**ISSN** 1750-9823 (print)
**International Journal of Sports Science and Engineering**
Vol. 03 (2009) No. 02, pp. 103-108

# The Comparison of the Effect of Modeling and Imagery Type on Self- Efficacy of the Volleyball Simple Serve

Tahereh Bagherpour [+ 1], Masumeh Shojaei [2]

[1] Islamic Azad University damghan branch, [2] Al-Zahra University

(*Received April 10, 2009, accepted May 15, 2009*)

**Abstract.** Imagery and modeling are similar cognitive processes that serve as vicarious experiences that provide information that effect self – efficacy. However, some imagery studies have shown a model of correct performance before beginning imagery to ensure that subjects are imagining the skill correctly; thus, confounding modeling and imagery. In a study that separated these factors, imagery type was not controlled. Therefore, the purpose of the present study was the comparison of the effect of modeling, internal imagery, and external imagery on self - efficacy of volleyball simple serve using a pretest – posttest matched – groups design. 48 novice female students with average imagery ability were randomly selected and matched in 4 groups based on self – efficacy (control, modeling, internal and external imagery). Data of self – efficacy at pretest and posttest were analyzed by 4(group)*2(test) ANOVA with repeated measures of test factor sand post hoc paired t test with Bonferroni adjustment. .Results indicated that the self – efficacy of modeling group and after that internal imagery and external imagery were significantly better than control groups in posttest, but there were not significant differences between self – efficacy at modeling internal and external imagery groups in pretest and post test. These findings suggest that self – efficacy is effective factor in mount motor Learning and information that person receive by modeling is more effective on self – efficacy than internal and external imagery.

**Key words:** External imagery, Internal imagery, Modeling, self – efficacy

## 1. Introduction:

The researches of sport physiologists and doctors in recent years have proved strong connection existence between motionless life style and affected risk increasing to cordial - and cordial – respiratory. There fore, many of organized programs of sport and physical fitness formed with this purpose that can reduce inactive people in adult society (7, 4). The evidence showed that in starting of a sport activity most of people, with draw from it (5). In conclusion, from social – cognitive perspective is achieved an very effective method and considered both of individual and conditional agents and effect of their reciprocal. Looking to motivation and continuing to participate in sport programs considered from view self – efficacy. Self – efficacy sometimes called self – confident (1), perception this topic that people can perform duty in certain level .This case has motivation points and it people believed that has necessary competency for duty then he can perform it in certain level. His motivation is much for duty performing. There are many of information resources that have effective on self – efficacy level (2). Modeling is process that employed for observed experience and provided effective information on self – efficacy. Modeling or skill representation is an understanding process that learner attempts to imitate one action or skill that done by other people. This case cause to produce and develop a cognitive growth and that uses as a reference for performance comparing, discovery and correcting of errors. The social – cognitive theory is on of the theoretical methods that use for explaining modeling process (1,2). This theory is on basis of this hypothesis that observer coded information about skills to symbol forms that are seen on representation (2). Then learner uses coded information as guide for future activity (22). On according to Bandura view, modeling is effective when provided with 4 sub process the included: 1- attention 2- retention 3- motorist reproduction 4- motivation. Bandura define self efficacy as beliefs in ones capabilities to organize and execute the courses of action required to produce enactive mastery experiences (past performances),

(1) motional experiences

[+] Corresponding author. *E-mail address*: Bagherpoor_ta@yahoo.com

(2) obseverved experiences

(3) speech (word) encouraging

(4) physiological and emotional conditions

Motional experiences expressed to individual abilities observed expriences can changed his believes with showing his competency in compansion with others. Finally physiology conditions can effect on certain believes from understanding abilites on un compatibility behaviours.There fore modeing or observed learning can effective with producing each of information resources on individual self – efficacy.Bandoura says: information that people get through resources, have important for behavior changing but only when people have processing with recognizing from information can act think fully on performing it (3).There are he find conditional social, individual factors that have effect on experiences and understand through recognition, undoubtly, information resource that have more application on observed learning included motional experiences and observed experiences. Bandaudra (3) believes motional experiences produce best of useful information resource because it has ralid information about individual ability on performing a certain behavior.He also express that usefulness increases individual advancement through selective attent. On the second of very important resource is observed experiences that comprise modeling. George and. Felltz and chase (4), mcauley 92), Gould and weiss (1) concluded that modeling increases self – efficacy on gymnastics skill Clark (4) studies effect of skillful and unskillful model on self – efficacy. In acquired stage, there isn't important (meaning) difference between skillful and unskillful pattern on self – efficacy.Although, retention test results showed that unskillful model is better than skillful model but both of groups are better than control group in achieving self – efficacy scores. Generally bandura (3) expresses people have attention to models more that success in their affairs. Although Gould and weiss (3) studies effect of similar and un similar models on self – efficacy. Observing a similar m has more effective in companisio with un similar model because people consider them selves similar with pattern especially if pattern social condition is similar with observer. Then it has positive effect on self – efficacy: however, Ferrari: studis self – patterning on self – efficacy and compare it with two control group and there isn't considerable difference on self – efficacy.Inreality, modeling tactic is that skill correcting form cause self – efficacy developing and suitable performing.On recent modeling studies, self – efficacy increases in children that fear form swimming inaccording to researches (1). imagery is one of other understanding processes that has effective on self – efficacy (3).Mental imagery required to recognizing reviewing of a physical skill without certain physical motion. Imagery help people in producing mental design that is necessary for producing a motional program on nerve system (1). Then stored design used as guide for skill again performing in future. Jones (1) studies stress, self – efficacy feeling on traveler and also travelling performing in control and imagery group.In group that imagery performed from motivational aspect, we observed.Stress decreasing and self – efficacy increasing in comparison with control group.Feltz and Riessinger,(4) McKenzie and Home Woolfolk and Murphy,(2) Gottesfeld (25) Study and observe imagery effects on self – efficacy testers achieve. More scores in imagery conditions than others. Clark(4) develop hardy; s findings by a research. This research is done on skate athletles for movements harmonization.In this research, role of external imagery than internal on skill regoniative aspect is more effective and there aren't meaning full difference between groups from motivational aspect.Mckenzie and Howe (2) study imagery effects on self – efficacy in throwing dart. They suggest imagery changed amount of testers self – efficacy. In addition to, researchers report effective connection between self – efficacy and performing(25,21,1) they believed self – efficacy intermediate for sport behavior investigation (20). Researchers conclude that imagery and modeling are exactly similar (7,9,17).It provided effective information with using of observed experience.This information provided by observing other skill performing.But many of researchers express that they are separating and different processes.In the most of researches about imagery, before starting imagery, we showed skill appropriate imagery for new learnears to assure of skill appropriate performing (3).There fore effect of Modeling and imagery interchangeable. In a research SooHoo, Takemato and McCullagh (5) isolated effect of imagery and modeling and provided imagery exercises with out modeling.The results of this research are shown that self – efficacy level is effective factor in motional learning degree. But don't consider index for kind of exercise. But in research of SoHoo and et al don't control kind of imagery for pouticipamts and it is possible that kind of imagery has effect on effect results.Terefore purpose of present research is comparision of modeling effect , internal and external imagery on skill self – efficacy on valleyball simple serve in novice young girls.

## 2. Method

## 2.1. Participants:

48 girls novice female students of Islamic Azad University in Damghan Branch with age range between 18-24 and with average imagery ability (sport) are selected by chance a many 200 students that passed general physical training. Unit 1 in education second semi year 84-85 and they were completely on volleyball simple service skill. They considered basis of self- efficacy test grades, by chance in similar 4 groups: modeling, internal imagery external imagery and control. Participants expressed their acceptance for participating in research before starting of experimental period with signature of testimonial (letter of satisfaction) form.

## 2.2. Procedure and task:

For performing of research we used of sport imagery questionnaires, Hall and Martin, (16)physical self-efficacy scale,(24) AAHPERD volleyball simple server performing result test, and volleyball simple serve pattern assessment.

## 2.3. Scale sport imagery questionnaire:

Exercise imagery of this test are designed from easy to difficult and each of exercise are been composed of clearing beginning situation memory exercise and action in the end of exercise we wanted every person graded degree of memory exercise easy or difficulty by a scale with seven values.

## 2.4. Physical self- efficacy scale:

This scale consist of tow scale of understanding physical sport and physical ostentation assuration.They are 22 cases that are graded in scale with 6 values (1=completely opposite to 6= completely accepted).Expression 1,2,4,6,8,12,13,19,21,22 are been estimated understanding physical sport and expression 3,5,7,9,10,11,14,15,16.17.18.20.are been estimated physical osteritation first order expression are graded as mentioned above, and second order expression are valued as reverse order. Keronbakh Alpha coefficient and find coefficient with using of retest for physical self- efficacy was equal with 80%, 81%.continue).Every feature has one score and total scale has 10 scores. This scale is valued by several volleyball professionals.

## 2.5. AAHPERD volleyball simple server performing resulting test:

Volleyball area (land) is graded according to figure 1. participant should play (hit) 10 time serve.Score was been considerd zero when on serve time, person legs are placed on the line total scores were 10 as resulting scores.

<table>
<tr><td rowspan="3">3m</td><td rowspan="3">6m</td><td colspan="2">3 scores 1/5 m</td><td rowspan="2">4 scores</td></tr>
<tr><td>1 scores<br><br>4/5 m</td><td>2 scores<br><br>3 m</td></tr>
<tr><td colspan="2">3scores 1/5m</td><td>1/5 m</td></tr>
</table>

# 3. Measures

Firs, imagery ability of participants are measured by sport imagery questionnaires, Hall and Martin. Then, we selected 48 novice female students by chance of among participations that have average imagery ability imagery for self efficacy variable control, first we measured participant self- efficacy with using of physical self – efficacy scale(4) and then in basis of acquired score , we unified modeling, external and internal imagery and control group by chance. Tow days ago of teaching beginning and experimental period, external and internal imagery groups have done primary exercises on skill except volleyball simple serve. Verbal training of volleyball simple serve (without skill showing) equally is provided to 4 groups. We passed off an pre-test for all of groups. This was composed of 10 volleyball simple serve performing from area (land) right side semi-length results of 10 serve performing are measured by AAHPERD test. In addition to, we were film taking of participants when they were performing 10 serves. And three professionals graded performing shape on basis of scale. Score average of these 3 professionals are considers as performing form score. Modeling group observed 10 times film of a skillful group. Internal and external imagery group imaged serve skill with coach voice 15 times as internal and external. We provided yoga exercise to control group immediately, after and of exercises that lasted 45 minutes, we passed off test for 4 groups that composed of

10 serve performing from land right side semi- length. And then are estimated performing form and result after 60 minutes interval that all of groups trained yoga, (for preventing of physical and memory exercise) test is dune and it is camped of 10 serve performing from land right side semi length then transfer test is composed of 10 serve performing from land left side of semi- length. We measured participant self- efficacy with using of physical self – efficacy scale at the end of transfer test.

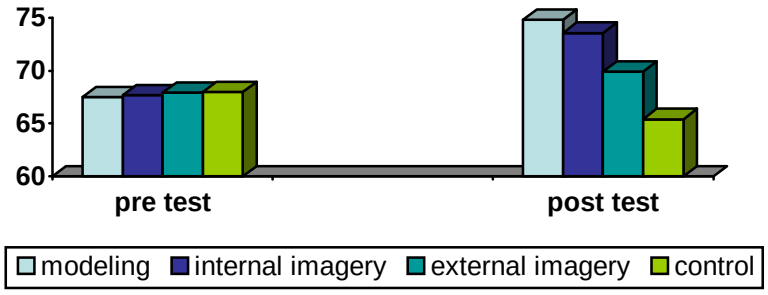
## 4. Statistical analyses

For summarizing and classifying of gathering Data, was used of described statistic it was composed some of central tendency indexes and dispersion. And for zero assumptions test is used of conclusion statistic, it was composed of two factor variance analyses 4×2 ANOVA with repeated measures of test factor and paired test post hoe test.

## 5. Result

Figure 1 is shown average of self efficacy score on volleyball simple serve performing for experimental and control groups in pre –test and post test. As we see in the figure, average of scores internal imagery, external imagery and modeling groups almost are similar but control group at post test are weak and don't improvement at self efficacy scores. After naturalizing pre-assumption test of deepens variable dispersion in different levels of using of kolmogorov- simirnov test (P>0/05) and differences variance uniformity pre-assumption with using of movcholi variance analyses test (P>0/05) is done with repeated measures of test for depence variable of performing resut. Results of this test are shown that main effect of group and test has meaning (P>0.001).

Results of paired test post hoe test depended to correction has shown that in pre- assumption don't have main difference between groups self efficacy results (P>0/05).And self efficacy score in each of 3 experimental groups was better, than pre- test (P>0/001). In pre test, modeling group was better than external imagery and control and internal imagery group was better than control group. (P>0/001).




| P | F | Mean square | Df | Sum of squares | Change sources |
|---|---|---|---|---|---|
| 047/0 | 79/1 | 73/119 | 3 | 39/644 | Between group |
| | | 58/10 | 44 | 83/465 | Within group |
| | | - - | 47 | 81/5291 | total |

## 6. Discussion

The purpose of this research was comparison of modeling, internal and external imagery on self-efficacy of Volleyball simple serve skill in novice young girls. The results of this research are shown that self-efficacy scores on modeling group at post test was better than pre test. These results are same with findings of many researchs on Weiss and MacCullagh (5) reviewing about modeling effect on self- efficacy on movement skills modeling case to produee and develop a recognative regrowth and it used as refrence for comparision of performing and develops a recognative regrowth and used as refrence for comparision of performing and discovery and error correcting (3). Bendura (3) says information that recived person throuyh resources are important for changing behaviour, but only when person has processing with recognizing with recognizing from information and ated thinkfully its performing. Therefor he finds individual, social,

conditional factors that has effect on experiences and understand with recognition indoubtly, information resource has the most function in observing learning it conclude observing experiences and movemental experiences. One of the modeling sub processes is attention that. Increase individual achievement and attention has direct connection on movemental experiences that is the first of effective resource on self-efficacy. The second of effective resource on self- efficacy is observig experiences. On according to Bendura idea, it is included modeling. There fore under experiences or modeling are important in self-efficacy formation (23). Important to the results, self- efficacy scores on internal imagery group and internal imagery in post test are better than pre-test imagery help people on formation of action memory design that need for producing a movement these results are same with most of Feltz and Riessinger (1), Mckenzie and howe (2) findings about imagery effect on self- efficacy in move mental skills in comparision, kind of imagery don't same with Clark (4) research. He concluded on his research that there aren't meaning full difference between internal and external imagery on self- efficacy. In addition to, there isn't meaning full difference between experimental groups after exercise attemps on post- test modeling and imagery grouped as same processes on Bendura self- efficacy theory. During imagery, one image or understanding sign recall from memory. On according to Bendura idea, (2) modeling contains reading symbolic secrects through imagery for increasing learning. He suggeste that imagery and modeling understanding processes are same. In these findings are shown that there aren't meaning full difference between modeling and imagery groups after exercise attemps in post-test. These findings are same with sohoo and etal (5) results/But on Feltz and Resinger research, when they study imagery effect on self- efficacy and to show feedback to participants ; they understand imagery has effect on self-efficacy. In addition to, it is possible that kind of skill is effect for achiering to this result. Because it weighing skill and studied action difficulty with porticipants skill level it is possible that we don't achieve correct assessment from tests self-efficacy. In generall, finding of this research are shown that self-efficacy is effective, factor in movemental learning degree, and information. That recived person through patterning is more effective than internal and external imagery on self- efficacy. Self- efficacy has important role on individual behavior in reality, self- efficacy is individual belives in connection with his abilities for doing affaires , and achieved form different resources for example individual successful and unsuccessful there fore high level person try more and success more than person that have low level self-efficacy. They experienced less fear and work and attempt.Bendoura says that people high self-efficacy, have more control on affairs and exprierce more self-confidence. Because people fear form events that don't have control on then, then don sure from them.But people with high level self-efficacy, fear less. Results of this research with Bendura's(3) opinion say that self-efficacy feeling on successful behaviour, activities kind that we do and degree of attempt for doing that are effective. We need to more research for studing players self – efficacy before match, during match and after match and comparison that with different movemental skills.

## 7. References


[1] Bandura, A. *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall, 1986.

[2] Bandura, A. *Social learning theory*. Englewood cliffs, NJ: Prentice Hall, 1977.

[3] Bandura, A. *Self - efficacy : the exercise of control.* New york : W.H. freeman, 1977.

[4] Clark , J . E. Motor development. In V.S . *Ramachandran (Ed). Encyclopedia of human behavior*. 1994, 245- 255.

[5] Dishman, R.K. Compliance/ adherence in health – rela exercise. *Health psychology*. 1982, **1**: 237 - 267.

[6] Dishman, R.K. *Exercise adherence : its impact on public health . champaign.* Il: Human Kinetice, 1982.

[7] Druckman, D., & Swets, J.A. *Enhancing human performeance: issues, theories and techniques*. Washington, D.C: National Academy press, 1988.

[8] Falls,H.B., Baylor , A.M.,& Dishman , R.K. Self -motivation and odherence to therapeutic exercise. *Journal of Applied social psychology*. 1980, **10**: 115-131.

[9] Feltz , D.L., & Landers, D. M. The effects of mental practice on motor skill Learning and performance : A meta _ analysis. *Journal of sport Psychology.* 1983, **5**: 25 -57.

[10] Feltz , D.L.,& Riessinger, C.A. Effects of invivo emitive imagery and performance feed back on self - efficacy and muscular endurance . *Journal of sport & exercise Psychology.* 1990, **12**: 132-143.

[11] Ferrari, M. Observing the observers: self regulation in the observational Learning of motor skill. *Developmental preview.* 1996, **16**: 230- 240.

[12] Feltz , D.L. motivation in sport: A self – efficacy perspective in G.C. Roberts (Ed.) *motivation in sport and exercise. Champaign , i L : Human kinetics.* 1992, pp.93- 106.

[13] Gould, D.R , & Weiss , M.R. The effects of model similarity and model talk on self – efficacy and muscular

endurance. Journal of sport psychology. 1981, **3**: 17- 29.

[14] George , T.R., Feltze, D.L.,& Chase, M.A. Effects of model similarity on self – efficacy and muscular endurance: Asecond look . *Journal of sport & Exercise psychology.* 1992, **14**: 237-248.

[15] Gould, D., & Weinbery, R. *Foundation of sport and exercise psychology.* champaign, il : Human Kinetics, 1995.

[16] Hall , C.R., & Martin , K.A. Measuring movement imagery abilities: A revision of the movement imagery Questionaire . *Journal of mental imagery.* 1997, **21**: 143-154.

[17] Housner , L.D. The role of imaginal processing in the retention of visually presented sequential motoric stimuli. *Lournal of sport psychology.* 1984, **6**: 148 -158.

[18] Mckenzie, A.D, & Howe , B.L. The effects of imagery on self – efficacy for a motor skill . *International Journal of sport psychology.* 1997, **28**: 196 -210.

[19] Jones. G. Relation ships between sport achievement orientation & competitive state anxiety. *The sport psychologist.* 1992, pp. 42 - 54.

[20] Murphy , S.M., & Jowdy , D. P .. Imagery and mental practice. in T .S Horn (Ed.). *Advances in sport psychology. Champaign , iL : Human Kinetics.* 1992, pp.221- 250.

[21] Mc Auley , E . Understanding exercise behavior. In G . C . Roberts (Ed). *Motivation in sport and exercise* champaign , iL : Human Kinetics. 1992, pp. 107 - 128.

[22] Mckenzie . A.D ., & Howe , B.L. The effects of imagery on self – efficacy for a motor skill. *International Journal of sport psychology.* 1997, **28**: 196 - 210.

[23] Auley , E . Model similarity effects on motor performance. *Journal of sport psychology.* 1985, **9***:* 283 - 295.

[24] SooHoo, s. Takemoto , K.Y , & Mccullagh , P. A comparison of modeling and imagery on the performance of a motor skill. *Journal of sport Behavior.* 2004, **27**(4): 349- 367.

[25] Ryckman, R. M., Robbins, M.R., Thornton, B., & Cantrell, P. Development and validation of a physical self – efficacy scale. *Journal of personality and social psychology.* 1982, **42**: 891-900.

[26] Wool folk, R.L., Murphy, S.M., Gottesfeld, D., & Aitken, D.Effects of mental rehearsal of task motor activity and mental depication of task outcome on motor skill performance. *Journal of sport psychology.* 1985, **7**: 191-197.

[27] Weiss, M.R., Mccullagh, P., Smith, A., & Berlant, A.R. Observational Learning and the Fearful child: influence of peer models on swimming skill performance and psychological responses. *Research Quarterly for exercise and sport.* 1998, **69**: 380-349.