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## To study the relationship between flow state of male and female shooters

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### Abstract

**Background:** "Flow states" are so highly desirable, both for the individual student and the teacher. Conditions in which flow happens are considered in the literature by an improved level of challenges, a feeling of control adapted to the learner, a touch of imaginary, and feedback of the system.

**Methods:** The study is a descriptive type with single cross sectional design. The purposive sampling technique has been used to select the sample of the study. The sample of 22 subjects which consist of 11 male and 11 female Indian rifle and pistol shooters.

**Results:** It has been found that Indian shooters showed more scores on dispositional scale. Indian shooters show more mean on challenge-skill balance, merging of action and awareness, clear goals, unambiguous feedback, concentration on the task at hand, sense of control, loss of self-consciousness, and transformation of time, autotelic experience and total FSS-2 scale.

**Conclusions:** Correlation based on dispositional flow scale and its item: players showed significant and positive correlation among FSS-2, DFS-2 and its items. Total dispositional flow scale and Total flow state scale scores of the players increases with increases of items.

**Keywords:** flow state, flow state scale-2 (FSS) & dispositional flow scale (DFS)

### Introduction

Flow also called "Optimal experience" is a concept developed by Mihaly Csikszentmihalyi. "The holistic experience that people feel when they act with total involvement" (Csikszentmihalyi, 1975). Flow-the state in which people are so involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it. "A sense of that one's skills are adequate to cope with the challenges at hand in a goal directed, rule bound action system that provides clear clues as to how one is performing. Concentration is so intense that there is no attention left over to think about anything irrelevant or to worry about problems. Self-consciousness disappears, and the sense of time becomes distorted. An activity that produces such experiences is so gratifying that people are willing to do it for its own sake, with little concern for what they will get out of it, even when it is difficult or dangerous." (Csikszentmihalyi, 1991) [2]. Mihaly Csikszentmihalyi was the first to use the flow concept in Western psychology (1977). He defines flow as-the holistic sensation that people feel when they act with total involvement. Flow was first described as an autotelic experience. The word autotelic comes from the Greek word auto which means self, and telos which means goal or purpose, and refers to an activity that is satisfying for its own sake (Csikszentmihalyi, 1977). An autotelic experience happens when a person does something that is intrinsically motivating. Deci & Ryan (1985) proposed that flow can signify a purer instance of intrinsic motivation. Csikszentmihalyi (1991) [2] has suggested that when facing the state of flow in an activity several times, a person will perform that activity for its own sake; thus, the activity becomes intrinsically motivated. Within a sport context, Jackson (1992) defined flow as a -psychological process involving a state of total absorption into an activity and with experiential characteristics that make the experience so intrinsically rewarding that the experience of flow becomes a goal in itself. Introducing a sport-specific model of flow, Kimiecik and Stein (1992) adopted a definition from Csikszentmihalyi (1990), defining flow as-autotelic experience (performed for its own sake) accompanied by above average feeling states that begins when perceived challenges and skills

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are above average, and are in balance. Previous definitions of flow have incorporated and highlighted dimensions of flow and processes underlying the generation of the flow state. In addition, the definitions have emphasized the connection between personal and situational aspects and flow. A working definition that includes the essential characteristics of the definitions stated in this section could be thus summarized: Flow in sport is affected by personal and situational interactions, including a match between personal skills and current challenges in a structured activity that is important to the self, and which positively influences cognitive and motivational processes, being exclusively directed on the task at hand and leading to a holistic state characterized by absorption and positive affect, such as an autotelic experience. This definition is not original, but it reflects key aspects of previous flow definitions. Flow is important to athletes, because it facilitates peak performance. When in flow, athletes can be pushed to the limits of their performance (Jackson & Csikszentmihalyi, 1999) [7]. Flow is also important to athletes because the experience of flow is rewarding for its own sake, i.e. autotelic or intrinsically motivated. Without flow one might lose the feeling of enjoyment in doing sports (Jackson & Csikszentmihalyi, 1999) [7]. According to Jackson and Csikszentmihalyi (1999) [7] there are nine essential elements of the flow state that make athletic activities intrinsically interesting in relation to sports. Jackson and Eklund (2004) developed a scale, the Dispositional Flow Scale (DFS) based on these elements, or dimensions, which are thought to constitute the optimal psychological state of flow (Jackson & Csikszentmihalyi, 1999; Jackson & Eklund, 2004) [7].

### Flow in education

It is important to us that teachings generate interest, enhances concentration and favours creativity, which is very distinct but somehow unified phenomena. Lloyd P. Rieber (1998) persuasively argues that learning itself-and not just the result-should be interesting, if one seeks higher motivation among learners. "Serious play" or "hard fun" are intense learning circumstances where learners engage large amounts of "energy" and time and that do provide equally intensive pleasure at certain moments and which have been identified

as "flow" or "optimal experience" by Mihaly Csikszentmihalyi in (1990). Flow situations have been mainly noticed and studied in play or artistic creation and are defined as states of happiness and satisfaction that arise when "carried" by an automatic and spontaneous activity. It is interesting for teachers to know that "flow states" support the impression of discovery and creation and boost performance in conjunction with important cognitive efforts. "Flow states" are so highly desirable, both for the individual student and the teacher.

### Objective of the study

The descriptive study was conducted with the objective to explore the relationship among international shooter on the variables of flow and its nine dimensions.

### Methods and procedure

The present study deals with an assessment of relationships of male and female Indian shooters With regard to their flow state. The sample of 22 subjects in which 11 males and 11 female Indian rifle and pistol shooters who attended the camp from 5th to 19th February at Dr. Karni Singh Shooting Ranges, New Delhi for the International Shooting Sports Federation (ISSF) World Cup 2019 which actually held on 20th to 28th February 2019. The test items chosen as criterion measures were found to be most reliable and are widely used all over the world for assessing flow states and immersion. The tools used in this study were The Dispositional flow state scale (DFS-2) (Jackson and Eklund, 2004), The Flow state scale-2 (FSS-2) (Jackson and Eklund, 2004). The level of significance was set at 0.05 level, the data were analyzed by using SPSS Version 21. Flow scale and its nine dimensions:

- Challenge skill balance
- Action awareness merging
- Clear goals
- Unambiguous feedback
- Concentration on task at hand
- Sense of control
- Loss of self-consciousness
- Transformation of time
- Autotelic experience

**Table 1:** Correlation between DFS-2 and its items

	Total DFS_2	Challenge skill Balance	Merging of Action and Awareness	Clear Goals	Unambiguous Feedback	Concentrations on the Task at Hand	Sense of Control	Loss of self Consciousness	Transformation on of Time	Autotelic experience
Total DFS_2	1	.606**	.536**	.650**	.393*	.769**	.615**	.447*	.576**	.302
Challenge skill Balance	.606**	1	.373*	.504**	.241	.487*	.241	.002	.072	.300
Merging of Action and Awareness	.536**	.373*	1	.571**	-.105	.315	.151	.197	.211	-.130
Clear Goals	.650**	.504**	.571**	1	-.109	.508**	.110	.280	.236	.170
Unambiguous Feedback	.393*	.241	-.105	-.109	1	.372*	.481*	-.223	.058	.401*
Concentration on the Task at Hand	.769**	.487*	.315	.508**	.372*	1	.379*	.256	.334	.136
Sense of Control	.615**	.241	.151	.110	.481*	.379*	1	.219	.212	.289
Loss of self-Consciousness	.447*	.002	.197	.280	-.223	.256	.219	1	.403*	-.348
Transformation of Time	.576**	.072	.211	.236	.058	.334	.212	.403*	1	.033
Autotelic experience	.302	.300	-.130	.170	.401*	.136	.289	-.348	.033	1

\*\*Correlation is significant at the 0.01 level (1-tailed)

\*Correlation is significant at the 0.05 level (1-tailed). c. List wise N=22

Table 1 represents the correlation between Total DFS-2 and its items of shooters. The significant correlation were obtain for Challenge skill balance ( $r=0.61$ ,  $p<0.01$ ), merging of action and awareness ( $r=0.53$ ,  $p<0.01$ ), clear goal ( $r=0.65$ ,  $p<0.01$ ), unambiguous feedback ( $r=0.39$ ,  $p<0.01$ ),

concentration on the task at hand ( $r=0.76$ ,  $p<0.01$ ), sense of control ( $r=0.61$ ,  $p<0.01$ ), loss of self-consciousness ( $r=0.44$ ,  $p<0.01$ ), transformation of time ( $r=0.57$ ,  $p<0.01$ ), autotelic experience ( $r=0.30$ ,  $p<0.01$ ) at 0.01 level of significance. From above discussion we can see that all items showed

significant and positive correlation with total dispositional flow state scale 2. Therefore we come at conclusion that total

dispositional flow state2 of shooters increases with increase of their items.

**Table 2:** Correlation between total FSS-2 and its items

	Total FSS-2	Challenge skill Balance	Merging of Action and Awareness	Clear Goals	Unambiguous Feedback	Concentrations on the Task at Hand	Sense of Control	Loss of self Consciousness	Transformation on of Time	Autotelic experience
Total FSS_2	1	.872**	.780**	.842**	.737**	.896**	.844**	.756**	.781**	.814**
Challenge skill Balance	.872**	1	.622**	.696**	.661**	.731**	.764**	.601**	.679**	.643**
Merging of Action and Awareness	.780**	.622**	1	.492*	.592**	.691**	.713**	.438*	.778**	.463*
Clear Goals	.842**	.696**	.492*	1	.594**	.850**	.614**	.713**	.457*	.742**
Unambiguous Feedback	.737**	.661**	.592**	.594**	1	.471*	.682**	.587**	.469*	.483*
Concentration on the Task at Hand	.896**	.731**	.691**	.850**	.471*	1	.632**	.696**	.635**	.808**
Sense of Control	.844**	.764**	.713**	.614**	.682**	.632**	1	.436*	.792**	.555**
Loss of self-Consciousness	.756**	.601**	.438*	.713**	.587**	.696**	.436*	1	.397	.686**
Transformation of Time	.781**	.679**	.778**	.457*	.469*	.635**	.792**	.397	1	.484*
Autotelic experience	.814**	.643**	.463*	.742**	.483*	.808**	.555**	.686**	.484*	1

\*\*Correlation is significant at the 0.01 level (2-tailed).

\*Correlation is significant at the 0.05 level (2-tailed). c. List wise N=22.

Table 2 represents the correlation between FSS-2 and its items of shooters. Significant correlation were obtained for challenge skill balance ( $r=0.87$ ,  $p<0.01$ ), merging of action and awareness ( $r=0.78$ ,  $p<0.01$ ), clear goals ( $r=0.84$ ,  $p<0.01$ ), unambiguous feedback ( $r=0.74$ ,  $p<0.01$ ), concentration on the task at hand ( $r=0.89$ ,  $p<0.01$ ), sense of control ( $r=0.84$ ,  $p<0.01$ ), loss of self-consciousness ( $r=0.78$ ,  $p<0.01$ ), transformation of time ( $r=0.76$ ,  $p<0.01$ ), autotelic experience ( $r=0.81$ ,  $p<0.01$ ) at 0.01level of significance. From above discussion we can see that all items showed significant and positive correlation with Total flow state scale 2. Therefore, we concluded that flow state scale-2 of player increases with increase of their items.

**Findings in respect with relationship between dispositional flow scale-2 and its items of Indian male and female shooters:** The significant correlation were obtain for Challenge skill balance ( $r=0.61$ ,  $p<0.01$ ), merging of action and awareness ( $r=0.53$ ,  $p<0.01$ ), clear goal ( $r=0.65$   $p<0.01$ ), unambiguous feedback ( $r=0.39$ ,  $p<0.01$ ), concentration on the task at hand ( $r=0.76$ ,  $p<0.01$ ), sense of control ( $r=0.61$ ,  $p<0.01$ ), loss of self-consciousness ( $r=0.44$ ,  $p<0.01$ ), transformation of time ( $r=0.57$ ,  $p<0.01$ ), autotelic experience ( $r=0.30$ ,  $p<0.01$ ) at 0.01 level of significance. From above discussion we can see that all items showed significant and positive correlation with total dispositional flow state scale- 2. Therefore, we concluded that total dispositional flow state-2 of shooters increases with increase of their items.

**Findings in respect with relationship between Flow State Scale-2 and its items of Indian male and female shooters:** The significant correlation were obtained for challenge skill balance ( $r=0.87$ ,  $p<0.01$ ), merging of action and awareness ( $r=0.78$ ,  $p<0.01$ ), clear goals ( $r=0.84$ ,  $p<0.01$ ), unambiguous feedback ( $r=0.74$ ,  $p<0.01$ ), concentration on the task at hand ( $r=0.89$ ,  $p<0.01$ ), sense of control ( $r=0.84$ ,  $p<0.01$ ), loss of self-consciousness ( $r=0.78$ ,  $p<0.01$ ), transformation of time ( $r=0.76$ ,  $p<0.01$ ), autotelic experience ( $r=0.81$ ,  $p<0.01$ ) at 0.01level of significance. From above discussion we can see that all items showed significant and positive correlation with Total flow state scale-2. Therefore, we concluded that flow state scale-2 of player increases with increase of their items.

### Discussion of findings

All items of dispositional flow scale-2 showed significant and positive correlation with total dispositional flow state scale-2. All items of flow state scale-2 showed significant and positive

correlation with Total flow state scale-2. The present study has been in line with the study of Lennart Nacke Craig A. Lindley (2008) [4] They examine the first person shooter in gaming reported that the positive correlation between subjective and objective indicators of gameplay experience shows the great potential of the method presented here for providing real-time emotional profiles of gameplay that may be correlated with self-reported subjective descriptions. Overall, the GEQ results seem to validate the intended level design for the flow level. However, there seems not to be enough evidence in the data to subjectively discriminate between experiences in the immersion and the boredom levels. Present study has been supported by the study of Yeong-Gwon Jo, Jong-Sik Lim and Chun-Ho Yang (2016) [5] They examines the relationship among participation motivation, game immersion, and exercise performance for golf players. Frequency analysis, factor analysis, reliability verification, correlation analysis, and multiple regression analysis were conducted on 225 golf players in this study; cognitive immersion and behavioural immersion from game immersion positively influence internal satisfaction, social recognition, and adding values. In addition, according to the identification of the influence of participation motivation on exercise performance, personal performance, team performance, and ability utilization positively influence internal satisfaction, social recognition, and adding values.

### Conclusion

It has been concluded that the Correlation based on dispositional flow scale and its item shooters showed significant and positive correlation between DFS-2and its items. Total dispositional flow scale score of the shooters increases with increases of items. Correlation based on Flow state scale and its items shooters showed significant and positive correlation between FSS-2 and its items. Total flow state scale of shooters increases with increases of items.

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