

## Effect of Specified Training with Vibrator Aid and Sign Language on Accuracy and Dribbling Performance in Handball Among Deaf and Dumb College Students



### Engineering

**KEYWORDS:** sign language, vibrator training, handball and dribbling and accuracy

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### ABSTRACT

*The purpose of the study was to findout the effect of specified training with sign language and vibrator aid on accuracy and dribbling performance in handball among deaf-and-dumb College students. In this study forty five male students were randomly selected from Presidency College, Chennai and divided into three groups as two experimental and control groups. Data were collected from each subject before and after the training period. The collected data were statistically analysed by using dependent 't' test and analysis of covariance (ANCOVA). It was found that there was significant improvement on accuracy and dribbling performance of experimental groups when compared to the control group.*

### Introduction

Among the living organisms, human being is considered as a supreme creation in the world. It is because human being only has the potential skills such as thinking and intellectual. The Tamil Sangam poetess **Avvaiyar** describes the greatness of 'Born as a human being'. She said "to born as a human being is a rarity; that to taking a birth without any difficulties such as handicapped, blind, deaf and dumb and transgender problems is the rare of the rarity, Such a rare group shines well in survival skills such as education and social skills means that human being will be the rarest of the rarity. So taking a birth as a human being and education are being considered as a boon in the world. Most of the Governments in the world spend covetable amount of money to educate the children of their country. Education is considered as a tool for bread and butter purpose. They provide scope for all strata of society to uplift their life style that is only possible through proper education and employment.

In the brim of 20<sup>th</sup> Century, our society has been facing and reporting the issues related to the people with difficulties such as Physically handicapped, Visually challenged, Hearing impaired, deaf, dumb and learning difficulty such as Dyslexia. The type of education designed for these people is called 'Special Education'. The Tamilnadu Government created a Ministry for Differently Abled people (**Matruththiranalgal in Tamil**) exclusively for these people. Also these people try their best to utilize these facilities to come up in life.

Sign language refers to the indigenous language used by the deaf group in a country. Every country has a sign language of its own, which has developed spontaneously within the deaf group of that country. In effort to improve deaf people's living conditions, the removal of communication barriers is of paramount importance. A deaf person must have the right to use sign language as his natural language in any social situation. All information about the world is perceived by humans through five senses: sight, hearing, touch, smell, and taste. Tactile perception is associated with the sense of touch (**Goldishand and Taylor, 1974**). Human skin is composed of layers, namely, epidermis and the layer below this is called dermis. It is a complex process how human brain receives and understands vibration stimuli (**Sherick and Cholewaik, 1986**). Sport technologies use embedded and wearable sensors for measuring physiological aspects and muscle movements that can help coaches to understand and to improve the performance of athletes. Several studies suggest that tactile instructions can support the learner in acquiring motor skills. **Bloomfield et al., 2008**, reported that tactile stimuli at the arm help novices to learn karate arm movements in a virtual reality setup. **Nakamura et al., 2005**, applied tactile stimuli at the wrist to instruct dance beginners when to perform

a movement. In general, the participants were able to increase the number of correct movements and to perform these movements faster compared to dancing without tactile cues. Tactile stimuli were also shown to be effective for learning to play musical instruments. For example, **Holland et al., 2010**, used tactile stimuli at the wrists and ankles for teaching drum patterns. **Huang et al., 2010**, used tactile stimuli at the fingers for teaching piano melodies.

Based on the above information, the researcher designed to study the effectiveness of Deaf-and-Dumb students' participation in the college sports activities.

### Objectives

The following are the specific objectives of this study.

1. To findout the effect of vibrator-aid instruction based specified training on dribbling and accuracy performance in handball among deaf-and-dumb college students.
2. To findout the effect of combination of vibrator aid and sign language instruction based specified training on dribbling and accuracy performance in handball among deaf-and-dumb college students.
3. To findout the best training method to enhance the dribbling and accuracy performance in handball among deaf-and-dumb college students.

### Methodology

To achieve the purpose of this study, a qualified physician examined 150 deaf and dumb male college students were selected from Presidency College, Chennai, Tamil Nadu, India, and found out 60 students were 90% hearing impaired out of 60, 90% hearing impaired students 45 students were selected at random, their age ranged from 18 to 25 years as per the college records. The selected subjects were divided into two experimental groups and a control group with fifteen subjects in (n=20) each. Experimental Group I (VTG=20) underwent vibrator-aid based instruction specified training, Group II (SVTG=20) underwent combination of vibrator aid and sign language instruction based specified training and Group III served as control group (CG) for the training period of 12 weeks. The following dribbling and accuracy variables such as dribbling, accuracy throw and jump - throw were measured by using, (**Bergemann, 1999**), test. The pre test data were collected two days before the training programme and the posttest data were collected two days after the training programme.

### ANALYSIS OF DATA

The data collected from the experimental group prior and after experimentation on selected variables were statistically examined by using dependent 't' test and analysis of covariance (AN-

COVA) was used as a statistical technique. Whenever the 'F' ratio was found to be significant the Scheffe's test was used as post-hoc test to determine which of the paired means differed significantly. In all the cases to test the significance, 0.05 level of confidence was used.

**TABLE I**  
**SUMMARY OF MEAN STANDARD DEVIATION AND DEPENDENT 't' TEST FOR THE PRE POST AND ADJUSTED POST TESTS ON SELECTED VARIABLES OF EXPERIMENTAL AND CONTROL GROUPS**

Variables		VTG	SVTG	CG	
Dribbling In Seconds	Pre test	Mean	39.333	38.933	38.400
		SD	2.610	2.219	2.414
	Post test	Mean	36.267	33.733	37.333
		SD	2.890	2.017	3.331
	't' test		7.668*	12.373*	0.948
	Accuracy Throw In Points	Pre test	Mean	4.733	4.867
SD			0.594	0.743	0.724
Post test		Mean	5.600	6.533	4.867
		SD	0.632	0.743	1.125
't' test			8.641*	12.574*	1.497
Jump and Throw In Points		Pre test	Mean	3.667	3.533
	SD		0.900	0.516	1.056
	Post test	Mean	4.800	5.733	3.733
		SD	1.265	0.961	0.961
	't' test		7.221*	9.646*	0.423

**TABLE II**  
**ANALYSIS OF COVARIANCE ON CRITERION VARIABLES OF EXPERIMENTAL AND CONTROL GROUPS**

Variables	Tests/ Groups	VTG	SVTG	CG	S O V	SS	df	MS	"F" Ratio
Dribbling	Adjusted Post Test	$\bar{X}$ 35.894	33.696	37.744	B	122.287	2	61.143	16.077*
					W	155.931	41	3.803	
Accuracy Throw	Adjusted Post Test	$\bar{X}$ 5.618	6.446	4.937	B	16.867	2	8.434	18.606*
					W	18.585	41	0.453	
Jump and Throw	Adjusted Post Test	$\bar{X}$ 4.747	5.787	3.733	B	31.588	2	15.794	22.610*
					W	28.640	41	0.699	

\* Significant at .05 level of confidence

(The table value required for 0.05 level of significance with 2, 41 are 3.23)

**TABLE III**  
**SCHEFFE'S TEST ON CRITERION VARIABLES OF EXPERIMENTAL AND CONTROL GROUPS**

Variables	VTG vs SVTG	VTG vs CG	SVTG vs CG	CI
Dribbling	2.198*	1.85*	4.048*	1.809
Accuracy Throw	0.828*	0.681*	1.509*	0.624
Jump and Throw	1.040*	1.013*	2.053*	0.775

\*Significant at 0.05 level

**Results and Discussion**

The results of the study indicate that significant difference exist among the pre, post and adjusted post test means of experimental and control groups on the dribbling and accuracy throw among deaf-and-dumb participants.

Previous research conducted by **Spelmezan, et al., 2009**, focused on designing tactile stimuli that could intuitively represent body movements. Accuracy of throwing at the goal is an ability to realize cumulative attacking engagement of the whole team in score-open situations, which is the last controlled action on the attack. For acquiring motor skills, such as in sports training, it is important that the learner frequently receives instructions on how to perform the skill and feedback on the performance. Coaches typically give instructions and feedback before and after a trial, and concurrently during the execution of the movements. Yet in many sports the coach cannot correct the learner during an exercise. A good case in point is snowboarding. Snowboarders receive instructions before descending the slope and delayed feedback after the ride. During the ride, they are spatially separated from their coach. They have to rely on their own perception of what is right or wrong (**Van, et al., 2006**). **Vulet, et al., 2006**, stated that teaching and training programmes should simultaneously develop all motor abilities and continuously apply operators (training contents) in which aiming and hitting of targets of various sizes and forms is performed both from standing positions and while moving. Present research also reported that deaf-and-dumb participants were able to recognize and to identify vibration-aid and sign language instructions while training period. In the present investigation result showed that, the use of a vibrator-aid instruction based specified training and combination of vibrator-aid and sign language instruction based specified training improve the dribbling, accuracy throw, jump and throw performance.

**Conclusions**

Overall, our findings indicate that vibration aid, combination of vibration aid and sign language instructions based specified training could support deaf-and-dumb handballers in improving dribbling and accuracy performances. Based on our findings, the researcher can conclude that vibration aid, combination of vibration aid and sign language instructions based specified trainings are a practical approach for learners in enhancing handball skill performance if these instructions are adapted to meet up the learners' needs during training.

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