and suggestions

The microsupervision workshop did not increase the percentage of occurrence of an indirect style of supervisory behaviour in the experimental group. This might have been - due to experimental design. In effect, the workshop schedule seemed to be insufficient to guarantee enough exposure of

subjects to the treatment variable. Besides, recording time during training was too short a period for teachers to exhibit desirable supervisory skills. Internal and external validity could have been affected so that both groups tended to learn following the same experimental procedure.

From the methodological point of view, this research could be considered as a supervision instruments sourcebook, because it is the first time that observational systems such as Blumberg's, Brown and Hoffman's, Weller's, and Young and Young's have been adapted and used in the Spanish context. At the same time, the research shows a strategy to train observers and a methodology to analyse observer reliability. Nevertheless, further research should be done with the Brown and Hoffman's system in order to accomplish data reliability.

Factor analysis of category ratios has confirmed the structure of some observational system ratios and enabled one to summarize and breakdown the wide variety of initial ratios.

Finally, multiple regression analysis of the two last hypotheses has resulted in a series of equations that should be interpreted with caution. First of all, sample size should be increased so that statistical tests meet all conditions, and secondly new multiple regression analyses will be necessary to accept or reject other replication models.

Taking into account all considerations, we finally suggest:

1º)to develop new supervisory training programs and techniques,

2º)to delineate valid and reliable supervisory conference observational systems, and

3º)to adopt alternative experimental designs.

TABLE 1

Differences in observational system ratios between supervisory conferences videotaped before and immediately after completing the Microsupervision Workshop in the experimental and control groups. Also differences between experimental situations in each group

RATIOS	COMPARISON	HYPOTHESIS
Blumberg's Indirect Answers	Experimental vs. control(postest)	accepted
M.O.S.A.I.C.S. Positive/Negative	Experimental vs. Control(postest)	accepted
Blumberg's Oral Communication	Pretest vs. postest (experimental)	accepted
Blumberg's Indirect Answers	Pretest vs. postest (control)	not accepted
Blumberg's Significative Talk	Pretest vs. postest(experimental)	accepted
Blumberg's "Concern" Expression	Pretest vs. postest(experimental)	accepted
Flanders' Supervisor Questions	Pretest vs. postest (control)	not accepted
Flanders' Supervisor Questions	Experimental vs. control (pretest)	not accepted
Young and Young's Supervisor Answers	Pretest vs. postest (experimental)	accepted
Young and Young's Teacher Initiation	Pretest vs. postest (experimental)	accepted
Young and Young's Teacher Initiation	Pretest vs. postest (control)	not accepted
Young and Young's Supervisor Immediate Question	Pretest vs. postest (experimental)	accepted
Young and Young's Supervisor Talk	Pretest vs. postest (experimental)	accepted
Young and Young's Information Function	Pretest vs. postest (control)	not accepted
Young and Young's Reflexive Answers	Pretest vs. postest (experimental)	accepted
Young and Young's Reflexive Answers	Pretest vs. postest (control)	not accepted
M.O.S.A.I.C.S. Supervisor Initiatory/Reflexive	Experimental vs. control (pretest)	not accepted
M.O.S.A.I.C.S. Analytic/Evaluative	Pretest vs. postest (control)	not accepted
M.O.S.A.I.C.S. Supervisor Structuring Teaching Cycle	Pretest vs. postest (control)	not accepted
M.O.S.A.I.C.S. Supervisor Structuring Teaching Cycle	Experimental vs. control (pretest)	not accepted

$\alpha = 0.05$

TABLE 2

Measures of interobserver agreement (four observers) for Blumberg's videotaping No. 2 in the first session

TESTS

Kendall's W	W = 0.78	χ^2= 43.92	accepted (α =0.05)
Woolf's G	G = 86.91	χ^2= 58.12	accepted (α =0.05)

Three-factor ANOVA (Observers x videotapings x instrument items)

Source	df	SQ	MS	
1	3	3.228	1.076	
2	8	58.855	7.356	
3	14	1035.606	73.971	
12	24	6.528	.272	
13	42	56.296	1.340	
23	112	439.358	3.922	
Residual	336	104.976	.312	
TOTAL	539	1704.850		accepted (α =0.05)

Measure of intraobserver agreement (four observers) for Brown and Hoffman's - videotapings

Four-factor ANOVA (observers x videotapings x instrument items x sessions)

Source	df	SQ	MS	
ABCD	96	0.6095D+02	0.6349	
ABC	86	0.6258D+02	0.8604	
AB D	12	0.1463D+02	1.2188	
AB	12	0.1861D+02	1.5506	
A CD	32	0.8846D+02	2.7859	
A C	32	0.1602D+03	5.0072	
A D	4	0.3413D+02	8.5332	
A	4	0.8307D+03	232.6745	
BCD	24	0.5531D+01	0.2305	
BC	24	0.7684D+01	0.3202	
B D	3	0.2442D+01	0.8141	
B	3	0.1478D+02	4.9312	
CD	8	0.1834D+02	2.4173	
C	8	0.4017D+02	5.0216	
D	1	0.1358D+01	1.3583	
	1	0.4088D+04	4086.3843	

not accepted(α =0.05)

TABLE 3

Parametric and nonparametric analysis of variance used to compare treatment situations in the experimental group

RATIO	TEST	HYPOTHESIS
Flanders' Indirect/Direct	Kruskal-Wallis One-way Analysis of Variance by Ranks	accepted
Flanders' Supervisor Answer	Kruskal-Wallis	accepted
Brown and Hoffman's Structuring domain	One-factor analysis of variance	accepted
Young and Young's Indirect/Direct	One-factor ANOVA	accepted
M.O.S.A.I.C.S. Complex/Simple	Kruskal-Wallis	accepted
M.O.S.A.I.C.S. Positive/Negative	Kruskal-Wallis	accepted

$\alpha = 0.05$

TABLE 4

Assignment of factors found by two factor analysis of supervisory ratios using congruence coefficient ψ

FACTOR ANALYSIS I (Factors)		FACTOR ANALYSIS II (Factors)
Indirect (I)	———	Supervisor Answer (X)
Questioning (II)	———	Questions-Indirect Style (II)
Supervisor Answer (III)	———	Answers-Indirectness (IV)
Evaluation (IV)	———	Questions (III)
Static (V)	———	Maintenance (V)
Initiation (VI)	———	Inquiry (XI)
Teacher Communication (VII)	———	Indirect Reaction (VII)
Defense (VIII)	———	Teacher Initiation (VI)
Preoccupation (X)	———	Information (VIII)
Affective (XI)	———	Affective (IX)
Structuring (XII)	———	Supervisor Talk (I)

TABLE 5

Regression Equation Contribution of Inspector Inform to Variance in Flanders' Indirect/Direct Ratio in a Sample of Seville School Teachers				
PREDICTOR	Coefficient b	Standard Regression Coefficient β	R	R^2
Inspector Inform (X_1)	-1.875	-.463	.463	.214
Y = -1.875 + .526				

TABLE 6

Regression Equation Showing Contribution of Supervisory Variables (Coefficients of Factor Analysis I in the Pretest) to Variance in "Data Recall" Teaching Behaviour in a Sample of Seville School Teachers

PREDICTOR	Coefficient b	Standard Regression Coefficient β	R	R^2
Indirectness(X_5)	-10.800	-.579		
Questioning (X_6)	15.019	.961		
Supervisor Answer (X_7)	-7.175	-.526	.968	.938
Static (X_9)	-3.402	-.280		
Teacher Communication(X_{11})	-3.272	-.320		

$Y = -10.80\ X_5 + 15.02\ X_6 - 7.18\ X_7 - 3.40\ X_9 - 3.27\ X_{11} + 42.80$

Regression Equation Showing Contribution of Supervisory Variables (Coefficients of Factor Analysis I in the Postest) to Variance in "Data Recall" Teaching Behaviour in a Sample of Seville School Teachers

PREDICTOR	Coefficient b	Standard Regression Coefficient β	R	R^2
Indirectness(X_5)	14.199	.524		
Supervisor Talk (X_{13})	-8.209	-.804	.8089	.6543

$Y = 14.20\ X_5 - 8.21\ X_{13} + 48.482$

Regression Equation Showing Contribution of Supervisory Variables (Coefficients of Factor Analysis II in the Pretest) to Variance in "Data Recall"Teaching Behaviour in a Sample of Seville School Teachers

PREDICTOR	Coefficient b	Standard Regression Coefficient β	R	R^2
Questions(X_7)	11.107	.722		
Answers-Indirect(X_8)	-8.181	-.599	.7728	.5972

$Y = 11.11\ X_7 - 8.18\ X_8 + 42.733$

Regression Equation Showing Contribution of Supervisory Variables (Coefficients of Factor Analysis II on the Postest) to Variance in "Data Recall"Teaching Behaviour in a Sample of Seville School Teachers

PREDICTOR	Coefficient b	Standard Regression Coefficient β	R	R^2
Indirect Reaction (X_{11})	-6.326	-.591	.5914	.3498

$Y = -6.33\ X_{11} + 45.378$

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