An Evaluative Study of Practice of Stimulus Variation Skill of Secondary School Teachers in Khyber Pakhtunkhwa, Pakistan

* Salman Khan, PhD Scholar (Corresponding Author)

** Wazim Khan, Professor

*** Muhammad Ayaz, PhD Scholar

Abstract

This study is to evaluate the practice of stimulus variation skill (SVS) of Secondary School Teachers (SSTs) in Khyber Pakhtunkhwa (KP). The objective of the study was to examine the practice of SVS of SSTs in the teaching-learning process. Data was collected through observation for which rubric was developed. The population consists of 5537 male SSTs of KP. 160 SSTs were taken as a sample of the study from four districts i.e. Peshawar, Mardan, Charsadda, and Nowshera. A convenient sampling technique was applied to the study. The study was qualitative and descriptively analysed. The data were analysed descriptively by applying percentages. Results revealed that SVS plays a significant role in the attainment of the students' attention, however, most of the respondents could not appropriately, effectively, and properly practiced the SVS to attain and retain the students' attention to learning. The study recommended that in-service teachers training should be arranged by PITE, RITE, and other concerned organizations to improve the practice of SVS of teachers. This study was significant for the stakeholders in the department of education including policymakers, curriculum planners of teacher education, teachers, and students.

Keywords: Microteaching, SVS, Components of SVS, Teaching Skills and In-Service Trainings

Introduction

Education is the principle of success and development. Educationists' viewed that good teachers can be produced through education and practice. Delivering instruction has now been very complex and the teachers of the present age are in need to apply more teaching skills to perform their assigned role. Teaching skills are important tools in the hands of teachers that they acquire and possess to keep their teaching effective and valuable. In the contemporary era of the teaching-learning process novice techniques, skills and innovations emerged. Today's teachers are required the latest knowledge and techniques of teaching. Microteaching is an innovative technique that emerged in the mid of 21st century desired to equip prospective teachers to disseminate knowledge effectively. Microteaching consists of different skills and SVS is one of its most significant skills.

Ab initio, the skill was restricted to prospective teachers, however, nowadays it has become a more significant instrument for sharpening the teaching skills of the in-service teachers. The contemporary educationists have also applied microteaching for amelioration of the teaching skills of in-service teachers. Sunday (2015) in his article argued enrolled teachers must participate in teaching-related workshops, conferences and seminars at least once per annum. He further claims that currently, it is mandatory for serving teachers to update their knowledge according to the current needs of education.

Microteaching training techniques can be employed for prospective and on job teachers to nourish them in their profession (Allen & Ryan, 1969). According to Cooper and Allen (1970) that microteaching has momentous usage for prospective teachers but Allen (1966) has recommended numerous usages of microteaching for the enrolled teachers also. Kaushal (2017); Mayhew (1982);

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* Department of Education, Qurtuba University of Science and Information Technology, Peshawar
  Email: stenonsr@gmail.com
** Department of Education, Qurtuba University of Science and Information Technology, Peshawar
   Email: wazimnj@yahoo.com
*** Department of Education, Qurtuba University of Science and Information Technology, Peshawar
    Email: millat_1973@yahoo.com

Pagare (2015) defined SVS as a modification in the teaching pattern to achieve the attention of students to learning.

Singh and Sharma (2004) claimed that the teacher is required to keep in mind that pupils have little span of interest in the lesson and they often miss it with time. Skilled teachers employ distinguishing activities to bring new stimulus and that the pupils get more interested in the learning process throughout the class. The use of SVS stimulates the pupils to enthusiastically participate in the process of learning. SVS greatly helps the learning process (Choudhary, Malik & Choudhary, 2013; Garba, 2018).

According to Choudhary et al. (2013) alteration in stimuli is known as SVS. This is to prevent repetitiveness, dullness, and monotony in the teaching-learning process. The use of SVS increases students' attention to learning by keeping them alert. Tiwari (2008) argued that learning to a great extent depends upon the students' attention. Pupils lose their attention when they get bored and they halt to give heed to the task and the teacher (Schneiderova, 2013). The SVS is employed to make the teaching-learning process fruitful and effective. If SVS is efficiently and effectively applied, it can increase students' learning.

Objectives of the Study
i.   To investigate the practice of SVS of SSTs.
ii.   To explore the role of the practice of SVS in the teaching-learning process.
iii.   To describe the extent of practice of SVS in engaging and sustaining the students' attention to learning.
iv.   To investigate the practice of SVS in urban and rural areas.

Research Questions
i.   What is the trend of the practice of SVS skills in SSTs?
ii.   What is the role of the practice of SVS in the teaching-learning process?
iii.   To what extent the practice of SVS is engaging and sustaining the attention of students to learning?
iv.   What is the difference between the practice of SVS in urban and rural areas?

Review of the Related Literature
Berliner (1969) in his report claimed that microteaching takes place with the assistance of D. W. Allen and his colleagues in the year 1963 at the Stanford Teacher Education Program and the Stanford Center for Research & Development in Teaching. In microteaching, the number of pupils, scope of the lesson, and time are decreased to decrease the complexness of ordinary teaching. It presents plenteous chances for the advancement of skills of teaching and imparts a heartfelt comprehension of the art of instructing (Singh & Sharma, 2004). Teaching skills are imperative tools for teachers to achieve the desired goals of learning. SVS is an essential teaching skill that a teacher is required to own and master. Wanda, Suharni, and Mayuasti (2016) asserted that SVS must be owned by every teacher to make his teaching effective.

Stimulus Variation Skill
Classroom observations have proved that newly recruited and skilful instructors do not attain the attention of students towards learning (Berliner, 1969). A study was conducted by Fathima and Saravanakumar (2012) on the effects of SVS on increasing pupils' achievement and concluded that SVS enhanced and attained the students' attention to learning and also improved the achievement of students. In their study Amin, Shah, Ayaz, and Atta (2013) recommended that serving teachers must be trained and in-service trainings should be arranged for them to improve their performance.

Garba (2018) claimed that SVS is an important instrument that is necessary for the healthy transmittal of information to pupils. He argued that students' attention must be captivated first and then it should be sustained and maintained incessantly in the whole period of learning. SVS consists of different components. Through the present study, the investigator is passionate to thoroughly examine and evaluate the current trend and practice of eight components of SVS of in-service SSTs which are pointed out in the book of "Microteaching" by Singh and Sharma (2004).

Components of SVS
i)   Movement
ii)   Gestures
iii)   Changes in Voice (CIV)
iv)   Focusing

v)   Changes in Interaction Pattern (CIIP)
vi)   Pausing
vii)   Physical Pupil Participation (PPP)
viii)   Switching

Movement

Singh and Sharma (2004) say that movement is taking place in various ways e.g. when a teacher is moving towards the board for writing, moving towards students for their assistance and to instruct them. According to Pagare (2015); Garba (2018) the movement of teachers in the classroom is indispensable for a teacher to attain and retain the students' attention towards learning.

Gestures

Gestures are non-verbal signals which are employed by a teacher to accentuate the significant idea, shape, object, or size (Singh & Sharma, 2004). Gestures and non-verbal signs of a teacher must be pre planned, appropriate, and cautiously applied and practiced. Non-verbal signs can be misapprehended but they can be comprehended quicker as compare to verbal speaking. The facial expressions and eyes communicate much about the conveyer. Effective teaching is dependent upon effective communication.

Changes in Voice

The teacher's voice has an immense and profound impression on the pupils. In his thesis Schneiderová (2013) argued that when a teacher varies his volume, pace, and tone, it has a profound impact on the pupils. Furthermore, he claims that during transmission of the contents to the students, the teachers not only employ hands but they also involve their tone and voice to make transparent their words. The variation in tone and voice is as instrumental as the real oral words.

Focusing

Focusing has a deeper impact on students learning. It produces curiosity in the pupils. In their book Singh and Sharma (2004) pointed out that when an idea or word is stressed by a teacher the pupils themselves realize that their teacher has some intent for the stressed idea or word. "Look at chart or board" comes in the category of verbal focusing technique while accentuating an object through its size comes in the category of gestures focusing technique.

Changes in Interaction Pattern

The interaction means the transmission of views between two or more than two persons with one another. Communication comprises of two kinds i.e. oral interaction; when a teacher speaks to his pupils or when pupils ask from teacher; and nonverbal interaction is the usage of gesturing (Singh & Sharma, 2004). According to Singh, Sharma, and Upadhya (2008), the incessant employment of a similar pattern for extended time can result in neutrality and lack of attention in pupils which consequently creates monotony amongst the students. Allen (1967) states that changing the pattern of transmission leads to an extreme level of concentration that would take place if a similar pattern of transmission is applied by a teacher.

Pausing

Singh and Sharma (2004); Garba (2018) defined pausing as silence in talk. Silence while talking is very imperative and essential if it employed efficaciously, it would assist a teacher in the attainment of the attention of the students. In their books Singh and Sharma (2004); Singh et al. (2008) suggested a pause of three seconds duration while teaching. Pause denotes an important point for ponder. Singh and Sharma (2004) say that excessive long silence during a talk can distract students' attention. Therefore, excessive long pauses must be avoided during teaching.

Physical Pupil Participation

Singh and Sharma (2004) say that PPP can attain and retain their interest and attention in those activities of learning in which students are actively and physically being participated. Kayes (2015) in his study suggested that physical activity of students in classroom activities is greatly imperative for teachers, therefore, they are required to employ the same in their teaching-learning process.

Switching (oral-visual switching or vice-versa)

Teacher employs different skills to make learning effective. Sometimes he presents a lesson orally but effectively transmits the same in the soul of his apprentices; sometimes he presents the same with the help of charts to his apprentices. The shift is known as oral-visual or visual-oral and this kind of shift is named as switching. Incessant employment of the same medium of instruction for transmission of information can cause inattention in students, therefore, a teacher is required to change the medium of

instruction to avoid the inattentiveness of his students. According to Singh et al. (2008) applying one medium of instruction continuously during teaching distracts the attention of students from what is taught to them.

Research Methodology

The current study is qualitative in nature. In qualitative research, data is gathered from existent and natural settings. According to Anderson (1998) in qualitative studies phenomenon is examined in its existing settings and then several techniques are applied to explain, interpret and give meaning to them. According to Fraenkel, Wallen, and Hyun (2011) study which explains the values of activities, situations, materials or relationships comes under the paradigm of qualitative research.

Research Tool

The research data was gathered through observation. For observation, a rubric was developed. Rubric is a grading instrument which shows the anticipated performance for an assignment or research work (Marshall, 2014). In the present study, the observation rubric comprised of eight components that encompass and covers the entire features of the SVS.

In their study Khan (2016) and Marshall (2014) employed a four-point grading instrument for rubric which is explained as follows:

Outstanding (immensely effective): Proficient level, fulfils the challenging criterion.

Good (effective): Depicts anticipated performance; the respondents graded in this level should feel good.

Satisfactory (development is imperative): the respondents' performance graded in level is medium.

Unsatisfactory (does not meet the criterion): The performance of respondents graded in this category is undesirable, they need betterment and development.

In the present study for observation of the respondents, rubric with four-level codified scoring scale i.e. Outstanding/Level-1, Good/Level-2, Satisfactory/Level-3 and Unsatisfactory/Level-4, constituted on criterion for each component of SVS was structured. The parameters of the rubric were obtained from the established criterion of each component.

Population of the Study

Male SSTs of KP were termed as the population of the present study. The total population of the study was 5537 SSTs of 26 Districts of KP (EMIS-2017).

Sample and Sampling Technique of the Study

160 SSTs were taken as a sample of the study, they were comprised of 80 SSTs (Science group) and 80 SSTs (General group). Due to financial and time constraints, the sample was chosen from only the Peshawar, Charsadda, Mardan, and Nowshera districts of KP. A convenient sampling technique was applied in the present study.

Data Analysis

Data was collected through observation. Rubric was developed for observation which was comprised of eight components of SVS. The rubric was generated for each component of SVS, each component was having a four-level grading/rating/scoring scale i.e. Level-1 (outstanding), Level-2 (good), Level-3 (satisfactory), and Level-4 (unsatisfactory). Only a percentage of all the components in each category/level is shown in the following table. The higher percentage is noted as the majority of the respondents falling in that category/Level. Fraenkel et al. (2011) claimed that in qualitative research studies analysis of the collected data can be done by applying statistics i.e. percentage. Maxwell (2010) in his article argued that the use of numbers is allowed in qualitative studies to complement the collected data with numbers.

Table 1

Summary Showing Percentages of Components of SVS

Components of SVS	Outstanding Percentage	Good Percentage	Satisfactory Percentage	Unsatisfactory Percentage
Movement	16 %	31 %	36 %	18 %
Gestures	17 %	28 %	27 %	29 %
CIV	7 %	28 %	35 %	31 %
Focusing	10 %	29 %	35 %	26 %
CIIP	23 %	24 %	47 %	6 %
Pausing	5 %	18 %	50 %	27 %

PPP	11 %	19 %	34 %	37 %
Switching	13 %	33 %	43 %	12 %

The above-referenced Table in response to question No.1 shows the percentages of each component of SVS. The majority of respondents in each component were in Level-3 (satisfactory) instead of Gestures and PPP in which most of them were in Level-4 (unsatisfactory). In Level-3 i.e. "satisfactory" Movement is 36%, CIV and Focusing each are 35%, CIIP is 47%, Pausing is 50% and Switching is 43%. In Gestures and PPP, the majority of respondents were 29% and 37% respectively in the "unsatisfactory" category. Total 61% of respondents (marked in Level-3 and Level-4) were not applying SVS as per standard criteria.

The aforementioned Table in response to question No.2 shows that the average of respondents in eight components who were marked in Level-1 was only 13%. Level-1 indicates the standard criteria of the practice of SVS and the role of this skill can be judged from Level-1. Only 13% of respondents were properly, appropriately, and effectively practicing components of SVS. The respondents graded in Level-1 in each component throughout the class sustained and continuously maintained the attention of students to learning. It elucidates that where the SVS was properly applied it produced and played a greater role.

The abovementioned Table in response to question No.3 reveals that the average of the respondents graded in eight components at Level-1 and Level-2 collectively is 39%. It means that up to the extent of 39% the SVS was properly and appropriately practiced by the respondents. The respondents graded at Level-1 and Level-2 are not in majority, they are less in number in comparison to the respondents graded at Level-3 and Level-4. Therefore, findings reveal that most of the respondents were not following the standard criteria of practice of SVS.

Area-wise Analysis of the practice of SVS

In the following table, data in respect of areas in terms of rural and urban is examined and analyzed. The percentages of every component of SVS is presented and reported as area-wise. Percentages of each component of the four-level grading scale are referred against each Level/category. The high number of percentage falling in a Level/category is considered as majority /most of the respondents falling in that Level/category.

Table 2

Area-wise Percentages of Components of SVS

Components of SVS	Outstanding Percentage		Good Percentage		Satisfactory Percentage		Unsatisfactory Percentage	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Movement	18 %	14 %	35 %	28 %	33 %	39 %	15 %	20 %
Gestures	16 %	18 %	25 %	30 %	38 %	16 %	21 %	36 %
CIV	9 %	5 %	26 %	29 %	34 %	36 %	31 %	30 %
Focusing	11 %	9 %	29 %	29 %	35 %	35 %	25 %	28 %
CIIP	26 %	19 %	23 %	26 %	46 %	48 %	5 %	8 %
Pausing	4 %	6 %	13 %	24 %	58 %	43 %	26 %	28 %
PPP	8 %	14 %	19 %	19 %	35 %	33 %	38 %	35 %
Switching	13 %	13 %	30%	35 %	45 %	41 %	13 %	11 %

The above Table shows percentages of all the components of SVS. In Movement, 18%/4% were graded in Level-1 in urban/rural areas. 35%/28% graded in Level-2 in urban/rural areas. 33%/39 rated in Level-3 in urban/rural areas. 15%/20% rated in Level-4 in urban/rural areas. In Gestures, 16%/18% scored in Level-1 in urban/rural areas. 25% /30% graded in Level-2 in urban/rural areas. 38% /16% graded in Level-3 in urban/rural. 21% /36% rated in Level-4 in urban/rural. In CIV, 9% /5% graded in Level-1 in urban/rural. 26%/ 29% in Level-2 in urban/rural. 34% /36% rated in Level-3 in urban/rural. 31% /30% rated in Level-4 in urban/rural. In Focusing, 11% / 9% rated in Level-1 in urban/ rural. 29% in Level-2 in both urban/rural.35% in Level-3 in both urban/rural. 25% /28% scored in Level-4 in urban /rural. In CIIP, 26% /19% scored in Level-1 in urban/rural. 23% /26% in Level-2 in urban /rural.46% /48% graded in Level-3 in urban /rural. 5% / 8% graded in Level-4 in urban/rural. In Pausing, 4% / 6% rated in Level-1 in urban / rural. 13% /24% in Level-2 in urban /rural.58% /43% graded in Level-3 in urban / rural. 26% /28% rated in Level-4 in urban /rural. In PPP, 8% /14% graded in Level-1 in urban / rural.19% in Level-2 in both urban/ rural. 35% and 33% rated in Level-3 in urban /rural. 38% /35% rated in Level-4 in urban /rural. In Switching, 13% graded in Level-1 in

urban/ rural. 30% /35% in Level-2 in urban /rural.45% /41% graded in Level-3 in urban /rural.13% /11% graded in Level-4 in urban /rural respectively.

Major Findings

Findings of Components of SVS

Table 1 indicates the percentages of the components of SVS, which reveal that the majority of respondents in each component of SVS were in Level-3, the category of "satisfactory" instead of Gesturing and PPP. In the Level-3, Movement is 36%, CIV and Focusing each are 35%, CIIP is 47%, Pausing is 50 % and Switching is 43%. In Gestures and PPP components, the majority of them were scored 29% and 37% respectively in Level-4 (unsatisfactory). Findings of Table 1 depict that a total of 61% of respondents were in the category of Level-3 and Level-4 meaning thereby that they are not following the standard criteria of SVS and they could not properly attained and sustained the attention of students towards learning. The respondents falling in these categories need proper training and improvement to enhance the use and practice of the SVS.

Findings of Table 1 about research questions No.2 and 3 show that where the SVS was appropriately and properly applied it played its due role however, up to the extent of 39% of respondents were applying and practicing the SVS.

Area-wise Findings of Components of SVS

Table 2 reflects the percentages of the components of SVS in respect of urban and rural areas. In the component of Movement, the majority of respondents were 35% rated in Level-2 in urban while in rural 39% rated in Level-3. In Gestures, the majority of respondents were rated 38% in Level-3 in urban while in rural areas 36% were graded in Level-4. In CIV, the majority of the respondents were 34% in urban areas and 36% in rural areas each in Level-3. In Focusing, most of the respondents were 35% in both urban and rural areas in Level-3. In CIIP, the majority of the respondents were 46% in urban areas and 48% were in rural areas each in Level-3. In Pausing, the majority of the respondents were 58% in urban areas and 43% in rural areas each in Level-3. In PPP, most of them were 38% in urban areas and 35% in rural areas each in Level-4. In Switching, most of them were 45% in urban areas and 41% in rural areas each in Level-3.

It is concluded from the findings of Table 2 that in the practice of SVS there was no difference in the urban and rural areas of the selected districts of KP.

Discussion

The findings of this study showed that most of the respondents could not effectively and constantly moved inside the classroom as the majority of the respondents were rated as 36% in Level-3 i.e. "satisfactory" and 18% were graded in Level-4 (54% in both levels).Findings of Table 1 show that in the component of Gestures, 29% of respondents were graded at Level-4 and 27% were rated at Level-3 (56% in both levels), showing that the majority of them were not following the standard criteria of Gestures. Analysis of Table 1 shows that majority of them were graded 35% at Level-3 and 31% at Level-4 in the category of CIV (66% in both levels), showing that most of the respondents were not efficaciously applying CIV. The findings of Table 1 show that 35% of respondents were graded at Level-3 and 26% at Level-4 (61% in both levels) which elucidates that majority of them were not efficaciously and incessantly practicing the Focusing. Table 1 shows that the majority of respondents in the category of CIIP were 47% in Level-3 and 6% in Level-4 (53% in both levels) which reflects that they were not varying the pattern of interaction during teaching. The findings of Table 1 show that most of them were 50% at Level-3 and 27% at Level-4 (77% in both levels) which points out that Pausing was not effectively, appropriately, and properly practiced by the respondents. Findings of Table 1 reveals that the majority of them in the component of PPP was 37% at Level-4 and 34% at Level-3 (71% in both levels) which reveals that most of the respondents had not actively participated the pupils in classroom activities. Analysis of Table 1 shows that the majority of respondents in the component of Switching were 43% at Level-3 and 12% at Level-4 (55% in both levels) as the respondent were not properly and suitably applied the Switching technique.

Analysis of findings of Table 2 reflects that the majority of respondents in the areas of urban and rural were not practicing the component of gestures and were not actively participating their students in the teaching-learning process. From the findings of Table 2, it is also analysed and concluded that in the practice of SVS there was no difference in the areas of urban and rural. The present study is in line with previous studies. An experimental study was conducted by Wyckoff (1971) on three components of SVS i.e. pausing, movement, and gestures, and concluded that the use

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of SVS increased the scores of students. A similar study was conducted by Fathima and Saravanakumar (2012) on the effect of SVS techniques on increasing students' achievement and concluded that due to the use of SVS techniques the students achieved good scores. However, in the present study, only the practice of in-service SSTs was observed and it was founded that the majority of SSTs were not properly and appropriately practicing the SVS.

Conclusion

Eight components of SVS were found properly applied up to the extent of 39% of respondents which reveals that SVS is playing a great role in the attainment of attention of students to learning. These respondents throughout the class sustained and maintained the attention of students towards learning.

From the findings of Table 1, it is concluded that the majority of respondents i.e. 61% were not effectively and appropriately practicing the SVS as they failed to properly attain the students' attention towards learning. Table 2 shows that SVS was not effectively and properly applied in both areas. It is also proved that most of the teachers of urban and rural areas were not properly practicing the gestures and were not actively engaging and participating the pupils in the process of learning. Based on findings, it is established that in the practice of SVS there was no dissimilarity in both areas. Based on findings, it is concluded that the SVS being an important teaching skill must be concentrated by PITE, RITE, DCTE, IER, and other functioning NGOs by adding the SVS in the curriculum of teacher education and teacher in-service trainings.

Recommendations

It was found by the investigator that the respondents could not effectively practice the SVS, thus, training for in-service teachers is crucial to enhance their practice of SVS. The planners and developers of the curriculum are needed to add SVS in the curriculum of teachers training and teacher education. First, a Special Master Trainer will require to educate Master Trainers in each District of KP, and subsequently, they will equip and train the serving SSTs. PITE is recommended to arrange in-service teachers training for the development of the practice of SVS. This study proved that most of the teachers switched from only chalkboard/whiteboard to textbook and contrarily as in the classroom graphs, maps and charts etc. were not available that the teachers might change their method of instruction from one channel to the other. The study also proved that most of the teachers were not actively and physically involving their pupils in the process of learning, consequently, it is established that in-service trainings must be given to teachers to enhance their practice of SVS.

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