International Journal of Enhanced Research in Educational Development (IJERED), ISSN: 2320-8708
Vol. 3, Issue 2, March-April, 2015, pp: (27-32), Impact Factor: 1.267, Available online at: www.erpublications.com

The Idea of Using PIM Training Program to Improve Self Efficacy of the Golfers

Mazlan Ismail
Universiti Teknologi MARA, Negeri Sembilan, Malaysia

Abstract: **This study investigated the effectiveness of Practice in Mind or PIM training program on self-efficacy of the golfers when putting from the 6-feet distance. Recent research has suggested that golfers perceived putting from six feet more difficult than i.e., 3, 12 and 24 feet. Sixty-three male golfers with 1 to 3 year golf experiences participated in this study. Participants in PIM group and traditional group completed imagery and physical practices. Meanwhile, the control group only performed physical practices. Three tests were conducted and one-way repeated measure ANOVA used in this study. The results revealed that PIM group improved on self-efficacy compared to the traditional imagery and control group. The finding suggests the idea of using PIM training program to improve self-efficacy of the golfers.**

Keywords: Putting Distance, PIM Training Program, Self-Efficacy.

Introduction

The importance of imagery research for improving sports performance has been emphasized by many authors and considered as one of the most popular techniques used by the athletes. Information regarding the effectiveness of imagery practice has been explained by previous studies. For example athletes must consciously be aware of the actual environment particularly in a competitive setting [1]. Therefore, the actual experiences occur and help the performance during practice [2] [3] [4]. On the other hand, the term controllability refers to the production of the desired outcome and manipulation in images. In fact, both awareness and vividness need to be combined for a similar condition [5]. In imagery, you will always get from what have you seen generally, and they should imagine what should be imagined in order to see the result [6] [7].

Previous studies imply that Psychological Skills Training particularly imagery is a strategy that can improve the performance of golfers and it is popularly used by researchers [2][8][9][10]. For example, previous researchers modified the concept of imagery direction on golf putting performance [2]. Seventy – five participants were divided into three different conditions group i.e., facilitative imagery, suppressive imagery, and control group. The post-test results showed that imagery group performed better than the suppressive imagery group. These findings support the effectiveness of facilitative imagery direction while performing the task. The study summarized that the debilitative imagery need not be persuasive to influence motor skill performance. Additionally, PIM training program uses the stimulus and responses together with facilitative direction imagery help golfers from the PETTLEP group [10]. Therefore the finding supports the idea of using PIM training program to improve golf performance.

Practice in Mind or PIM is another mental program to perceived problems in involving motor imagery to sport setting [10]. PIM training program was based on the PETTLEP imagery model created by Holmes and Collins [11]. According to this model the 'Physical' component considers the physical condition of imagery reflected during the actual performance, for instance when mentally practicing a putting skill a golfer should assume a body position, grip and stance image. The physical responses would then occur in real performance of the skill [1]. The 'Environment' component is described as the physical environment in which the imagery is performed being similar to the actual performance environment. For example, putting skills should ideally be performed at the real putting grass or on the real course. However, PIM training program uses 10 meter away from the actual environment or putting green [10]. The 'Task' component refers to the imaged task as closely as the actual task in terms of the thoughts, feelings and actions while the 'Timing' component explains as the same pace as actual performance imagined being performed (i.e., real time). For instance, when performing a successful putting task the timing begins from standing on the green putting surface.

Later this is followed by replacing of their marker until finally they can hear people applauding from the successful task. The 'Learning' component describes the imagination when what a person imagines should match the current stage of learning. For example, in golf putting skill, a golfer firstly has to think about the correct movement as in the actual performance. Next, imagery may focus heavily upon the correct technique with elements such as grip positioning and body alignment. Finally, as the skill becomes more familiar, a golfer can make some changes on the scripts as rehearsed

in their mind so that the movement becomes more effective. The 'Emotion' component refers to all the emotions and arousal experienced during the imagery as well as in actual performance. Meanwhile, the final component is 'Perspective' which refers to how imagery should be performed from a visual perspective that most closely reflects the view taken by the athlete when actually performing the task i.e., internal or external. Additionally, PIM training program also trained golfers personally three times per week within six week.

Previous researchers also considered the PETTLEP imagery improves the performance of golfers [12][13]. As previous researchers applied the PETTLEP imagery and it helped to improve the performance of golfers when taking shot from the bunker [12]. Thirty-two male golfers with different level of skills were assigned into PETTLEP imagery, physical practice, PETTLEP and physical practice, and control group. In a session, the participants in PETTLEP imagery group had to imagine 15 bunker shots and incorporate PETTLEP components twice a week. The participants were asked to perform by standing and holding the iron (sand wedge) in a tray of sand and wearing the actual golf clothes. Furthermore, the participants in PETTLEP imagery group performed at the real time and were asked to feel the emotion based on the script given. They were also advised to make changes on the script given if they felt the scripts were no longer suitable with their technique. The PETTLEP and physical practice group practiced PETTLEP imagery once a week, using the same procedure as the PETTLEP group. They needed to complete 15 bunker shots once a week. However, the control group only read the performance book by a golf champion. Pre- and post-tests consisting of 15 bunker shots were assessed in this study. Post-test results showed significant improvement particularly for the PETTLEP imagery when combined with physical practice. However, there was no significant difference between the physical practice and PETTLEP imagery. Additionally, PIM training program consists of three times per week of mental and physical practice within six weeks span also help to improve putting performance [10]. The study summarized that this finding significantly supported the effectiveness of imagery practice in enhancing golf performance, especially when combined with physical practice.

Several studies indicate that imagery content would seem pertinent to increasing the efficacy of the treatment [5][14][15][16][17]. For instance, previous researchers found that self-efficacy significantly improved for imagery direction by imagery function in golfers [17]. The participants were assigned into 6 different groups; (a) CS and facilitative imagery, (b) CS and debilitative imagery, (c) MG-M and facilitative imagery, (d) MG-M and debilitative imagery, (e) CS imagery only and (f) MG-M imagery only. Pre and post-tests were assessed in this study. All participants completed the self-efficacy scale right before the 10 putting tests. The post-test results showed that the facilitative group significantly higher in self-efficacy than debilitative group. This finding shows that the role of self-efficacy in relation with imagery and athletic performance is important. There is no study that examined the effectiveness of PIM training program in increasing self-efficacy of golfers particularly in putting test.

Recent study found that golfers had a problem when putting from a 6-feet distance compared to other distances for example 3, 12, and 24 feet [18]. The performance was measured from the number of strokes taken until a ball sank into a hole. The finding was consistent with the objective to identify the specific distance which considered the hardest to putt. Therefore, the objective of this study was to investigate the effectiveness of PIM training program on self-efficacy of the golfers when putting from the 6-feet distance.

Method

A. Participants

Sixty-three male golfers aged between 18 to 25 years old (M=20.83, SD=1.94) participated in this study. The sample size is based on the number population of golfers at the selected golf club i.e., golf academy. All participants had between 1 to 3 years of golf experiences (M=1.40, SD= 0.58).

B. Instrumentation

PIM training program guides. The script explored the functions of the seven PETTLEP components i.e., Physical, Environment, Task, Timing, learning, Emotion, and Perspectives [1]. As suggested by previous study the seven components of PETTLEP imagery in golf putting performance were used in this study such as the proper golf clothing i.e., physical component [10]. Participants were instructed to imagine in a real time like from walking to the green until to get a birdie i.e., emotion and timing components. Participants performed putting on the artificial putting mat in a standing position by holding the putter 10 meters from the actual green i.e., environment component. Next, the task was closely matches the actual task consistent with i.e., task components. The participants listened to their own imagery scripts recorded from the voice recorder i.e., perspective component. Participants were also encouraged to do some changes to the general script every each after the imagery sessions i.e., learning component [10]. In the present study, a digital voice recorder model by Sony ICD-P620 was used since audio aid is an easy tool to bring during the imagery

practice [10][12]. The script was approved by the three professional golfers with Professional Golfers' Association (PGA) teaching certification.

Putting task performance and scoring. The participants used their own putter. Five standard competition balls were provided by the researcher. The artificial grass indoor putting mat (25.4x198cm) with a 10 cm diameter hole at the end of the mat was used in this study. The participants' were asked to perform 10 putts and the scoring was 5 points for each ball holed in, 3 points for each ball that did not hole in but stay at the lip of the hole, 2 points for each ball that went over the high side of the hole and 1 point for each ball that did not reach the hole or pull up short (see figure 1). Thus, each participant was awarded a total score out of the maximum of 50 points [10][13].

Self-efficacy. A set of guidelines for constructing efficacy scales used in this study [19]. The instructor was developed self- efficacy scale software system particularly to perform from the 6-feet distance. Based on this scale the measure was task-specific, hierarchically arranged to represent increasing levels of complexity, and concordant with the performance measure [16][20][21]. The homogeneity of items for this scale is unnecessary because this scale is a hierarchical scale but the internal consistency is compulsory [22]. In the present study, the Cronbach alpha coefficient was .86. Therefore, if the self-efficacy is increased there will be a corresponding increment in golfers putting scores in this study. The participants were asked to record the strength of their belief in their putting performance from the 6-feet distance. The scale measure started with the phrase "**Rate your confidence that you believe you can get….. out of 10 strokes**" the individual items were **(I believe I can get 1 putt in the hole out of 10 strokes, I believe I can get 2 putts in the hole out of 10 strokes and etc..**. Finally, the participants record of the strength on a 100 point scale, from 0 (cannot do at all) 50 (moderately can do) and 100 (highly certain can do).

C. Procedure

For the purpose of gathering data in this study, the researcher was contacting the person in charge at the selected golf club. During the initial meeting with the golfers and club manager, an informed consent was obtained before explaining the objectives of the study. The participants were randomly divided into three different groups (i.e., Practice in Mind group (PIM), traditional imagery group and control group (only physical practice) with 21 participants for each group. For the selection of participants, the imagery ability was assessed. Based on responses to the MIQ-R [23], all participants had acceptable levels of movement imagery ability (i.e., scores 16 or higher). A one-way between groups ANOVA was conducted and the result showed there was no significant difference in imagery ability between the groups $F(2, 60) = 2.83$, $p = .07$. It indicated that all participants had equal imagery ability before the intervention programme. In addition, all participants had a score of 16 or above in imagery ability. Overall, they had acceptable levels of movement imagery ability besides meeting the following criteria; (a) has been playing golf for a period of more than one year (b) has not been involved in any form of imagery training in golf putting (based on the demographic questionnaire).

Before intervention, all participants completed the self-efficacy scale before performed the 10 putts from a 6-feet distance. The putting test was performed on an artificial indoor putting mat 10 meter from the actual green to obtain the similar environment as the actual putting surface [1][10][24]. During the intervention, all participants were instructed to complete the practices three times a week during the 6-week intervention programme. The PIM group was divided into two separate training days due to the training place allocation provided by the academy. Eleven participants performed on Monday, Wednesday, and Friday while 10 participants performed on Tuesday, Thursday, and Saturday. The participants in PIM group performed individually 10 imagery practices together with 10 physical practices (actual putting stroke) at the artificial indoor putting mat 10meter from the actual putting green [10][17].

In the PIM group, each participant received the script and they were asked to make some changes on the script in each of the sessions based on their own skill to putt. They have to listen to their own personal imagery script from a voice recorder. Overall, the present study covered 20 minutes for the whole sessions including physical practice or approximately 10 minutes was taken for 10 imagery practices.

The traditional imagery group also completed 10 imagery practices at the indoor putting mat inside the golf club. The imagery script used consider as a standard procedure for conventional imagery method [2][25]. This written script was printed for each of the participants, compiled together in their own file and they were then asked to practice at home for three times a week in the 6-week intervention programme. They were also instructed to record all the activities regarding the program and practices in a diary including the total number of sessions and places where imagery was being practiced. The participants in the control group only performed 10 physical practices at putting green for 3 times a week in 6-week of program. They were also asked to report the detail of the programme in a diary.

After 4 weeks and 6 weeks of intervention programme, a second and third test were conducted with all participants completing the self-efficacy scale and performed the 10 putts from a 6-feet distance for the second time. One way

repeated measures ANOVA was used to compare the mean scores on the dependent variable (self-efficacy) between the three independent variables i.e., PIM group, traditional group and control group.

Results

Preliminary assumption testing was conducted and the scores are normally distributed. The results of one-way repeated measures ANOVA were performed for self-efficacy in 6-feet distance putting performance across three assessments namely: pre-test, second-test, and post-test in the PIM group, traditional group and control group. Table 1 shows the descriptive statistics followed by pairwise score in Table 2.

Table 1: Descriptive Statistics for Self-Efficacy in Pre-Test, Second-Test, and Post-Test in PIM group, TI group and Control Group

IV	Pre-test		Second-test		Post-test		DV
	Mean	SD	Mean	SD	Mean	SD	
PIM	60.12	5.93	60.54	6.27	67.78	10.85	SE
TI	54.44	9.45	52.06	8.24	56.70	6.92	
CG	58.02	12.59	58.26	9.88	61.06	10.07	

Note: PIM: Practice In Mind group, TI: Traditional Imagery Group, CG: Control Group, SE: Self-Efficacy

Table 2: Pairwise for Self-Efficacy Scores in PIM group

(I)	(J)	Mean dif (I-J)	Std. error	Sig.[a]	95% confidence interval for difference	
					Lower bound	Upper bound
1	2	-.42	1.78	1.000	-5.074	4.236
	3	-7.66*	2.92	.049*	-15.277	-.037
2	1	.42	1.78	1.000	-4.236	5.074
	3	-7.24*	2.08	.007*	-12.676	-1.800
3	1	7.66*	2.92	.049*	.037	15.277
	2	7.24*	2.08	.007*	1.800	12.676

*the mean difference is significant at the .05 level
a. adjustment for multiple comparisons: Bonferani

PIM group: A one-way repeated measures ANOVA was conducted to compare scores on the self-efficacy with Statistics Test at pre-test (prior to the intervention), second-test (after 4-weeks of interventions) and post-test (after the intervention). There is a statistically significant effect in the three assessments, Wilks' Lambda = .62, F (2, 19) = 5.77, p = .011, multivariate partial eta squared = .38. Table 2 shows the pairwise for self-efficacy scores for the PIM group increase from the pre-test to the post-test (M=60.12, SD=5.93 vs. M=67.78, SD=10.85, respectively) and this is statistically significant (p = .049). There is no statistically significant difference in the pre-test to the second test (M=60.54, SD=1.37). Finally, there is a statistically significant increase from the second-test to the post-test (p = .007).

Traditional group: A one-way repeated measures ANOVA was conducted to compare scores on the self-efficacy with Statistics Test at pre-test (prior to the intervention), second-test (after 4-weeks of interventions) and post-test (after the intervention).There is no statistically significant effect in the three assessments, Wilks' Lambda = .176, F (2, 19) = 2.024, p=.16, multivariate partial eta squared = .18.

Control group: A one-way repeated measures ANOVA was conducted to compare scores on the self-efficacy with Statistics Test at pre-test (prior to the intervention), second-test (after 4-weeks of interventions) and post-test (after the intervention). There is no statistically significant effect in the three assessments, Wilks' Lambda = .936, F (2, 19) = .651, p=.53, multivariate partial eta squared = .06.

Discussion

The effectiveness of PIM training program was consistently shown when self-efficacy improved after the intervention. The post-test results indicated that the PIM group scores higher in self-efficacy compared to traditional imagery and control group. Furthermore, there was a statistical significance in the second-test and post test. The finding was

supported by the previous studies [3][4]. Also, supported by another study, the more the person used imagery the more efficacious a person's ability to use imagery [15]. It is probable PIM group improved in self-efficacy compared to traditional and control group, may relate with the presence of the seven components of PETTLEP imagery. As previously discussed that the self-efficacy scores increased from pre- to post-test when there was functional equivalence in an actual competitive setting such as ice condition, instruction by the coach, clothing, and referees [3]. In fact, athletes who engaged with imagery intervention preferred to use scripts that offered experiences similar to the real-life situation [11].

It is shown that the procedure i.e., 10 meter away from the actual environment or putting green used in this study was effective for participants in the PIM training group. The effectiveness of PIM group in the present study may also relate the sessions that were being monitored individually besides listened own imagery scripts. For instance, the method proposed had similar emotions, task and physical components created by the participants in PIM group. Instead of using video or practicing at the real putting green, standing closer to the actual putting green by holding the putter can also make them feel like the actual environment. The results also supported the effectiveness of using audio modality to practice imagery compared to the written scripts [1][10][13]. The results obtained and the conclusions drawn from this study cannot be taken to represent female golfers. Researchers ought to focus on skilled golfers of different age groups. To obtain the effectiveness of PIM training program, the selected psychological variables such as anxiety and mood seem like important and need to be investigated particularly when putting from the hardest distance.

Acknowledgment

The author would like to thank Healthy Generation Malaysia, the coaches and players for the support and cooperation in completing this study.

Conclusion

The present study has provided the idea for coaches and golfers who do not really understand how to teach this strategy. There is a need for interested researchers or coaches to become involved in exploring the specific hardest distance rather than emphasizing more on the swing techniques for use. Firstly, golfers must be trained putting from a particular distance. Next, coaches need to emphasize the PIM training program personally, since this strategy enhances functional equivalence with the actual performance (PETTLEP model) and improves the self-efficacy of golfers prior to performing the task. Therefore golfers will be able to see the final result for all their practices [27]. Overall, they understand that PIM training program is not simply a mental practice; it also helps to obtain valuable results.

References

[1]. Holmes, P.S., & Collins, D.J. (2001). The PETTLEP approach to motor imagery: a functional equivalence model for sport psychologists. Journal of Applied Sport Psychology, 13, 60-83
[2]. Ramsey, R., Cumming, J., & Edwards, M.G. (2008). Exploring a modified conceptualization of imagery direction and golf putting performance. International Journal of Sport and Exercise Psychology, 6, 207-223
[3]. Garza, D.L., & Feltz, D.L. (1998). Effects of selected mental practice on performance, self efficacy, and competition confidence of figure skaters. The Sport Psychologist, 12, 1-15
[4]. McKenzie, A.D., & Howe, B.L. (1997). The effect of imagery on self efficacy for a motor skill. International Journal of Sport Psychology, 28,196-210
[5]. Morris, T., Spittle, M., & Watt, AP. (2005). Imagery in sport. United States: Human Kinetic
[6]. Short, S.E., Monsma, E.V., Short, M.W. & Harris, A.C. (2004). Is what you see really what you get? Athletes' perceptions of imagery's functions. The Sport Psychologist, 18,341-349
[7]. Moritz, S.E., Hall, C.R., Martin, K.A., & Vadocz, E.A. (1996). What are the confident athletes imaging? An examination of image content. The Sport Psychologist, 10,171-179
[8]. Hall, C.R., Munroe-Chandler, K.J., Cumming, J., law, B., Ramsey, R., & Murphy, L. (2009). Imagery and observational learning use and their relationship to sport. Journal of Sport Science, 27,327-337. doi: 10.1080/02640410802549769
[9]. Memmert, D., Blanco, M., & Merkle, V. (2009). The effects of effort, performance, and expertise on apparent size perception in golf. International Journal Sport Psychology, 40, 270-283
[10]. Mazlan B. Ismail. (2014). Practice in Mind: Help to improve golf putting from the hardest distance. International Journal of Enhanced Research in Educational Development, 2, 7-12
[11]. Holmes, P., & Calmels, C. (2008). A neuroscientific review of imagery and observation use in sport. Journal of Motor Behavior, 40, 433-445
[12]. Smith, D., Wright, C.J., & Cantwell, C. (2008). Beating the bunker: the effect of PETTLEP imagery on golf bunker shot performance. Research Quarterly for Exercise and Sport, 79, 385-391
[13]. Smith, D., & Holmes, P. (2004). The effect of imagery modality on golf putting performance. Journal of Sport and Exercise Psychology, 26, 385-39
[14]. Ramsey, R., Cumming, J., Edwards, M.G., Williams, S., & Brunning, C. (2010). Examining the emotion aspect of PETTLEP-based imagery with penalty taking in soccer. Journal of Sport Behavior, 33, 295-314
[15]. Short, S.E., Tenute, A., & Feltz, D. (2005). Imagery use in sport: meditational effects for efficacy. Journal of Sports Sciences, 23,951-960. doi: 10.1080/02640410400023373

[16]. Nordin S, M & Cumming, J. (2005). Professional dancers describe their imagery: where, when, what, why, and how. The Sport Psychologist 19, 395-416
[17]. Short, S.E., Bruggeman, J.M., Engel, S.G., Marback, T.L., Wang, A.W., & Short, M.W. (2002). The effect of imagery function and imagery direction on self-efficacy and performance on a golf putting task. The Sports Psychologists, 16, 48-67
[18]. Mazlan B. Ismail. (2014). Golf putting: shorter putts are easier, is this really true? International Journal of Enhanced Research in Educational Development, 2, 22-27
[19]. Bandura, A. (Ed.). (1997). Self efficacy: the exercise of control. New York: Freeman.
[20]. Cumming, J., Nordin, S.M., Horton, R., & Reynolds, S. (2006). Examining the direction of imagery and self talk on dart – throwing performance and self efficacy. The Sport Psychologist, 20,257-274
[21]. Moritz, S.E., Feltz, D.L., Fahrbach, K.R., & Mack, D.E. (2000). The relation of self-efficacy measures to sport performance: A Meta analytic review. Research Quarterly For Exercise and Sport, 71,280-294.
[22]. Feltz, D.L., Short, S.E., & Sullivan, P.J. (2008).Self-efficacy in sport; research and strategies for working with athletes, teams, and coaches. United States; Human Kinetics
[23]. Hall, C.R., & Martin, K.A. (1997). Measuring movement imagery abilities: a revision of the movement imagery questionnaire. Journal of Mental Imagery, 21, 143-154
[24]. Wright, C.J., & Smith, D. (2009). The effect of PETTLEP imagery on strength performance. International Journal of Sport & Exercise Psychology, 7, 18-31
[25]. Beilock, S.L., & Gonso, S. (2008). Putting in the mind versus putting on the green: expertise, performance time, and the linking of imagery and action. The Quarterly Journal of Experimental Psychology, 1-13. doi: 10/1080/17470210701625626
[26]. Smith, D., Wright, C., Allsopp, A., & Westhead. (2007). it's all in the mind: PETTLEP-based imagery and sports performance. Journal of Applied Sport Psychology, 19, 80-92
[27]. Callow, N., Roberts, R., Bringer, J.D., & Langan, E. (2010). Coach education related to the delivery of imagery: two interventions. The Sport Psychologist, 18, 277-299.