

A COMPARISON OF MOVEMENT IMAGERY ABILITY AMONG UNDERGRADUATES SPORT STUDENTS

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Abstract

The purposes of the present study were to adapt VMIQ-2 Arabic version that was developed by Roberts et al., (2008) and to determine the internal visual imagery, external visual imagery, and kinesthetic imagery abilities among undergraduates sport students, also to determine whether the gender differences in Vividness of movement imagery were exist. The results indicated that the VMIQ-2 Arabic version is reliable and valid. The imagery of Sensory kinesthetic was clear and reasonably vivid were as moderately clear and vivid for external visual imagery and internal visual imagery. A significant gender differences were observed on the VMIQ-2 Arabic version questionnaires

Key words: External visual imagery, internal visual imagery, kinesthetic imagery, Arabic version VMIQ-2.

Introduction

Imagery, visualization, mental practice, and mental rehearsal have been used interchangeably among researchers, sport psychology consultants, coaches and athletes to describe a powerful mental training technique (Taylor & Wilson, 2005). Most sport coaches observe that the victory against an opponent with similar physical abilities depends in ca. 50% on psychological preparation (Weinberg & Gould 2015). Research in sports psychology has revealed that mental training facilitates successful performance and enhances athletes' personal well-being (Vealey, 2007). One psychological skill that has attracted considerable interest is mental imagery, with its use being reliably reported among elite athletes by a number of researchers (Munroe et al., 2000; Parker & Lovell, 2009). Coaches have indicated that they used imagery more than any other mental training technique, and felt that imagery was the most useful technique they used with their athletes (Bloom et al., 1997; Hall & Rodgers, 1989). Humans are capable of imitating the motor actions of others, because the mind "photographs" the motor skill and uses it as foundation of the performance. Athletes use imagery for many different reasons, including skill learning and practice, strategy development and rehearsal, competition preparation, including familiarization with venues and mental warm-ups, mental skill development and refinement. Imagery has also been shown to help athletes cope with various sport stressors or obstacles, such as injuries, heavy training, and distractions (Morris et al., 2005; White & Hardy, 1998). Imagery is reliant on experiences stored in memory, and participants experience it internally by reconstructing external events in their minds. However, imagery can be used to create new experiences by putting together pieces of any internal picture in various ways (Vealey & Greenleaf, 2006).

Motor imagery (MI), also known as kinesthetic imagery, has been described as an active cognitive process during which the representation of a specific action is internally reproduced in working memory without any overt motor output (Decety & Grezes, 1999). During MI participants feel themselves performing a movement (first-person perspective) without moving the body parts involved in the execution of the same movement. Motor imagery is a key tool in contemporary research with basic and practical applications.

In addition to its use in studying the cognitive aspects of movement planning, imagery has applications in therapeutic and sport settings. For example, with stroke patients and injured athletes, imagery is considered an attractive means to access the motor network and restore motor function without actual overt action. Also, a relatively large body of literature indicates that sport psychologists use mental rehearsal as a means to facilitate practice and improve performance in athletes (see current reviews by Munzert, 2009 and Sharma et al., 2009). There are many Questionnaires to measure the imagery Vividness of movement questionnaire and this one use to measures the ability to movement imagery for more than one direction. Movement Imagery ability is an important topic of research that only recently began to unravel. The purpose of this study was to translate and adapt VMIQ-2 Arabic version that was developed by Roberts et al., (2008) and to determine the internal visual imagery, external visual imagery, and kinesthetic imagery abilities among undergraduates sport students, also to determine whether the gender differences in Vividness of movement imagery were exist within samples of undergraduates sport students We hypothesize that undergraduates sport students have good movement Imagery ability and there are

a gender differences regarding to internal visual imagery, external visual imagery, and kinesthetic imagery abilities.

Methods

Participants

Seventy questionnaires have been distributed, but only forty- five out of them have been approved for purposes of analysis all participants were undergraduates' physical education students No participants were competing in elite level from the University of Jordan (18 male, 28 female)

Procedures

All subjects were administered individually in the in the university of Jordan, all the data were systematically coded and subject to "SPSS" package. The study was granted approval from the University of Jordan, faculty of physical education; all participants gave their written consent to take part in the study. Participants completed the questionnaire independently, though the researcher administering the questionnaire was nearby to provide clarification if requested. There was no specified time limit to complete the VMIQ-2 but generally, participants took 10 minutes to complete the questionnaire.

Measures

Vividness of movement imagery questionnaire 2 (VMIQ-2: Roberts et al., 2008). The VMIQ-2 is a revision of the Vividness of Movement Imagery Questionnaire (VMIQ: Isaac, Marks, & Russell, 1986) and comprises 12 items that assess the ability to image a variety of movements.

Participants are required to image each item in three ways: using internal visual imagery; external visual imagery; and kinesthetic imagery, and rate the vividness on a five-point Likert scale from 1 (perfectly clear and vivid) to 5 (no image at all).The VMIQ-2 has demonstrated acceptable factorial validity, construct validity and concurrent validity (see Roberts et al.). For the purpose of the present study, the VMIQ-2 was adapted by adding the following items related to preference and order after the ability items.

The present study used Vividness of movement imagery questionnaire 2 Arabic version that showed

satisfactory face and content validity, good internal consistency

Data analysis

Internal consistency reliability estimates were performed on the three subscales of the VMIQ-2. Descriptive statistics were computed to demonstrate mean values for visual external and internal imagery, kinesthetic imagery. To evaluate whether differences existed in participants' visual external and internal imagery, kinesthetic imagery vividness scores a t – test was conducted.

Results

Validity

The questionnaire translation permission was gotten from authors Roberts et al., 2008 , Three native speakers From Jordan translated the original VMIQ-2 from English to Arabic, following instruction to preserve meaning, and cultural relevance. Also results from VMIQ-2 Arabic version were also compared by three teacher who was bilingual (native Arabic speaker fluent in English), Finally the obtained results were compared and corrected independently by the authors from faculty of physical education they compared the last translations and dimensions to assure acceptable social validity and comparability of intent with English language. Also Regarding validity, the results showed that this questionnaire has concurrent validity (0.89) and acceptable convergent validity of the construction between its subscales.

Reliability

The Values of alpha coefficients was used to assess the reliability of VMIQ-2 Arabic version the results indicated that the subscales of visual external and internal imagery, kinesthetic imagery and total scale, were $r=0.98$, $r=0.98$, $r=0.98$ and $r=0.99$, respectively, which suggests the existence of a high reliability in the subscales and overall scale vividness of movement imagery. Table (1) shows the Cronbach's alpha corresponding to each variable. To determine the external visual imagery, internal visual imagery and kinesthetic imagery abilities among undergraduates sport student's means and standard deviations were calculated for subscales of the VMIQ-2 Arabic version (see Table 2).

Table 1. Internal consistency of Cronbach's Alpha reliability for the VMIQ-2 Arabic version.

Variable	Cronbach's Alpha	No. of Item
External Imagery	0.980	12
Internal Imagery	0.982	12
Sensory kinesthetic imagery	0.982	12
Total	0.994	36

Results indicate participants' vividness of imagery was clear and reasonably vivid to moderately clear and vivid (External Imagery $M = 3.8$, Internal Imagery, $M = 3.46$, Sensory kinesthetic Imagery, $M = 2.69$) . As can be seen from Fig. 1. According to the gender differences regarding to internal visual

imagery, external visual imagery, and kinesthetic imagery abilities the results indicated that there were gender differences demonstrated in female were clear and vivid more than male for External Imagery and Sensory kinesthetic. As can be seen from table 3.

Table 2. External visual imagery, internal visual imagery and kinesthetic imagery.

VMIQ-2 Arabic	External Imagery		Internal Imagery		Sensory kinesthetic Imagery	
	Mean	Std.	Mean	Std.	Mean	Std.
Walking	4.06	1.38	3.62	1.40	2.84	1.63
Running	4.02	1.46	3.60	1.54	2.75	1.68
Kicking a stone	3.95	1.42	3.46	1.51	2.66	1.60
Bending to pick up a coin	3.91	1.41	3.35	1.47	2.55	1.51
climbing the stairs while running	4.02	1.46	3.60	1.52	2.77	1.67
Jumping on walls	3.53	1.70	2.91	1.66	2.15	1.47
Throwing a stone in water	3.97	1.27	3.51	1.34	2.88	1.30
Kicking the ball in the air	3.83	1.32	3.35	1.35	2.55	1.39
Running on a slope	4.02	1.40	3.68	1.44	2.84	1.63
Riding a bicycle	4.02	1.20	3.64	1.26	2.99	1.28
Swinging on a rope	3.88	1.34	3.55	1.35	2.75	1.53
Jumping off high walls	3.74	1.44	3.26	1.45	2.48	1.44
Total	3.8	1.39	3.46	1.40	2.69	1.47

The VMIQ-2's rating scale associates increased vividness with lower scores.

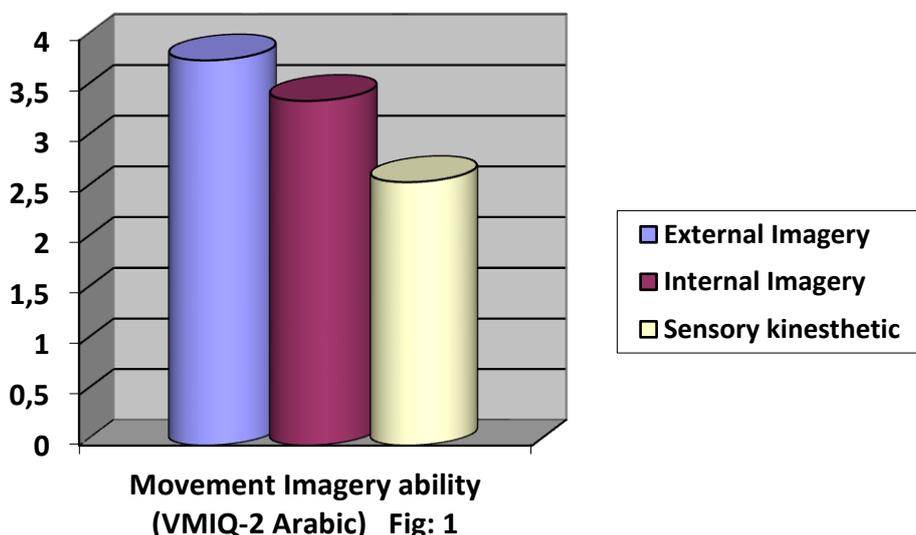


Figure 1. Movement imagery ability (VMIQ-2 Arabic).

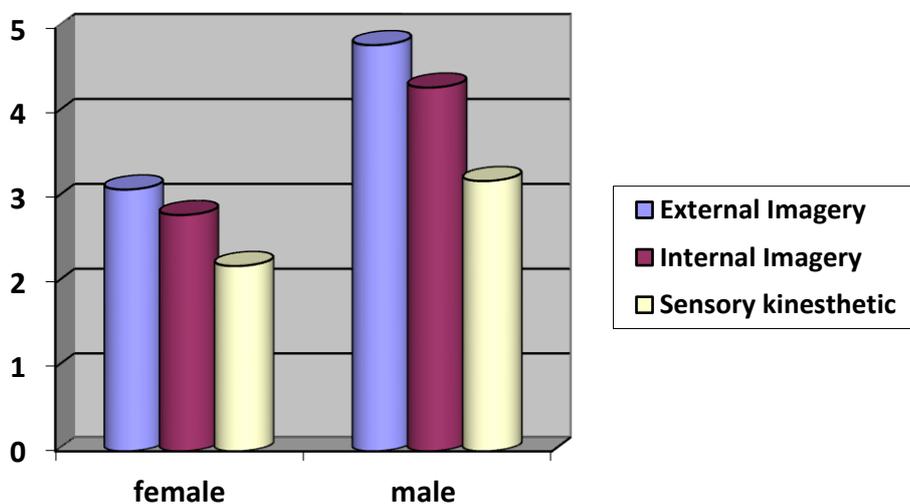


Figure 2. Vividness of movement imagery regarding Gender differences

Table 3. Vividness of movement imagery regarding Gender differences.

VMIQ-2	Male (18)		Female(26)		t	sig
	Mean	SD	Mean	SD		
External Imagery	4.81	.21	3.1451	1.45	4.821	.000
Internal Imagery	4.37	1.24	2.8611	1.16	4.136	.339
Sensory kinesthetic Imagery	3.29	1.83	2.2901	1.03	2.347	.000

Discussion and conclusion

The present study translated and adapted VMIQ-2 Arabic version that was developed by Roberts et al., (2008) and examined the external visual imagery, internal visual imagery and kinesthetic imagery abilities among undergraduates sport students, Overall VMIQ-2 Arabic version has concurrent validity (0.89) and acceptable convergent validity of the construction between its subscales. The subscales of visual external and internal imagery, kinesthetic imagery and total scale, were high reliability and acceptable. Undergraduates sport students (gymnastic course) participants recorded vividness of movement imagery scores for visual external (M = 3.8, SD = 1.39), internal visual imagery (M = 3.46, SD = 1.40), and Sensory kinesthetic Imagery (M = 2.69, SD = 1.47) respectively, however sport students didn't record greater mean imagery vividness

scores for external visual imagery, internal visual imagery and kinesthetic imagery rating 1 that mean perfectly clear and vivid (normal vision or feel of movement), . The results demonstrated imagery of Sensory kinesthetic was clear and reasonably vivid were as moderately clear and vivid for, external visual imagery and internal visual imagery. More about gender significant differences between the VMIQ-2's subscales were demonstrated with participants recording greatest imagery vividness of Sensory kinesthetic and external visual imagery, females were good, clear and vivid more than male. On the other hand Campos (2013) study found no gender differences on the imagery questionnaires. In this study, the focus was Movement Imagery ability among undergraduates sport students, Future research can further investigate and improve Movement Imagery ability among sport students or athletes considering gender differences, kind of sports.

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