

A Mixed-Method Inquiry into Three Techniques of Data-gathering in Language Teacher Supervision: Video-taping, Audio-taping and Field notes

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Abstract

Teacher supervision has been one of the most researched, though debated, topics in education over the past several decades (Baily, 2009). Conducting a high quality supervision can be of substantial assistance in improving teachers' instructional performance. This study was conducted to investigate the comparative effects of using three supervision techniques of data gathering including field note, audio-taping and video-taping on instructional performances of teachers and investigate the engaged parties' (teachers' and supervisors') attitudes towards utilizing them in language teacher supervision. To this end, 12 novice teachers with less than one year of teaching experience and two experienced supervisors with 12 years of teaching and supervising experience participated in the study. The teachers were divided into three groups each supervised through one of the aforementioned techniques. The results revealed that video-taping technique of teacher supervision has the most significant effects on teachers' instructional performance. Besides, teachers and supervisors have positive attitudes towards applying this technique for the data-gathering phase of supervision.

Key words: Teacher Supervision, Teacher Observation, Teacher Instructional Performance, Data-Gathering Techniques, Teacher Supervision

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Introduction

Teachers can be justifiably recognized as the most important component of any instructional program. Besides, across the policy landscape of many developed, developing, and even less developed countries, teacher quality persists to figure prominently in educational improvement (Darling-Hammond, 2013). Teachers are in the best position to make decisions that directly affect the well-being and achievement of learners (Harris & Sass, 2011). In the same way, the literature suggests that participants and processes engaged in teacher education and development positively or negatively affect learner achievement (Edwards, 2014; Grissom, Loeb, & Master, 2013). As a result, through improving the quality of teachers, education can augment fulfilling its goal of teaching, nurturing learners (Sullivan & Glanz, 2000), enhancing the quality of teaching, and subsequently enhancing the quality of education (UNESCO, 1996; Wanzare, 2012).

Burns and Richards (2009) consider education as the main concern of every nation for having a remarkable role in the worldwide affairs as well as pointing to teaching and teachers as central to this enterprise. Among many issues that may be worthy of attention in teacher education, the need to improve the quality of teaching and learning through instructional supervision is emphasized by a good number of researchers (Acheson & Gall, 2003; Glickman, Gordon, & Ross-Gordon, 2001; Oliva & Pawlas, 2004).

Teacher supervision is one of the most challenging issues in teacher education and teacher development (Baily, 2006). Moreover, the necessity of applying teacher supervision as one of the significant elements in accelerating teacher preparation (pre-service) and ameliorating the process of

teacher instructional practice (in-service) have been stressed by many researchers (Eady & Zepeda, 2007; Glickman, et al., 2005; Oliva & Pawlas, 2001; Stark, McGhee, & Jimerson, 2016).

Literature Review

Supervision in teacher education aims to help teacher education candidates prepare and enter the profession for the first time and to support practicing teachers in the development of the skills needed for effective teaching (Gebhard, 1990; Gebhard, Gaitan, & Oprandy, 1987; Ibrahim, 2013; Imig & Imig, 2006). Although student teachers and student teachers in the field often state that they learned how to teach by involving in the act of teaching in real classroom situations with a skilled supervisor to assist them and that supervised student teaching is often recognized as the most effective part of the teacher education process in their future career, more attention has been given to describing and theorizing supervisory approaches (Acheson & Gall, 1987; Clark, 1990; Freeman, 1982; Goldsberry, 1988; Sullivan & Glanz, 2000) and analysis of supervisory discourse (Hooton, 2008; Tang & Chow, 2007; Vásquez, 2004; Wajnryb, 1998). Additionally, the existence of many models may be due to the fact that current supervisory behavior is not based on careful, logical planning, and preparation and it is mainly a reactive performance (Daresh, 2001). Besides, classroom observation for the purpose of supervision was traditionally entailed the so-called story of cold war between teachers and supervisors (Akbari, Gaffarsamar, & Tajik, 2006) Therefore, much effort has been allocated to alleviating tensions and conflicts among supervisors and teachers (Bradbury & Koballa, 2008) or to

study about supervision and not the supervision itself. Supervision, in actual practice, is usually implemented through three separate processes: (1) observation, (2) analysis, and (3) feedback which are exceedingly effectual in accelerating the process of supervision and consequently teacher instructional practice.

Among the three aforementioned processes, communicating feedback productively is of paramount importance to professional learning in teacher education (Carless, 2007). In fact, to make changes in the quality of teacher instructional performance, supervision in the form of lesson observation and post-observation conference and the communication of constructive feedback is essential. Moreover, the process of providing feedback can be more facilitated if data-gathering in the observation phase of supervision is done more systematically (Baily, 2006). Besides, technological developments are influencing how supervisors and teachers collect data and communicate with each other in this age and time. Additionally, the vast majority of research about effects of technology on teacher supervision is about first language teacher education and this trend has not influenced language teacher education yet, so it remains to be seen how these technological developments affect supervision in the field of language teaching (Baily, 2009). In sum, to the best of the researchers' knowledge, no study has compared the extent to which supervision through different means of data collection refined by technological developments in teacher observation can lead to teachers' better instructional performance.

Keeping to the points mentioned, as a response to the dearth of research, the present study intends to compare traditional

technique of data collection namely field note to more recent ones (voice-recording and video-recording) regarding the effects they have on the improvement of teacher instructional performance and how different participants perceive the emergence of technology in instructional supervision. Three questions were addressed in this study which follow:

1. Is there any significant difference between the teaching performances of the teachers supervised through one of the three supervision techniques: field note, audio-taping and video-taping?
2. What are teachers' attitudes towards different techniques of supervision: field note, audio-taping and video-taping?
3. What are supervisors' attitudes towards different techniques of supervision: field note, audio-taping and video-taping?

Methodology

Participants

From among 24 teachers working in a private institute, 12 newly recruited teachers with less than one year of teaching experience were selected to participate in the study. Four of these teachers were senior English Literature students; five of them had BA degrees in English language translation and two were first-year post-graduate TEFL students. Seven teachers were female and five were male who were recruited after meeting recruitment requirements of the institute. Moreover, they attended an 30-hour compulsory teacher training course of the institute which was taught by institute supervisors and experienced teachers on subject matters such as teaching methodology, teaching language skills, classroom management, practical teaching of the books, institute's teacher supervision

checklist items, testing/scoring system, and the institute's main policies. Two experienced supervisors of the institute – both MA-holders of TEFL – were also invited to do the supervisory process of the study.

Instrumentation

Teacher Supervision Checklist

Brown's (2001) teacher classroom observation checklist, one of the popular checklists in language teacher supervision, was employed based on expert advice and practicality issues. This checklist which was constructed by Brown (2001) consists of 41 items under five main rubrics (Appendix A). The supervisors demonstrate their evaluation of each item by checking one of the four options *on a Likert scale (4=excellent, 3=above average, 2=average, 1=unsatisfactory, N =not applicable)*. Supervisors were requested to check the not applicable option if, for any reason, teacher performance could not be evaluated on that aspect so that item was omitted from total score of each teacher supervision checklist. The highest and the lowest score one could get from the supervisor evaluation was 164 and 41, respectively.

Semi-Structured Interview

A semi-structured interview was designed based on principles proposed by McDonough and McDonough (2014). The semi-structured interview was conducted with participants after data collection for the first phase of the study had been completed. The interviews lasted between 22 and 30 minutes. The purpose of the interview questions was to understand teachers' and supervisor's attitudes towards the use of three techniques of supervision in classroom observation and how they influenced teachers' instructional performance and

supervisors' practice. The interview questions were flexible to allow the participants to discuss additional points of interest. In addition, participants were directed to share their ideas with the researchers through replying to eleven questions on the following issues: *how supervision can be effective in improving teacher instructional practice, their feelings during supervisory visits, students' feelings in supervisory visits, their perception of data collection in classroom observations, their preference in selecting data collection techniques (field note, audiotaping or videotaping), the least stressful data collection techniques among aforementioned ones, the most effective data collection techniques for enrichment of post-observation conferences and their justification for that, the most effective data collection techniques for increasing the level of mutual understanding between the teacher and supervisor and their reasons, the most effective data collection techniques for reducing the so-called tension between the supervisor and teacher and the associated reasons, their views on two popular electronic techniques of data gathering (audiotaping and videotaping) and their explanation for that decision, and their preference about two ways of videotaping (camera on tripod and closed-circuit television) and its reasons.*

Data analysis

Data analysis for the quantitative phase of the study was performed using the Statistical Package for Social Sciences (SPSS), version 21. Analysis of the data included frequency counts, means, correlations, Kruskal Wallis Test, and Man-Whitney U Test. The semi-structured interviews were content analyzed. Content analysis involved "identifying, coding,

categorizing, classifying and labeling” the basic patterns and themes of qualitative data elicited from the participants (Patton, 2002, p. 463). Interview texts were divided into meaningful segments and coded into schemes and categories (Cohen, Manion, & Morrison, 2007). Coded segments of the text and documents were reviewed for “recurring phrases or common threads in informants’ accounts or, alternatively, for internal differences” (Miles & Huberman, 1994, p. 61) to develop themes and patterns. Themes reflect recurrent features of the findings and patterns reflect possible relationships among phenomena (Cohen et al., 2007). Finally, the frequency of the themes was counted in the teachers’ responses and further explanations regarding each answer were written down and reported.

Design and Procedure

Regarding the design of the study, a mixed-method research design was followed in that regarding the weighting of the study a QUAN + qual approach and regarding the timing of the study a QUAN → Qual approach was followed. Twelve novice teachers’ classes in young-adult elementary levels were chosen and the third sessions of their classes were videotaped by a digital camera on tripod. Then the teachers were randomly divided into three groups namely field note group, audiotaping group, and videotaping group

and the two supervisors of the institute were randomly assigned to observe three sessions of each class through the three given techniques. The supervisor in field note only used the institute’s adopted teacher observation checklist. In audiotaping group, the supervisor attended the class and audio-recorded that session by a personal digital assistant (PDA). The three sessions of videotaping group were recorded and given to the assigned supervisor to watch and comment based on the institute’s observation checklist. Each supervisor observed six teachers’ classes in sessions seven, ten, and thirteen and held a post-observation conference with the teacher before the next observation session. Finally, session sixteen of all classes were videotaped. Later, these video files were given to two supervisors to watch and evaluate each teacher’s instructional performance based on Brown’s (2001) observation checklists separately and data were analyzed using SPSS, version 21.

Results

Instructional performances of teachers prior to intervention

The video files of the instructions of teachers in the three groups were evaluated by the supervisors and the average scores from the checklist, were analyzed. The results are presented in Tables 1 and 2 below:

Table 1. The Mean Rank for the Three Groups’ Performance Prior to Intervention

	Group	N	Mean Rank
Pretest	Video-taping Group	4	5.88
	Audio-taping Group	4	6.50
	Field note Group	4	7.13
	Total	12	

Table 2. Kruskal Wallis Test for the Three Groups' Performance Prior to Intervention

Pretest	
Chi-Square	.243
Df	2
Asymp. Sig.	.886

$p \leq .05$

Table 1 indicates that for Video-taping Group, Audio-taping Group, and Field note Group, the mean ranks are 5.88, 6.50, and 7.13, respectively. Table 2 presents the results of the Kruskal-Wallis Test which revealed that there is no statistically significant difference in teacher instructional performance across three different supervision technique groups prior to intervention (videotaping group: MR = 5.88, audiotaping group: MR=6.50, field note

group: MR = 7.13), $\chi^2 (2, n = 12) = 0.243, p = .886$.

Instructional performances of teachers after intervention

The instruction video files of the teachers in the three groups were evaluated by the supervisors and the average scores from the checklist were analyzed. Tables 3 and 4 present the results of the analyses.

Table 3. The Mean Rank for the Three Groups' Performance Prior to Intervention

	Group	N	Mean Rank
Posttest	Video-taping Group	4	10.25
	Audio-taping Group	4	4.38
	Field note Group	4	4.88
	Total	12	

Table 4. Kruskal Wallis Test for the Three Groups' Performance after Intervention

Posttest	
Chi-Square	6.552
Df	2
Asymp. Sig.	.038

Table 3 indicates that for Video-taping Group, Audio-taping Group, and Field note Group, the mean ranks are 10.25, 4.38, and 4.88, respectively. As shown in Table 4, results of the Kruskal-Wallis test revealed that there is a statistically significant difference in teacher instructional performance across three different supervision technique groups after the

intervention (videotaping group, MR = 10.25, audiotaping group, MR=4.38, field note group, MR = 4.88), $\chi^2 (2, n = 12) = 6.552, p = .038$. Besides, it represented a large-sized effect $r = .59$.

Tables 5, 6 and 7 demonstrates the results of Mann-Whitney U Test to pinpoint where differences lie through the comparison of each group with one another (Table 5: audio-

taping group vs. field note group, Table 6: and Table 6: video-taping group vs. field
 video-taping group vs. audio-taping group, note).

Table 5. Mann-Whitney U Test for Audio-taping Group and Field note Group Comparison

	Posttest
Mann-Whitney U	7.500
Wilcoxon W	17.500
Z	-.145
Asymp. Sig. (2-tailed)	.885
Exact Sig. [2*(1-tailed Sig.)]	.886

$p \leq .05$

The Mann-Whitney U Test revealed no significant difference in the instructional performances of teachers who were supervised through audio-taping technique and those supervised through field note technique (U = 7.5, z = -.145, p = .885).

Table 6. Mann-Whitney U Test for Video-taping Group and Audio-taping Group Comparison

	Posttest
Mann-Whitney U	.000
Wilcoxon W	10.000
Z	-2.309
Asymp. Sig. (2-tailed)	.021
Exact Sig. [2*(1-tailed Sig.)]	.029

$p \leq .05$

The results of the Mann-Whitney U test revealed a significant difference in the instructional performance of teachers supervised through video-taping technique and those supervised via audio-taping technique (U = .000, z = -2.309, p = .021).

Table 7. Mann-Whitney U Test for Video-taping Group and Field note Group Comparison

	Posttest
Mann-Whitney U	1.000
Wilcoxon W	11.000
Z	-2.021
Asymp. Sig. (2-tailed)	.043

Exact Sig. [2*(1-
tailed Sig.)] .057^b

$p \leq .05$

The Results of the Mann-Whitney U test revealed a significant difference in the instructional performance of teachers supervised through video-taping technique and those supervised via field note technique ($U = 1.000, z = -2.021, p = .043$).

Teachers' attitudes towards different techniques of supervision

At the end of quantitative phase of the study, a semi-structured interview was conducted to understand the 12 participants' attitudes towards video-taping, audio-taping, and field note techniques of supervision. The audio files were transcribed and analyzed regarding each of the 11 questions of the interview separately.

In response to the question '*How can supervision conducted through classroom observation be effective in improving teacher instructional practice?*' all respondents emphasized the effective role of teacher supervision and pointed to supervisors' negative and positive points, sharing experience and opinion, monitoring teaching process, correcting teacher's mistakes and special attention the teachers' instructional performance receives as the advantages of supervision and how it can be effective in enhancing teacher instructional performance. As an example, teacher A said:

Through supervision the applied classroom procedure is controlled by the supervisor as an outsider so the plus and minus points are recognized better. Teachers and supervisors can share their ideas and experiences. (Authors' Translation)

In response to the question '*How do you feel during the supervisory visits? Why?*' All the teachers indicated that they bear a lot of stress during supervisory visits and mentioned *fear of having unsatisfactory performance, losing their face and making mistakes in speaking* as the common reasons.

As an example, teacher B commented:

I am always stressed out during the supervisor's visits and it sometimes affects my voice, facial appearance and movements. I do my best not to think about and take it as something normal, I even try to make myself believe that it is unimportant but it doesn't work. (Authors' Translation)

In response to the question '*How do the students feel during the supervisor's visits? How do you understand these changes in students' feelings and behaviors?*' all of the interviewees stated that students are also under stress and ten teachers mentioned that some of the students even think that the supervisor is observing their performance. Respondents pointed to *students' unusual silence, increment in making mistakes, unwillingness to participate in class activities and breathing a sigh of relief when the supervisors have left the class* as evidence for students' anxiety during the supervisor's visits. As an example, teacher C stated:

I believe that any unusual event may have positive or negative effects on class and its participants. Students are susceptible to and curious about any outsider's attendance so they may lose their concentration and become

stressed out. It was interesting that some of the students asked me if their performance in the class was satisfactory as they thought they were under supervision. (Authors' Translation)

In response to the question '*How do you perceive supervisors' data collection during classroom observation?*' all of the participants emphasized the importance of data gathering during the supervisory sessions since the supervisor may forget classroom events which are necessary to be discussed in the post-observation conference if he only relies on his memory. Besides, they indicated that it is one of the reasons for the teacher and the student being stressed during supervisory visits. So it may negatively affect classroom atmosphere and its participants' performance. As an example, teacher D stated:

Data collection during classroom observation is a must since without having the comprehensive and detailed report of the classroom events and teacher's procedure, the supervisor cannot come up with an effective critical review of them. (Authors' Translation)

In response to the question '*which technique(s) of data collection would you prefer: field note, audiotaping or videotaping? Why?*' eleven respondents preferred video-taping for supervision and only one chose audio-aping. Participants referred to having access to classroom events and teacher's classroom approach, high reliability and validity of this technique of supervision, less stress associated with this technique, precise supervisor's comments, opportunities for self-reflection, opportunities to compare teacher's instructional performances during his or her

career as the reasons for their preference. As an example, teacher A remarked:

Video-taping, of course. This facilitates both supervisor and teacher with a great function of being able to watch the classroom procedure for as many times which contributes to having better perception of the classroom events and teacher's performance as a result the supervisor's comments become more precise and comprehensive. (Authors' Translation)

In response to the question '*which of the aforementioned techniques is the least stressful for teachers? Why?*' the twelve participants chose audio-taping without supervisors' attendance as the least stressful technique since it does not give the supervisor a clear picture of the class procedure so the supervisor cannot recognize a lot of possible negative points of teacher's performance. As an example, teacher E believed:

I think audio-taping since it does not give the supervisors a vivid image of the class since the supervisor should always refer to what they can remember about the class procedure. (Authors' Translation)

In response to the question '*which of the aforementioned techniques is the most effective in enriching post-observation conferences? How?*' all 12 novice teachers in this study argued that video-taping is the most effective in enrichment of post-observation conference for the following reasons: a) classroom procedure can be watched over and over, b) post-observation conference is lengthier, c) supervisors are more certain on their comments and d) checklists are filled out more meticulously. As an example, teacher K mentioned:

I think video-taping has everything a supervisor needs for a good supervision. (Authors' Translation)

In response to the question '*Can any of the data gathering techniques of classroom observation increase the level of mutual understanding between the teacher and supervisor more than the others? How?*' eight participants referred to video-taping and emphasized the possibility of watching the classroom video by teacher and supervisor, better understanding of supervisors' comments by teachers since they can also watch the video and precision of the supervisor's comments. Among the twelve respondents, four of them pointed to field note techniques as a technique which can augment teacher and supervisor's mutual understanding. These teachers referred to supervisor's participation in the classroom atmosphere as factors which can to a large extent enhance mutual understanding between the teacher and supervisor. As an example, teacher J commented:

Mutual understanding can be strengthened through having comprehensive apprehension of classroom practice and I think this is more accessible by applying video-taping due to having the chance of several observations individually or with both parties and removing the hesitation in supervisory process. (Authors' Translation)

As for the question '*Among the three techniques of data gathering in classroom observation, which one do you think can reduce the so-called tension between the supervisor and teacher the best? Why?*' six teachers thought video-taping can decrease the tension between the supervisor and the teacher, as the absence of the supervisor in

the class, high reliability of the supervisor's comments and possibility of reviewing the video in case of any disagreement can lessen this tension. Four of the respondents stated that field note can be a better solution for decreasing this tension because face-to-face encounter is always helpful in the betterment of relationships. However, two of the interviewees claimed that applying audio-taping technique of data gathering automatically reduces the so-called tension since the supervisor's comments are holistic and controversial details are omitted from the post-observation. As an example, teacher H commented:

To answer this question, we should find the sources of this tension which is pressure the teacher tolerates during supervisory visits and the misunderstanding supervisor may have since keeping up with class pace and doing the data gathering is usually difficult; as a result some of supervisor's comments are not based on their memory. (Authors' Translation)

In response to the question '*if you are to decide on the electronic techniques of data gathering from classes for the purpose of supervision which technique would you choose: audiotaping or videotaping? Why?*' all the twelve respondents argued that audio-taping is not a reliable technique of data gathering since it does not give the observer the chance of having a critical view of visual parts of the teacher performance like body language, mime, eye contact, classroom movement, teacher student interaction, classroom management and so on. So they believed that although they are less stressed in using audio-taping, video-taping can give the supervisor a better chance of supervision and guiding them in having a more effective

instructional performance. As an example, teacher H said:

I prefer audio-taping to any other techniques but frankly speaking I do not think it is as helpful as video-taping for the supervisor in having an accurate and precise image of the teacher's performance. (Authors' Translation)

As for the question '*regarding videotaping of classes, what kind of recoding do you prefer: camera on tripod or closed-circuit television? Why?*' all of the interviewees preferred temporary existence of the camera to a permanent one as they thought the closed-circuit television negatively affects the normal atmosphere of the class, hinders the chance of the teacher's and students' creativity, and dominates stress of being supervised through entire class sessions from beginning to the end. Besides, eight teachers perceived permanent existence of video-cameras as the sign of disrespect. As an example, teacher D mentioned:

I choose camera on tripod. Not only does teacher's feeling of being supervised every session not assist the supervisor to fulfill the goals of supervision but also exacerbate the tension between the teacher and supervisor. (Authors' Translation)

Supervisors' attitudes towards different techniques of supervision

At the end of quantitative phase of the study a semi-structured interview was conducted to understand the two supervisors' attitudes towards video-taping, audio-taping, and field note techniques of supervision. The audio files were transcribed and analyzed regarding each of the 11 questions of the interview separately.

In response to the question '*How can doing supervision through classroom observation be effective in improving teacher instructional practice?*' the two participants stated that teaching and supervising are two sides of the coin of effective instructional performance. They believed like any other profession, there are some ins and outs and well-established principles for the teaching profession that supervisors, with their expertise and experience, can guide pre-service or in-service teachers towards more advantageous practice. Novice teachers' rudimentary reliance on their natural disposition and learning experience is an innate challenge that may end in bad practice if it is not monitored and refined through classroom observation. As an example, supervisor A mentioned:

Teachers and supervisors' roles are complementary. In other words, teachers try their best to employ the best practice to help the student learn whatever the subject matter is and supervisors try to facilitate this process by giving feedback to them based on their knowledge of the language and instruction. (Authors' Translation)

In response to the question '*How do you feel during the supervisory visits? Why?*' the two participants of the study believed that conducting supervision is stressful since they should keep up with the classroom events while they are gathering data, they must be as accurate as possible, and they should have an appropriate tone in their writing. Besides, they mentioned that post observation conferences are the most challenging part of their job as they try to help teachers adopt better classroom practices through giving feedback and constructive criticism and this is not fulfilled unless the supervisor has the

teacher's trust. As an example, supervisor A mentioned:

No one can deny the stress the profession carries with itself. You are the supervisor and teachers have the expectation of being doctor-know-it-all which is impossible. Moreover, the supervisory process is really stressful since haphazardness in data gathering, making mistakes, having a tone of superiority, and not being careful enough in seeing all the facets of classroom events have negative effects on building trust between supervisors and the teachers. (Authors' Translation)

In response to the question *'How do the students feel while supervisory participations happen? How do you understand these changes in students' feelings and behaviors?'* the two supervisors claimed that students, based on their personal characteristics and age, react differently. Some may be even more encouraged to participate actively in class discussions, some are indifferent to this unconventional attendance, and some become passive during the supervisory sessions. Generally, they believed that their participation has more effects on children and young-adults and less effects on adults. As an example, supervisor A stated:

Any unusual practice may carry stress to the class but I think that students treat my participation differently; some of them are really friendly, some do not look at me, and many are indifferent. Of course, their age and personality traits affect the way they react but I do my best that my attendance does not have negative effects on classroom procedure and its participants (Authors' Translation).

As for the question *'How do you perceive supervisors' data collection during classroom observation?'* the interviewees mentioned that two main parts of their job are data collection and giving feedback. They emphasized that they can accomplish the prominent objective of supervision which is applying more effective instructional practice without collecting data through classroom observations. They referred to thorough and comprehensive data gathering as the prerequisites of conducting effective post-observation conference which has a crucial role in changing teachers' instructional performance for the better. As an example, supervisor B commented:

Some teachers may not like watching supervisors taking notes while observing the class as they have the wrong perception of any note taking means putting down the minus points while most supervisors, apart from reporting the plus and minus points, take care of the classroom procedure (Authors' Translation)

In response to the question *'which technique(s) of data collection would you prefer: field note, audiotaping or videotaping? Why?'* the two supervisors referred to video-taping as the best technique of data collection but they preferred to keep the option of field note also on the table since sometimes it is necessary to attend the class and observe teachers' performance and classroom procedure personally. They stated video-taping is their preference since it takes the load of keeping up with the classroom events off their shoulders and memory, there is no need to arrange and rearrange

their schedule for observation, they can have as many reruns as they wish and skip some moments of the class video which are of no supervisory value, the video file facilitates the process of sharing their ideas with other supervisors and the teachers, through the films the process of teachers' progress pace can be observed, it is a reliable documentation and the topnotch teachers' instructional performance can be used as a good training for the novice teachers. One of the supervisors mentioned that since he was not concerned about falling behind the classroom procedure in note taking, he recognized some of the problems of the teaching materials which he could not observe. As an example, supervisor B stated:

Using camera in classes was the greatest innovation I have come to see since I started supervision twelve years ago. I cannot have any predictions of how many experienced teachers perceive it but in the case of novice teachers it was great and very effective in changing teachers' performance for the better. (Authors' Translation)

In response to the question '*which of the aforementioned techniques (field note, audiotaping, and videotaping) is the least stressful for teachers? Why?*' the participants chose audio-taping technique without supervisors' participation and they stated that as much as less stress carrying technique it is, it is less effective in the data-gathering phase. They believed this technique is stressful because teachers know that when supervisors have only access to audio files, they cannot have a comprehensive prospect of classroom events and their performance so

they have to stick to some general comments.

As an example, supervisor A commented:

My answer is audio-taping without supervisors' participation. Using this technique, supervisors may have a vague and unreliable image that needs great power of imagination on their side to analyze teachers' performance. (Authors' Translation)

As for the question '*which of the aforementioned techniques (field note, audiotaping, and videotaping) is most effective in enriching post-observation conferences? How?*' the two supervisors claimed that since feedback sessions are of little value without collecting sufficient data from classroom observation, they chose video-taping. They believed that the post-observation conferences held after watching the video file of the class were lengthier, more comprehensive, and with less tension. As an example, supervisor B stated:

Video-taping is the best. It was really convenient for data gathering and analyzing the classroom procedure. Applying this technique, I could manage to fulfill most of the objectives I had in mind as a supervisor. I could accumulate the data needed from the teacher classroom instruction with high level of details and certainty, complete the teacher supervision form completely in details with lots of examples from teachers' performance, and have a less challenging session with the teachers. (Authors' translation)

In response to the question '*Can any of the data gathering techniques of classroom observation (field note, audiotaping, and videotaping) increase the level of mutual understanding between the teacher and*

supervisor more than the others? How?’ the supervisors argued that mutual understanding can increase when they watch the video file of teachers’ practices together. They believed those techniques of data-gathering which bring about a high level of mutual understanding between teachers and supervisors in teacher supervision are more effective in enhancing the quality of teachers’ instructional performance. This high level of mutual understanding is attainable through finding better means of getting acquaintance with ideas and thoughts. The possibility of sharing and analyzing a teacher’s classroom performance in his or her presence, via video files, facilitated the process of supervision and transformation of experiences. As an example, supervisor A argued:

Although using different techniques of data gathering affects the quality of data you collect from the teacher’s practice, it may not have direct effects on mutual understanding which is of great necessity for communicating opinions. (Authors’ Translation)

About the question *‘Among three techniques of data gathering in classroom observation, which one do you think can reduce the so-called tension between the supervisor and teacher the best? Why?’* both of the interviewees commented that some degree of tension between the teacher and supervisor can be observable during various phases of teacher supervision but one of the supervisors believed that the tension can be reduced through using field note as the more teachers and supervisors visit each other, the less nervous they feel during supervisory visits or post-observation conferences and the other one claimed that techniques such as video-taping can reduce this tension since the less face-to-face interaction the supervisors and teachers have the less

stressed they are. As an example, supervisor B stated:

In my opinion, the tension can become less prevalent in the teacher and supervisor interaction when they have more face to face communication. I think the teachers and supervisors can feel less tension through strengthening their relationship which is more achievable via actual supervisor’s participation and taking field note in the real classroom situation. (Authors’ Translation)

In response to the question *‘if you are to decide on the electronic techniques of data gathering from classes for the purpose of supervision which technique would you choose: audiotaping or videotaping? Why?’* respondents emphasized video-taping as the more effective electronic technique of data gathering which facilitates teacher supervision through making the audio and video of the classroom practice accessible to the supervisors. As a result, supervisory approach can be enhanced and its goals are more at hand while video-taping options are available. As an example, supervisor A said:

I prefer video-taping technique. Actually my experience with using audio files was monotonous, time-consuming and useless. Believe me or not, I sometimes fell asleep while I was listening. The situation was completely different for video files and it looked like getting access through a magic window to the classes full of energy and life. (Authors’ Translation)

In response to the question *‘regarding videotaping of classes, what kind of recording do you prefer: camera on tripod or closed-circuit television? Why?’* the two supervisors

preferred camera on tripod. They referred to teachers' feeling of disrespect for their privacy, the tension closed-circuit television brings to the class atmosphere, feeling of mistrust that may occur, and artificiality of classroom procedure as some of the problems that permanent installation of camera in classroom can cause. Therefore, they thought that although video-taping can be of great contribution to teacher supervisory process and consequently more effective teacher instructional performance, these objectives can be fulfilled better through temporary use of video-taping equipment. As an example, supervisor B emphasized:

I do not agree with using CCTV in classes under the pretext of supervision. Video-taping is an amazing technique but we should not forget that we do all we do to improve the situation through teachers' help and I do not see any reason for putting them under stress or make the class situation artificial and unbearable for them. (Authors' Translation)

Discussion

The first research question explored whether there were differences between teachers' instructional practices supervised through video-taping, audio-taping, and field note techniques of teacher observation. The results pointed to a significant difference between the three groups. While no significant difference was observed between audio-taping and field note groups, the instructional performance of teachers in video-taping group was significantly better compared to audio-taping and video-taping groups.

This finding is congruent with previous studies (Calandra et al., 2006; Christ et al., 2017a; Gruenhagen et al., 1999; Thomson & Hawk, 1996; Tripp & Rich, 2012a; Van Es, 2012)

Regarding the difference between the instructional performance of teachers in the video-taping group compared to the audio-taping and field note groups, a number of reasons could be adduced. The first reason could be that reduction of stress and tension in supervision which has been emphasized in the literature (Baily, 2006; Thomson & Hawk, 1996; Gruenhagen et al. 1999). They argued that teachers always view stress as hindering their instructional performance and they imply that supervisors' attendance exacerbates the situation. Therefore, video cameras can be a reliable and accurate substitute for actual supervisors' participation which can be a potential cause of stress.

The second reason could lie in the opportunities for reviewing as many times as needed that is provided through video-taping. Christ et al. (2017b) considered reviewing as one of the prominent advantages of video-taping technique over other supervisory techniques in teacher supervision. They mentioned that this quality freed supervisors from the limitations of keeping up with the instructional pace of the class and consequently all aspects of teacher instructional performance received the right amount of attention by supervisors. Besides, supervisors were not forced to hastily consider several matters so that they could take care of a higher number of issues. They found many opportunities to discuss all the matters in details in their observation forms, maneuver on the troublesome issues thoroughly, and subsequently increase the effectiveness of the post-observation

conferences without having to rely on their memory.

Having a more exhaustive observation is the third reason that could be stated which has been indicated in the earlier studies (Tripp & Rich, 2012b; Van Es, 2012). Since the supervisor who has access to the video files does not have to bear the stress of keeping up with the instructional pace, they feel no limitations to go beyond observing the teachers' instructional performance and look for the sources of less effective instructions and malfunctions in the class procedure. Video-taping technique provides supervisors with the chance of having a more thorough look at other effective factors in teachers' instructional performance such as instructional materials, pedagogical curriculum, syllabi, and teacher-student rapport. As a result, teacher supervision which was just a matter of formality in most of the cases turn out to be a profound process and not only could it improve teachers' performance but also it could develop changes in adopted curriculum, syllabus, and materials.

Another reason which is potentially effective in supremacy of video-taping technique of supervision over other techniques is the possibility of self-reflection. Calandra et al. (2006) explained that teachers' instructional performance was enhanced through video-taping technique. Moreover, the effectiveness of self-reflection, through video-taping, in the betterment of teachers' instructional performance has been stressed by many researchers (Tripp & Rich, 2012b); the present study, however, could not take it into consideration due to feasibility.

The second question explored teachers' attitudes towards different techniques of supervision: field note, audio-taping and video-taping. The results which were

obtained through analyzing the semi-structured interviews indicated that most participants had positive attitudes towards supervising via video camera on tripod. Besides, the findings suggested that even though audio-taping without supervisors' attendance was the least stressful technique of data-gathering in supervision, the accumulated data were not as accurate and detailed as in video-taping technique. Interviewees also argued that the post-observation conferences which were held based on video-taping were of a high level of mutual understanding between the supervisors and supervisees and highly enriched concerning the instructional issues. The findings are congruent with the previous studies (Cameron & Wilson, 1993; Copeland, 1980; Kleinknecht & Schneider, 2013). Regarding the teachers' positive attitudes towards video-taping technique of data-gathering in teacher supervision, a number of reasons could be adduced under four headings including teacher's attitudes towards nature of supervision, teachers' and students' feelings towards techniques of supervision, quality of post-observation conferences and video-taping techniques of conducting supervision.

Although it may seem a bit surprising that teachers, especially novice teachers, emphasizes the necessity of supervision and data gathering in supervisory sessions, the findings of the current study vis-à-vis the teachers' attitudes towards the nature of supervision casts light on the fact that the necessity of supervision is undeniable. Teachers might bear the stress of being under supervision but the unwelcome process of supervision could enhance their instructional performance and accelerate their development in this career. On the other hand, teachers demonstrated that data

collection in supervisory sessions was a must though they referred to it as the potential cause of their stress. The findings of this study are almost in line with previous studies (Cameron & Wilson, 1993; Copeland, 1980; Kleinknecht & Schneider, 2013) which argued in the favor of inevitability of teacher supervision and teachers' positive attitudes towards supervision administration despite their criticisms regarding how it should be implemented.

Stress is an inseparable part of supervision that is emphasized by almost any teacher. In the present study all teachers referred to stress and tension which might negatively affect teachers' instructional performance, learners' class activity and teachers' and supervisors' interaction. That teachers and learners are under stress during supervisory visit has been supported by many authors (Baily, 2006; Glanz & Zepeda, 2016; Glickman et al., 2005; Grissom et al., 2013; Marzano et al., 2011; Oliva & Pawlas, 2004; Sullivan & Glanz, 2000; Tang & Chow, 2007; Wanzare, 2012; Zepeda, 2007). However, teachers in this study chose audio-taping without supervisor's participation as a less stressful technique since it provides supervisors with some vague information about the class in contrast to video-taping as the most effective technique which equips supervisors with details of their instructional performance without any limitations of time and place. Thus, this finding may reveal that teachers have come to understand the paramount status of supervision in brushing up their instructional performance and they know how reliable techniques like video-taping can ameliorate it; nonetheless, they are exploring less stressful techniques that in addition to achieving improvement in their instructional performance, they can also decrease tension and stress. Video-taping

was chosen by the participants of this study since along with offering a clear image of class events, it can cross out the necessity of supervisor's participation which is the main source of stress.

The quality of the post-observation conference and its significant effects on teachers' instructional performance have been highlighted by a number of researchers (Arikan, 2004; Copland, Ma, & Mann, 2009; Mann & Copland, 2010; Vásquez, 2004; Vásquez & Reppen, 2007). This fact was also emphasized by the participants of this study. The teachers claimed that the post-observation conferences following the video-taping technique were more comprehensive and lengthier. Moreover, they mentioned that supervisors' attention to details were one of the factors indicating a drastic difference between these conferences and those in other techniques of data gatherings and it moved the post-observation conferences to a level beyond bureaucracy and formality.

All in all, it can be inferred that supervisors were more confident during these conferences, more time was allocated in each conference and the report sheets and checklists were more detailed and comprehensive than before, and also teachers' attitudes towards using video-taping technique was positive. Teachers might have the reassuring feeling that supervisors had thoroughly examined the videos prior to conferences and the brought-up issues were based on meticulous watching and re-watching of their instructional performance instead of holding perfunctory sessions for the sake of fulfilling their duties superficially. Modern technologies are mostly welcomed by teachers and they perceive them as a support for developing their instructional effectiveness (Al-Zaidiyen, Mei, & Fook, 2010; Albirini, 2006;

Demirci, 2009; Kinzie & Delcourt, 1991; Teo, 2008).

Teachers agreed that video-taping brought about outstanding advantages for enhancing their instructional performance through supervision; nevertheless, they argued that they did not intend to have the threat of being supervised in any session like a sword of Damocles. Teachers' negative reaction to circuited cameras in their classrooms casts light on the fact that there seems to be a wall of mistrust between teachers and supervisors and this may originate from their innate negative attitudes towards any kind of supervision. Moreover, circuited cameras can augment tension between teachers and supervisors and hinder teachers' instructional creativity.

The third question examined supervisors' attitudes towards different techniques of supervision: field note, audio-taping and video-taping. The results indicated that even though the participants had positive attitudes towards supervising via video camera on tripod, they preferred to keep the option of class participation for conducting supervision open since they thought in certain cases their attendance in class could assist them in having a more comprehensive understanding of classroom situation and teachers' classroom approach. Besides, the findings suggested that even though the audio-taping without supervisors' attendance was chosen as the least stressful technique of data-gathering in supervision, the burden of making heads or tails of the time-consuming process of listening to audio files and comparing them with their imaginary memory was on supervisors' shoulder. Supervisors also claimed that the post-observation conferences based on video-taping were remarkable for mutual

understanding between the supervisors and teachers.

Supervisors argued in the favor of the necessity of supervision and in fact they insisted that the effectiveness of novice teachers' instruction was to be studied and discussed since most of their first decisions were based on natural disposition and learning experiences. They indicated that efficiency of analyzing, discussing, criticizing and coaching as integral parts of supervision are not guaranteed unless they are based on meticulous data gathering techniques. The finding suggested that the necessity of supervision, stressed by all engaged parties, should be accomplished through applying a technique of data gathering with a high degree of reliability and validity; otherwise, supervision would end in no tangible success.

Supervision, as the so-called history of nervous teachers trying to perform well before supervisors sitting back in the last row of the class (Akbari et al., 2006), has not even won favor with supervisors. They believed that they bore a lot of stress in the data gathering phase during supervisory visits to keep with the instructional pace and events, being cognizant of their writing in their reports and finally holding the most challenging part of their job which was post observation conference. It can be inferred that a large percentage of this stress originated from the employed techniques of data gathering which can relieve supervisor from being stressed by having the feature of playback. This feature, provided by video-taping technique, makes it possible for the supervisors to rewatch the classroom events as many times as needed. In this way, the load of managing the note-taking, observing the classroom events and teacher's instruction is off the supervisors' shoulders. Moreover, the post-observation conferences which were

considered by supervisors as the most challenging phase of supervision process can be facilitated through techniques of data gathering such as video-taping. In addition, sharing extracted video parts can also augment this facilitation in changing teachers' instructional performance for the better.

The result of analyzing supervisors' responses about quality of post observation conferences indicated that videotaping technique of data gathering ameliorated their growing concerns since the data gathering phase, as the main component of supervision, was meticulously implemented through using vide-recording technique. In this way, supervisors might deprive themselves of actual observation of class events and teachers' instruction but the offered features of video-taping technique was deemed worthwhile and the quality of post observation conferences were enhanced through promoting supervisors' and teachers' mutual understanding, teachers' sense of trust and length of sessions.

Besides, the two supervisors argued that weaknesses and troublesome issues in the institute's curriculum and syllabus were discovered through video-taping for teacher supervision which could not have been recognized through applying other supervision technique of data gathering. This might originate from the fact that supervision process conducted via video files frees the supervisors from the stress of managing multiple jobs at a time and missing some incidents. As the result, through the possibility of re-watching, the supervisors are able to concentrate on the causes of bad instruction instead of just diagnosing and considering the effects.

Circuited camera or permanent existence of cameras in classes for teacher had not won

any favor among supervisors either. This may be due to the fact that conducting supervision of any kind can be the source of anxiety among participants (teachers, supervisors and students) thus innovation in this process should be warmly welcomed as far as it alleviates the mistrust atmosphere. In other words, although the permanent existence of cameras may accelerate the administration of supervision process and scheduling for both supervisors and school administrators, teachers prefer video cameras on tripods since they cause less stress and tension between teachers and supervisors and makes supervision more effective. (Kleinknecht & Schneider, 2013).

Conclusion

In the quantitative phase of this study, results indicated that regarding effect of supervisory techniques on teachers' instructional performance, there was a significant difference between the three groups of video-taping, audio-taping, and field note teachers after using three techniques while no significant difference was found prior to the intervention. The results of comparing three groups in pairs also indicated no significant difference between the audio-taping and field note groups' instructional performance though a significant difference was found between these two groups and video-taping, with the video-taping group outperforming audio-taping and field note teachers. In the same way, in its qualitative phase, this study demonstrated considerable positive aptitudes among teachers and supervisors towards applying video-taping technique of data gathering in teacher supervision. The findings suggested some advantages of video-taping such as reduction of stress during supervisory visits among engaged

participants (teachers, supervisors and students), promoting mutual understanding and supervisors' control over classroom incidents to the details as well as reduction of tension in post observation conferences, supervisors' comprehensive treatment of causes and effects of weak instruction.

Overall, the findings of quantitative phase and qualitative phase of this study are

congruent with each other and shed light on the assumption that using video-taping technique for teacher supervision enhances and facilitates the process of improvement in teachers' instructional practice since this technique is more effective and teachers and supervisors have positive attitudes towards it which itself can augment its effectiveness.

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بررسی تلفیقی سه تکنیک نظارت بر عملکرد آموزشی معلمان زبان: یادداشت‌برداری میدانی، ضبط صوت و ضبط ویدیو

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چکیده

در چند دهه اخیر تربیت معلم یکی از حیطه‌هایی بوده است که تحقیقات گسترده‌ای در آن انجام شده است. مسئله نظارت درست یکی از حیطه‌های مربوطه است که می‌تواند نقش بسزایی در عملکرد آموزشی معلمان داشته باشد. این مطالعه به بررسی مقایسه‌ای سه تکنیک نظارتی شامل یادداشت‌برداری میدانی، ضبط صوت و ضبط ویدیو در عملکرد آموزشی معلمان پرداخته و همچنین نظرات معلمان و ناظران در خصوص استفاده از این تکنیک‌ها را مورد بررسی قرار می‌دهد. به این منظور، ۱۲ معلم دارای کمتر از یک سال تجربه تدریس و دو ناظر با تجربه بالای ۱۲ سال در این مطالعه شرکت کردند. معلمان به سه گروه تجربی تقسیم شدند که هر کدام از طریق یکی از تکنیک‌های فوق‌الذکر نظارت می‌شدند. مقایسه نتایج نشان داد که تکنیک ضبط ویدیو تأثیر بیشتری بر عملکرد معلمان داشت. به علاوه، معلمان و ناظران نظرات مثبتی درباره به‌کارگیری این تکنیک دارند.

واژه‌های کلیدی: نظارت، عملکرد آموزشی معلمان، تکنیک‌های نظارت

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