

Peer- Coaching, EFL Teacher's Professional Identity Development and Students' Academic Achievements

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Abstract—The purpose of this study was two-fold: examining the effect of peer coaching on EFL teachers' professional identity and learners' academic achievement. To this end, this very mixed-methods research was designed to see the extent to which the least investigated variable in the Iranian EFL setting. Five high school EFL teachers were triangularly coached and achievements of their classes including those of 307 EFL students were investigated. The teachers received questionnaire both before and after a 12-session coaching process while being both observed and attended a think-aloud protocol reporting. Moreover, the standardized Classroom Observation Sheet was employed whilst the coaching process. The students' entry and exit academic behaviours in terms of achievements were measured prior to and after the treatment. Analyses of each set of data collected from each group indicated that peer coaching entailed statistically significant developments in many categories teachers' professional identity as well as in the students' academic achievements. Pedagogically, the findings suggest feasibility and effectiveness of conducting peer-coaching and internalizing it in our EFL educational system.

Index Terms—teachers' professional development, peer-coaching, academic achievements

I. INTRODUCTION

Teachers' professional development has recently received prime attention. In contrast to the traditional methods of teaching being based on some one-shot training, nowadays most methods focus on the enhancement of teachers' skills, competencies and practices. Among such teaching mechanisms, peer coaching is claimed to enable teachers to exchange support, feedback, and assistance (Ackland, 1991). According to Reiman and Johnson (2003), peer coaching can maximize creativity among teachers and develop a disposition of collaboration and continuous improvement; a path which can ultimately to teacher's professional development.

In the past, professional development was left up on to outside providers who used to intervene through short-term events like one-day workshops (Rainville, 2007). But nowadays, the researches argue that professional development requires some factors to be more effective: it must be based on specific context, sustained over time, and connected to teachers' daily practice, and be collaborative (Cochran-Smith & Lytle, 2001; Garet, Porter, Desimone, Birman, & Yoon, 2001; Neufeld & Roper, 2003a, 2003b).

As an emerging concept, teacher's "professional identity has become a new area of research in education (Clarke, Hyde, & Jonathan, 2013). According to Epstein (1978), professional identity is essentially an integrative concept that "represents the process by which the person seeks to integrate his various statuses and roles, as well as his diverse experiences into a coherent image of self" (p. 101). Beijaard et al. (2004) hold it provides the basis for "decision making and meaning making on the part of teachers" (p.109). It fosters teacher's creativity and autonomy (Singh & Richards, 2006), facilitates achievements of transformative goals (Cochran-Smith & Lytle, 2001), and plays a more significant role in teaching quality (Clandinin & Connelly, 1996, Beijaard et al., 2004). Lasky (2005) refers to professional identity as how teachers define themselves as teachers: e.g., answering such major questions as "who am I?", "what kind of teacher do I want to be?", and "how do I see my role as a teacher?" (Korthagen, 2004, p. 81). Vakili (2010) schematizes his own understanding of how the teacher self is constructed and also how teachers shape their selves as language teachers.

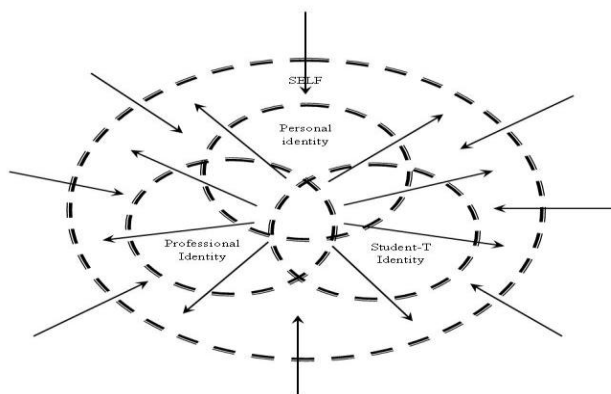


Fig. 1. Schematic Representation of the Teacher Self.(Vakili 2010)

A. Coaching

One of supposedly supported channels of developing a sense of cooperation among teachers is coaching, which is not only a “role with a job description that one person carries out in a school”, but also it is a “strategic, systemic approach to improving student learning” (Saphier & West, 2009, p. 47). Sherri (2010) considers coaching as assistance for which addresses “assessment of language, and complex challenges to learning, teaching and also through a process of inquiry that is co-constructed and dialogic, opens teachers through self-critical, exploratory, and reflective dimensions of interaction” (p. 1).

Coaching is named differently including “peer mentoring, learning-centered supervision, peer supervision, and cognitive coaching” (Pellicer and Anderson, cited in Britton, 2006, p .8) and introduced under various categories in developing organizational behavior such as “cognitive coaching, instructional coaching and peer coaching” (Beglau et al., 2011, p. 9). Similarly, four predominant types of coaching models are predominant in education including “peer coaching, cognitive coaching, literacy coaching, and instructional coaching” (Cornett & Knight, 2009, p. 196).

B. Peer Coaching

According to Neubert and McAllister (1993), peer coaching is the collaboration between two colleagues, which involves teachers in collaborative procedure that helps them to apply new instructional practices, curricula (Shower, 1982), and skills learned in workshop (Galbraith & Anstrom, 1995). Moreover, Huston and Weaver (2008) discussed peer coaching as a “collegial process whereby two faculty members voluntarily work together to improve or expand their approaches to teaching” (p.19). This kind of coaching focuses on observation, feedback and planning in collaborative way to improve new instructional technique and curriculum (Ackland, 1991; Odell, 1990; Perkins, 1998). Peer coaching is based on a number of principles identified by Robertson (2005) as follows:

- Trust: facilitates adult learning (Fielding et al., 2005; Ladyshewsky, 2006).
- Collaboration: is always relevant to growth and improvement of classroom teacher (Robertson, 2008; Ladyshewsky, 2006; Briton & Anderson, 2010).
- Conferencing: gives parents opportunity to receive feedback before and after instruction (Costa & Garmson, 2002).
- Analysis and reflection: helps the learner to process the data, alter practices, and build efficacy, self-assessment, develop a professional culture, identify issues, deepen understanding, and challenge ideas (Robertson, 2008).

C. Problem and Purpose

Contrary to the numerous studies conducted on both variables separately, there seems ample room for further studies on investigating the effects of peer-coaching not only on professional identity development (PID) of the target teachers but also on the students’ English language academic achievements. In order to fill such a gap in the literature, the study pursues two specific objectives: to investigate the extent to which the Iranian EFL teachers’ professional identity could be a function of coaching, and to examine possible improvements in EFL learners’ academic achievements in light of further professional development. To this end, the following research questions followed up in the form of respective hypotheses were raised:

1. Does peer coaching have any significant effects on professional identity development of Iranian high school EFL teachers?
2. Does peer coaching have any significant effects on Iranian high school EFL students’ academic achievements?

II. METHODS

A. Participants

Participants were five EFL female teachers and 307 Iranian students from five different high schools. The teachers' teaching experience ranged from ten to fifteen years. The students were divided into two groups: one experimental and one control. The experimental group consisted of 156 but the control group included 151 students.

B. Instrumentation

To conduct this study, the following instruments were employed:

1. **Nelson Test:** as a general proficiency test used to select a homogeneous sample of EFL learners.
2. **Researcher-made Diagnostic Test:** to measure the learners' entry behavior respectively prior to the treatment.
3. **A Researcher-made Achievement Test:** was designed to measure the learners' exit behavior after the treatment.
4. **Teacher Professional Identity Development Questionnaire:** was used to measure the teachers' professional development level both before and after the coaching, as already used for similar purpose (Douwe, Beijgaard, NicoVerloop, Jan D. Vermont, 1999).
5. **Classroom Observation Sheet:** Developed by Eugene Schaffer, Daniel Muijs, Catherine Kitson, David Reynolds, was used to record the report of coaching and teachers' professional development.

C. Procedure

The participating teachers were randomly selected and in coordination with the authorities of each school, they were encouraged to cooperate with the researchers. Each teacher used to manage one class with three hours and 30 minutes of the teaching during a week held in for two sessions per week.

Following a formal briefing session, they completed the PID Questionnaire prior to the coaching process. They also participated in a pre-observation conference thereby they shared their class and syllabus details and lesson plan. They were coached and observed for 15 sessions by one of the researchers. During the observation, the coach would watch for specific teaching and learning behaviors and record them in details. She would monitor the teachers' classroom conduct in implementing the syllabus. Furthermore, the teachers and coach had post-observation conference to talk about the classroom conduct, each of which was followed by constructive feedback. Finally, the PID Questionnaire was administered again to measure any developments in order to compare pre- and post- behavior.

As to the students, the Nelson Test and Diagnostic Test were administered to select a homogeneous group of learners and to measure the learners' entry behavior, respectively. Ultimately, the Achievement Test was administered to measure the learners' academic achievements.

III. RESULTS AND DISCUSSION

A. Investigation of the Research Question One

The Mann-Whitney U test was run to compare the experimental and control groups' professional identity prior to the coaching process. As displayed in Table 1, the mean ranks for the experimental ($M = 6.80$) group showed a higher mean rank than that of the control ($M = 4.20$) group.

TABLE 1.
MEAN RANKS; PRETEST OF PROFESSIONAL IDENTITY BY GROUP

	Group	N	Mean Rank	Sum of Ranks
Pretest	Experimental	5	6.80	34.00
	Control	5	4.20	21.00
	Total	10		

The results of the Mann-Whitney U test ($U = 6$, $Z = -1.36$, $P > .05$) indicated that the pre-coaching difference between the two mean ranks observed in Table 2 was no significant.

TABLE 2.
MANN-WHITNEY U TEST STATISTICS

	Pretest
Mann-Whitney U	6.000
Wilcoxon W	21.000
Z	-1.362
Asymp. Sig. (2-tailed)	.173
Exact Sig. [2*(1-tailed Sig.)]	.222 ^b

a. Grouping Variable: Group
b. Not corrected for ties.

However, the Mann-Whitney U test run after the coaching, as displayed in Table 3, shows the mean rank for the experimental ($M = 8.00$) group is higher than that of the control ($M = 3.00$) group.

TABLE 3.
MEAN RANKS; POSTTEST OF PROFESSIONAL IDENTITY BY GROUP

	Group	N	Mean Rank	Sum of Ranks
Posttest	Experimental	5	8.00	40.00
	Control	5	3.00	15.00
	Total	10		

So, based on the results of the Mann-Whitney U test ($U = 6, Z = -2.61, P < .05$) there was significant difference between the experimental and control groups' mean ranks as shown in Table 4. Thus, it can be concluded that the first null-hypothesis was rejected.

TABLE 4.
MANN-WHITNEY U TEST STATISTICS

	Posttest
Mann-Whitney U	.000
Wilcoxon W	15.000
Z	-2.619
Asymp. Sig. (2-tailed)	.009
Exact Sig. [2*(1-tailed Sig.)]	.008 ^b

a. Grouping Variable: Group
b. Not corrected for ties.

Observation.

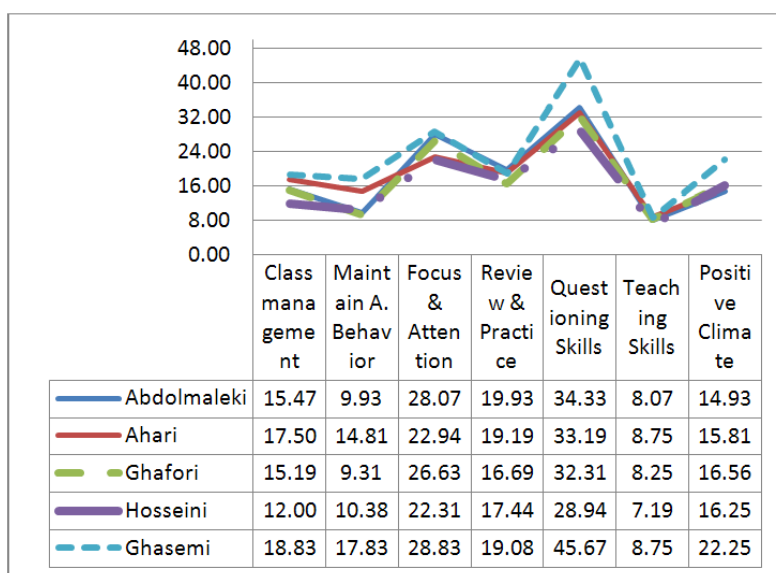
The attending teachers were also observed and their trend of their professional development on the following seven performance categories was recorded:

- Class management,
- Classroom behavior,
- Focusing and maintaining attention,
- Review and practice,
- Questioning skills,
- Teaching skills, and
- Positive classroom climate.

The observation data were also analyzed through both descriptive and inferential statistics (MANANOVA) for each individual teacher.

Comparing Teachers' Performance.

Graph 1 numerically illustrates the whole picture of the means of the performance of the attending teachers on the seven categories of the professional development.



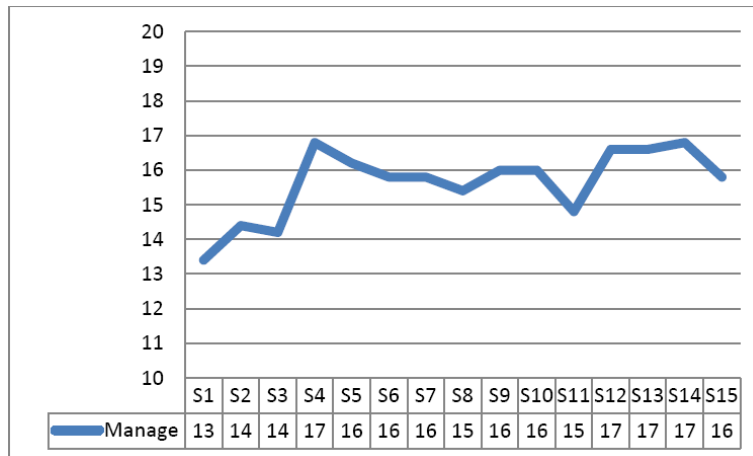
Graph 1. Classroom Activities by Teachers

Trends of Teachers' Performance over Sessions.

What follows, displays the participants' classroom conduct as represented in the seven categories over the 15-session of coaching process recorded based on the observation sheet.

Maintaining Classroom Management.

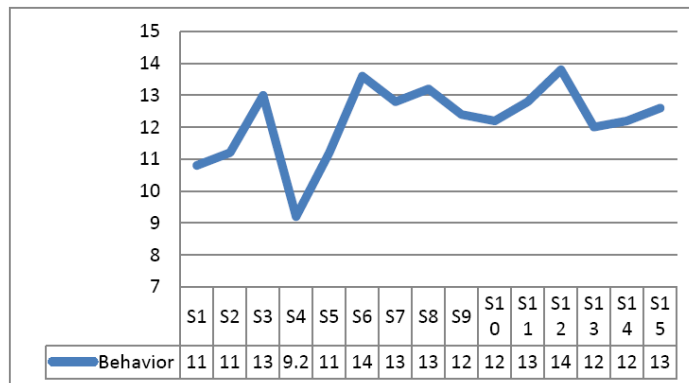
Graph 2 shows that classroom management being at the lowest level on the first session, gradually increased to its highest level on fourth session and had an almost even trend until it showed a large decrease on the eleventh session. It began to increase after the major decrease and showed an almost upward move before the last decrease on the last session. It seems that the classroom management is maintained the teachers felt downward movement.



Graph. 2. Maintaining Classroom Management over 15 Sessions

Maintaining Appropriate Classroom Behavior.

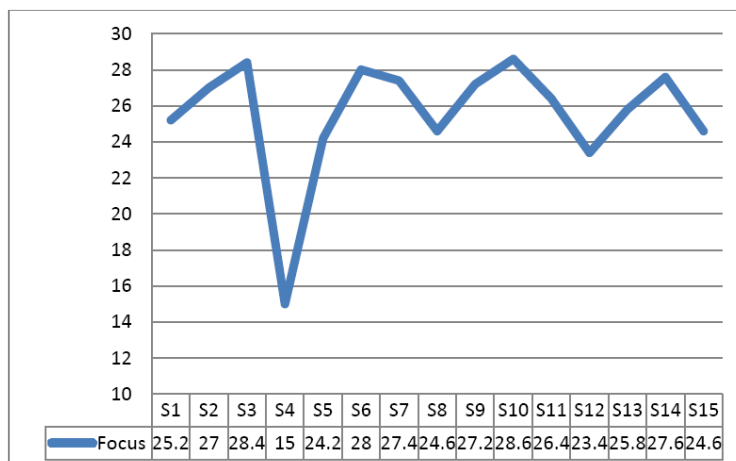
Graph 3 shows that appropriate classroom behavior showed an increasing trend over the first three sessions after which a major decrease happened. Then, it increased and showed an almost steady pattern before the highest increase on the twelfth session.



Graph. 3. Maintaining Appropriate Classroom Behavior

Focus and Maintain Attention.

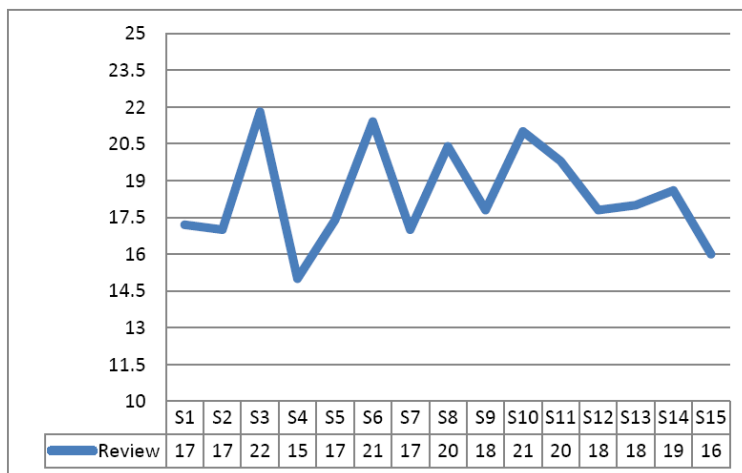
Graph 4 shows that focusing and maintaining attention on lesson had a rising-and-falling pattern every two or three sessions. It started to move upward on the first three sessions then showed the biggest fall.



Graph. 4. Focus and Maintain Attention

Providing Students with Review and Practice.

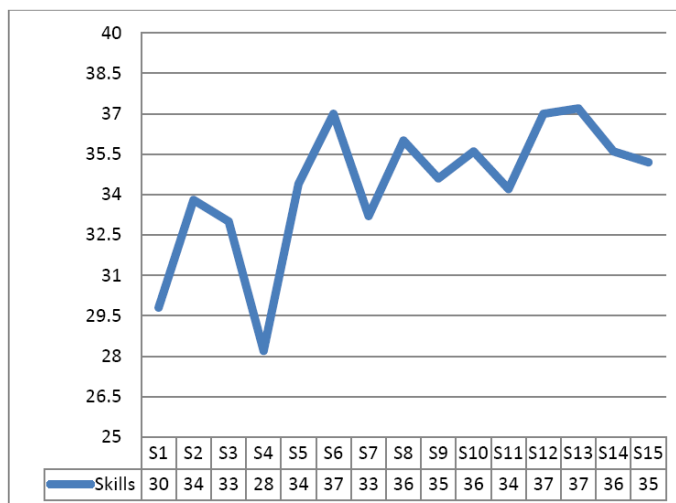
Graph 5 shows teachers provided students with review and practice every other session; with the highest and lowest reviews on the third and fourth sessions, respectively.



Graph. 5. Providing Students with Review and Practice

Demonstrating Questioning Skills.

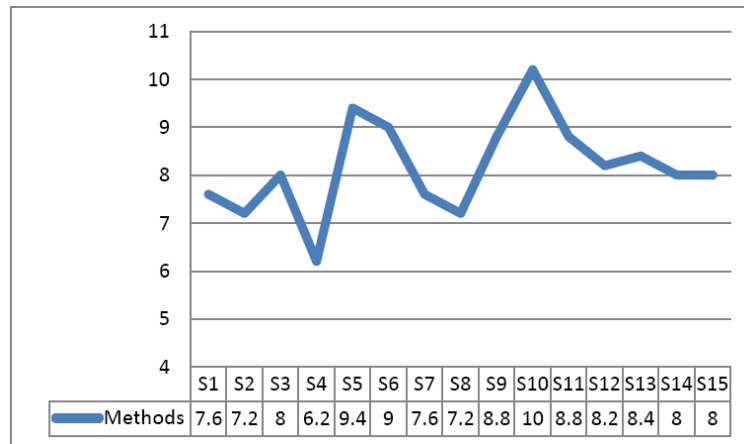
Graph 6 shows that teachers did not hold a clear pattern when demonstrating questioning skills. It showed a rising-and-falling pattern over the session with the lowest and highest at fourth and thirteenth sessions, respectively.



Graph. 6. Demonstrating Questioning Skills

Demonstrating a Variety of Teaching Methods.

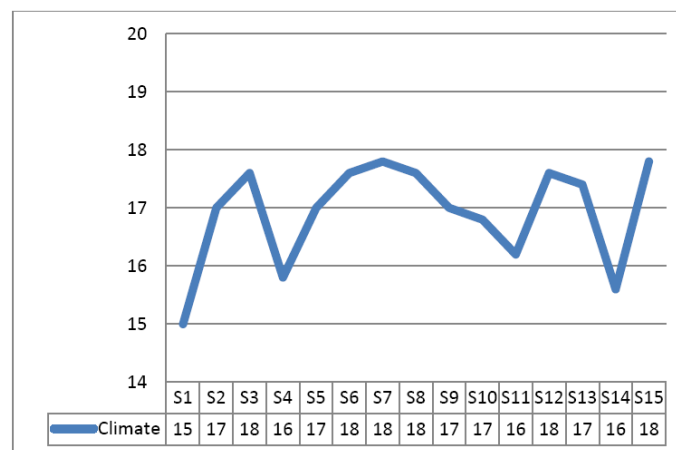
Graph 7 shows that teachers showed an almost steady pattern during the first two sessions ending in a sharp decline in the fourth session. Then, they moved up using variations in teaching followed by downward movement and got to their highest point in the tenth session and finally ended in a falling trend.



Graph. 7. Demonstrating a Variety of Teaching Methods

Establishing a Positive Classroom Climate.

The first three sessions witnessed a rising pattern for establishing a positive climate in classroom which was followed by a sharp decline. A curve pattern followed with two sharp falling then rising patterns.



Graph. 8. Establishing a Positive Classroom Climate

Along with the figures and graphs, multivariate ANOVA (MANOV) was run to compare the teachers’ application of the seven teaching techniques. As displayed in Table 5, the probabilities associated with the Levene’s F-values were all higher than .05. Thus, the assumption of homogeneity of variances was met.

TABLE 5.
LEVENE'S TEST OF EQUALITY OF ERROR VARIANCES

	F	df1	df2	Sig.
Class Management	2.022	4	70	.101
Maintain Behavior	2.120	4	70	.087
Focus & Attention	1.275	4	70	.288
Review & Practice	.655	4	70	.625
Questioning Skills	2.091	4	70	.091
Teaching Skills	.205	4	70	.935
Positive Climate	1.964	4	70	.110

The main results are discussed referring to the following three tables: 5 which shows the F-values, 6 showing the descriptive statistics and 7 which shows the results of the post-hoc Scheffe’s tests.

Maintaining Classroom Management.

Based on the results displayed in tables 5, 6 and 7, there were significant differences between the five teachers’ maintenance of classroom management ($F(4, 70) = 11.44, P < .05, \text{Partial } \eta^2 = .39$ representing a large effect size). The means scores in order of magnitude were; Ghasemi ($M = 18.83$), Ahari ($M = 17.50$), Abdoulmaleki ($M = 15.46$), Ghafori ($M = 15.18$) and Hosseini ($M = 12$). The results of the post-hoc Scheffe’s tests (table 7) indicate that there were four significant differences among the means.

A.1: Ghasemi ($M = 18.83$) showed a significantly higher mean on maintenance of classroom management than Hosseini ($M = 12$) ($M = 6.83, P < .05$) and Ghafori ($M = 15.18$) ($M = 3.65, P < .05$), did.

A.2: Ahari ($M = 17.50$) showed a significantly higher mean on maintenance of classroom management than Hosseini ($M = 12$) ($MD = 5.50, P < .05$), did.

TABLE 6.
TESTS OF BETWEEN-SUBJECTS EFFECTS

Source	Dependent Variable	df	F	Sig.	Partial Eta Squared
Teachers	Classmang	4	11.440	.000	.395
	Maintbeh	4	21.268	.000	.549
	Focus	4	2.891	.028	.142
	Review	4	1.271	.290	.068
	Demoskill	4	10.914	.000	.384
	Demomethod	4	1.295	.281	.069
	Positclim	4	10.447	.000	.374

A.3: Abdoulmaleki (M = 15.46) showed a significantly higher mean on maintenance of classroom management than Hosseini (M = 12) (MD = 3.47, P < .05), did.

Maintaining Appropriate Classroom Behavior.

Based on the results displayed in tables 5, 6, and 7, there were significant differences between the five teachers' maintenance of appropriate classroom behavior (F (4, 70) = 21.26, P < .05, Partial η^2 = .54 representing a large effect size). The means scores in order of magnitude were; Ghasemi (M= 17.83), Ahari (M = 14.81), Hosseini (M = 10.37), Abdoulmaleki (M = 9.93) and Ghafari (M = 9.31). The results of the post-hoc Scheffe's tests indicated that there were five significant differences between the means.

A.1: Ghasemi (M = 17.83) showed a significantly higher mean on maintenance of appropriate classroom behavior than Abdoulmaleki (M = 9.93) (M = 7.90, P < .05), Ghafari (M = 9.31) (M = 8.52, P < .05) and Hosseini (M = 10.37) (M = 7.46, P < .05), did.

A.2: Ahari (M = 14.81) showed a significantly higher mean on maintenance of appropriate classroom behavior than Ghafari (M = 9.31) (M = 5.50, P < .05), Abdoulmaleki (M = 9.93) (M = 4.88, P < .05) and Hosseini (M = 10.37) (M = 4.44, P < .05), did.

TABLE 7.
SCHEFFE'S MULTIPLE COMPARISONS

Dependent Variable(I) Teachers	(J) Teachers	Mean Difference (I-J)	Sig.	
Class-manage	Ahari	-2.03	.451	
	Abdoulmaleki	Ghafari	.28	.999
		Hosseini	3.47*	.037
		Ghasemi	-3.37	.078
		Abdoulmaleki	2.03	.451
	Ahari	Ghafari	2.31	.300
		Hosseini	5.50*	.000
		Ghasemi	-1.33	.840
		Abdoulmaleki	-.28	.999
	Ghafari	Ahari	-2.31	.300
		Hosseini	3.19	.061
		Ghasemi	-3.65*	.040
Abdoulmaleki		-3.47*	.037	
Hosseini	Ahari	-5.50*	.000	
	Ghafari	-3.19	.061	
	Ghasemi	-6.83*	.000	
	Abdoulmaleki	3.37	.078	
Ghasemi	Ahari	1.33	.840	
	Ghafari	3.65*	.040	
	Hosseini	6.83*	.000	
	Abdoulmaleki	-4.88*	.001	
Maintin-behav	Ahari	-4.88*	.001	
	Abdoulmaleki	Ghafari	.62	.987
		Hosseini	-.44	.996
		Ghasemi	-7.90*	.000
		Abdoulmaleki	4.88*	.001
	Ahari	Ghafari	5.50*	.000
		Hosseini	4.44*	.003
		Ghasemi	-3.02	.146
		Abdoulmaleki	-.62	.987
	Ghafari	Ahari	-5.50*	.000
		Hosseini	-1.06	.906
		Ghasemi	-8.52*	.000
Abdoulmaleki		.44	.996	
Hosseini	Ahari	-4.44*	.003	
	Ghafari	1.06	.906	
	Ghasemi	-7.46*	.000	

		Abdoulmaleki	7.90*	.000
	Ghasemi	Ahari	3.02	.146
		Ghafori	8.52*	.000
		Hosseini	7.46*	.000
		Ahari	5.13	.348
	Abdoulmaleki	Ghafori	1.44	.985
		Hosseini	5.75	.235
		Ghasemi	-.77	.999
		Abdoulmaleki	-5.13	.348
	Ahari	Ghafori	-3.69	.660
		Hosseini	.63	.999
		Ghasemi	-5.90	.269
		Abdoulmaleki	-1.44	.985
Focus	Ghafori	Ahari	3.69	.660
		Hosseini	4.31	.512
		Ghasemi	-2.21	.945
		Abdoulmaleki	-5.75	.235
	Hosseini	Ahari	-.63	.999
		Ghafori	-4.31	.512
		Ghasemi	-6.52	.178
		Abdoulmaleki	.77	.999
	Ghasemi	Ahari	5.90	.269
		Ghafori	2.21	.945
		Hosseini	6.52	.178
		Ahari	.75	.995
	Abdoulmaleki	Ghafori	3.25	.457
		Hosseini	2.50	.704
		Ghasemi	.85	.994
		Abdoulmaleki	-.75	.995
	Ahari	Ghafori	2.50	.689
		Hosseini	1.75	.892
		Ghasemi	.10	1.000
		Abdoulmaleki	-3.25	.457
Review	Ghafori	Ahari	-2.50	.689
		Hosseini	-.75	.995
		Ghasemi	-2.40	.776
		Abdoulmaleki	-2.50	.704
	Hosseini	Ahari	-1.75	.892
		Ghafori	.75	.995
		Ghasemi	-1.65	.932
		Abdoulmaleki	-.85	.994
	Ghasemi	Ahari	-.10	1.000
		Ghafori	2.40	.776
		Hosseini	1.65	.932
		Ahari	1.15	.995
	Abdoulmaleki	Ghafori	2.02	.956
		Hosseini	5.40	.329
		Ghasemi	-11.33*	.003
		Abdoulmaleki	-1.15	.995
	Ahari	Ghafori	.88	.998
		Hosseini	4.25	.559
		Ghasemi	-12.48*	.001
		Abdoulmaleki	-2.02	.956
Questionskill	Ghafori	Ahari	-.88	.998
		Hosseini	3.38	.754
		Ghasemi	-13.35*	.000
		Abdoulmaleki	-5.40	.329
	Hosseini	Ahari	-4.25	.559
		Ghafori	-3.38	.754
		Ghasemi	-16.73*	.000
		Abdoulmaleki	11.33*	.003
	Ghasemi	Ahari	12.48*	.001
		Ghafori	13.35*	.000
		Hosseini	16.73*	.000
		Ahari	-.68	.945
Teachinmethod	Abdoulmaleki	Ghafori	-.18	1.000
		Hosseini	.88	.871
		Ghasemi	-.68	.958

	Abdoulmaleki	.68	.945
Ahari	Ghafori	.50	.981
	Hosseini	1.56	.410
	Ghasemi	.00	1.000
	Abdoulmaleki	.18	1.000
Ghafori	Ahari	-.50	.981
	Hosseini	1.06	.761
	Ghasemi	-.50	.986
Hosseini	Abdoulmaleki	-.88	.871
	Ahari	-1.56	.410
	Ghafori	-1.06	.761
	Ghasemi	-1.56	.491
Ghasemi	Abdoulmaleki	.68	.958
	Ahari	.00	1.000
	Ghafori	.50	.986
	Hosseini	1.56	.491
Abdoulmaleki	Ahari	-.88	.964
	Ghafori	-1.63	.735
	Hosseini	-1.32	.859
	Ghasemi	-7.32*	.000
Ahari	Abdoulmaleki	.88	.964
	Ghafori	-.75	.979
	Hosseini	-.44	.997
	Ghasemi	-6.44*	.000
Positclimte	Abdoulmaleki	1.63	.735
	Ahari	.75	.979
	Hosseini	.31	.999
	Ghasemi	-5.69*	.001
Hosseini	Abdoulmaleki	1.32	.859
	Ahari	.44	.997
	Ghafori	-.31	.999
	Ghasemi	-6.00*	.000
Ghasemi	Abdoulmaleki	7.32*	.000
	Ahari	6.44*	.000
	Ghafori	5.69*	.001
	Hosseini	6.00*	.000

Maintaining Focus and Attention.

Based on the results displayed in tables 5, 6 and 7, there were significant differences between the five teachers' maintenance of focus and attention ($F(4, 70) = 2.89, P < .05$, Partial $\eta^2 = .14$ representing a large effect size). The means cores in order of magnitude were; Ghasemi ($M = 24.61$), Abdoulmaleki ($M = 24.61$), Ghafori ($M = 23.28$), Ahari ($M = 19.95$) and Hosseini ($M = 19.91$). Although the F-value of 2.89 was significant, the results of the post-hoc Scheffe's tests did not show any significant differences between any two teachers. These results might seem contradictory, but the error rate inflates when running multiple comparisons.

Providing Students with Review and Practice.

Based on the results displayed in table 5, 6 and 7, there were not any significant differences between the five teachers' provision of review and practice ($F(4, 70) = 1.27, P > .05$, Partial $\eta^2 = .068$ representing a moderate effect size). The means cores in order of magnitude were; Abdoulmaleki ($M = 19.93$), Ahari ($M = 19.18$), Ghasemi ($M = 19.08$), Hosseini ($M = 17.43$) and Ghafori ($M = 16.66$).

Demonstrating Skills in Questioning.

Based on the results displayed in tables 5, 6, and 7, there were significant differences between the five teachers' demonstration of questioning skills ($F(4, 70) = 10.91, P < .05$, Partial $\eta^2 = .38$ representing a large effect size). The means cores in order of magnitude were; Ghasemi ($M = 45.66$), Abdoulmaleki ($M = 34.33$), Ahari ($M = 33.18$), Ghafori ($M = 32.31$) and Hosseini ($M = 28.93$). The results of the post-hoc Scheffe's tests indicated that there were four significantly differences between the means. Ghasemi ($M = 45.68$) showed a significantly higher mean on demonstration of questioning skills than Abdoulmaleki ($M = 34.33$) ($MD = 11.33, P < .05$), Ghafori ($M = 32.31$) ($MD = 12.48, P < .05$), Ahari ($M = 33.18$) ($MD = 12.48$) and Hosseini ($M = 28.93$) ($MD = 16.73, P < .05$), did.

Demonstrating a Variety of Teaching Methods.

Based on the results displayed in tables 5,6,and 7, there were not any significant differences between the five teachers' demonstration of variety of teaching methods ($F(4, 70) = 1.29, P > .05$, Partial $\eta^2 = .069$ representing a moderate effect size). The means cores in order of magnitude were; Ghasemi and Ahari ($M = 8.75$), Ghafouri ($M = 8.17$), Abdoulmaleki ($M = 8.06$) and Hosseini ($M = 7.18$), did.

Establishing a Positive Climate.

Based on the results displayed in tables 5, 6, and 7, there were significant differences between the five teachers' establishment of a positive climate ($F(4, 70) = 10.44, P < .05$, Partial $\eta^2 = .37$ representing a large effect size). The

means cores in order of magnitude were; Ghasemi ($M = 22.25$), Ghafari ($M = 16.56$), Hosseini ($M = 16.25$), Ahari ($M = 15.81$) and Abdoulmaleki ($M = 14.93$). The results of the post-hoc Scheffe's tests indicated that there were four significant differences between the means. Ghasemi ($M = 22.25$) showed a significantly higher mean on establishing a positive climate than Abdoulmaleki ($M = 14.93$) ($MD = 7.32$, $P < .05$), Ahari ($M = 15.81$) ($MD = 6.44$, $P < .05$), Ghafari ($M = 16.56$) ($M = 5.69$) and Hosseini ($M = 16.25$) ($M = 6$, $P < .05$), did.

B. Investigation of the Research Question Two

Data normality check.

First, the respective data were checked in terms of the normality assumption. As displayed in Table 8, all of the values are below their respective critical values (± 1.96); an indication of data normality. The homogeneity of variances was also checked to be discussed when reporting the results of the inferential statistics.

Testing Assumptions.

TABLE 8.
ASSESSMENT OF NORMALITY

Variable	skew	c.r.	kurtosis	c.r.
NELSON	.935	6.691	1.663	5.950
Posttest	-.272	-1.944	-.800	-2.860
Pretest	-.582	-4.163	-.490	-1.753
Multivariate			.518	.828

Parametrically, the entry behaviors of the students as measured by both NELSON and Diagnostic Test showed non-significant different as shown in tables 8 and 9.

TABLE 9.
INDEPENDENT SAMPLE TEST; NELSON BY GROUPS

	Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
	F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	.208	.648	1.346	305	.179	.948	.704	-.437	2.332
Equal variances not assumed			1.347	304.859	.179	.948	.704	-.437	2.332

TABLE 10
INDEPENDENT SAMPLES TEST; DIAGNOSTIC TEST BY GROUPS

	Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	.349	.555	1.180305		.239	.498	.422	-.332	1.328
Equal variances not assumed			1.179301	973.239		.498	.422	-.333	1.329

Investigation of the Research Question Two.

Following the normality check, an independent t-test was run to compare the experimental and control groups' mean scores on the Academic Achievement Test. The experimental group ($M = 20.97$, $SD = 5.14$) showed a higher mean than the control group ($M = 17.62$, $SD = 6.40$) on the Achievements Test (Table, 11).

TABLE 11.
DESCRIPTIVE STATISTICS; POSTTEST OF ACADEMIC ACHIEVEMENTS BY GROUPS

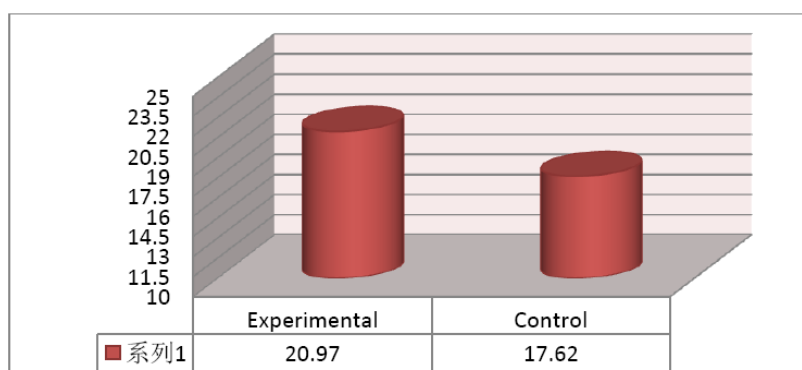
	Group	N	Mean	Std.	Std. Error
				Deviation	Mean
Achievement	Experimental	156	20.97	5.149	.412
	Control	151	17.62	6.405	.521

The results of the independent t-test ($t(287) = 5.04$, $P < .05$, $R = .28$ representing an almost moderate effect size) (Table 12) indicated that there was a significant difference between the two groups' mean scores.. Thus, the second null-hypothesis was rejected.

TABLE 12.
INDEPENDENT SAMPLES TEST; ACADEMIC ACHIEVEMENTS BY GROUPS

	Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	13.392	.000	5.061305		.000	3.352	.662	2.049	4.655
Equal variances not assumed			5.044287	500	.000	3.352	.665	2.044	4.660

The assumptions of homogeneity of variances were not met (Levene's $F = 13.39$, $P < .05$). That is why the second row of Table 12, i.e. "Equal variances not assumed" is reported.



Graph. 9. Achievement Test by Groups

The result showed a significant change in achievement Test score of students due to the peer coaching, which is consistent with Richards' (2003), Sunderman & Kim's (2007), Valenzuela, Prieto, & Hamilton's (2007) and Prince, Snowden & Matthews' (2010) studies on the positive effects of peer coaching on academic achievement.

Resultant to the peer coaching, the teachers showed the highest mean score on questioning skills, focus and attention, and review and practice. However, it did not have significant effect on the teaching skills and maintaining appropriate classroom behavior. Many findings, as supported by the findings of this study, have illustrated positive impact of coaching on classroom instruction (Kretlow, Cooke, & Wood, 2012; Kretlow, Wood, & Cooke, 2011; Capizzi, Wehby, & Sandme, 2010; Newman & Cunningham, 2009; Landry, Anthony, Swank, & Monseque-Bailey, 2009; Landry, 2010), and curriculum implementation (Caverly, Vaden-Kiernan, & Fong, 2010; Spencer & Logan, 2003). Totally, the findings of this study are in consistent with related researches that focused on effect of peer coaching on students as well as teachers (Garet et al., 2008, 2011; Elmore, 2002; Little, 2001; Elmore, 2002; Scher & O'Reily, 2009; Kohler et al., 1997). However, Neufeld and Rope (2003) opposed positive effects of coaching on academic achievements as Garet et al. (2008, 2011) claimed so as to the professional development.

Investigating the effect of peer coaching on professional identity was an important step to help teachers to work cooperatively and also share their knowledge. Then, theoretically the findings contribute to the literature differently since they are revealing in two terms: teachers' professional development change on one hand and learners' academic achievements on the other, which bear promising pedagogical messages for teacher's self-development as well as others' development; their students.

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