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Flow state and Mindfulness: A comparative Analysis of the Creatively Gifted

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Abstract

Flow theory has been aimed at understanding the phenomenology of intrinsic motivation and has generated wide areas of research (Csikszentmihalyi, 1990). Though Csikszentmihalyi (2002) reported that the experiences of flow tend to be universal, yet he proposed that people may vary widely in the frequency with which it was felt. Giftedness is seen as anachronistic development in which advanced cognitive abilities and heightened intensity combine to create inner experiences and awareness that are qualitatively different from the norm. In similar vein it is estimated that Creatively Gifted individuals by virtue of their advanced cognitive abilities and heightened sensitivity levels would have a greater propensity to experience both flow state and mindfulness. Mindfulness is regarded not as the achievement of any specific state, but as premeditated awareness of what is, being aware of awareness. Attaining a state of flow precedes attaining that of mindfulness i.e. a state of complete attention focusing. The present study was designed to assess the differences in the degree of Flow state and Mindfulness experienced by the Creatively Gifted and the Average Creative ability group. TTCT by Torrance (1990) was used to screen the creatively

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gifted and the average creatives. Scores on Flow State and Mindfulness were assessed using the Flow State Scale by Jackson and Marsh (1996) and Freiburg Mindfulness Inventory by Walach et al. (2001) respectively. Results from One way analysis of variance point towards significant variations in Flow state and Mindfulness amongst the two groups. Keywords: Creatively Gifted, Flow State, Mindfulness.

"Creation is observed to be an inevitable desire of human beings which exhibits their search for the denotation of the self. Of all human activities, creativity comes closest to providing the fulfilment we all hope to get in our lives." (Csikszentmihalyi, 1996b)

Introduction

Torrance (1969) defined creativity as a process of becoming sensitive to problems, missing elements, disharmonies, deficiencies gaps in knowledge; identification of the difficulties, formulating hypothesis, searching for solution then modifying and retesting the formulated hypotheses, and finally producing the result. While it is a significant aspect of various modern models of giftedness, creativity was generally left undisguised in gifted education. A vital reason for this late occurrence in the domain of gifted education was that creativity was frequently undermined in comparison to intelligence or high ability being significant markers of giftedness. Gradually, however, researchers of gifted education segregated and acknowledged creativity as a separate construct from intelligence and embraced it as an essential part of the gifted experience. Furthermore, advances in creativity theory and research pointed to exciting new directions for theorising, assessing, and recognising the potential of creative giftedness (Kaufman et al.2009).According to Csikszentmihalyi (1996a) the creative process is a result of the confluence of the field ,domain and person interaction. The curious mind and complex emotions of Gifted individuals lead them to exceptional experiences which entail person centric parenting, teaching, and counselling skills to

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promote optimal development and growth of the individual. A creatively gifted person is a producer of knowledge who churns new ideas via creative thinking pathways and vast experiential learning. During the creative production stage an all encompassing feeling is experienced when compete absorption in the task dilutes any other sentiment or thought .This fulfilling optimal experience has been termed as the Flow state of mind by Csikszentmihalyi (1990).

Csikszentmihalyi, 1990 defined flow as "A state in which people are so involved in an activity that nothing else seems to matter; the experience is so enjoyable that people will continue to do it even at great cost, for the sheer sake of doing it." He concluded that people find genuine satisfaction during the state of consciousness called Flow. In this state they are completely absorbed in an activity, especially an activity which involves their creative abilities. During this "optimal experience" they feel "strong, alert, in effortless control, unselfconscious, and at the peak of their abilities."(Csikszentmihalyi, 1990)

Csikszentmihalyi (1975) in his research on artists, rock climbers, chess players, surgeons, factory workers, and others, interviewed them about their work and leisure activities. The investigation focused thoroughly on those activities that these individuals did for the intense pleasure of doing them as opposed to any concluding product coming out from the activity. Analysing the behaviour of subjects during their chosen activities he noticed the subtle change from the routine. Feelings of contentment, relaxation and joy were found to be prominent part of concentration and activeness. Garces-Bacsal, Cohen and Tan (2011) in their research focussed on the flow experiences of talented adolescents age ranging 14-18 years who were living and attending school in Singapore. They were identified as talented visual and performing art students. The visual artists who were engaged in flow experiences recounted the experience as stress relieving and "relaxing" during detailed interviews. This

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study highlighted that elements of the flow state (enjoyment, loss of self-consciousness, clear goals, intense concentration, and transformation of time) were highly evident among the creatively talented teenagers. Creative individuals indulged to such an extent in their art that they were completely immersed in their activity and consequently reached a state of optimal experience.

The terms flow and mindfulness have often been used interchangeably, yet a clear distinction exist between the nature of these two seemingly similar concepts. Komagata and Komagata (2010)elaborated on flow and mindfulness in relation to concentration. They claimed that our understanding of these concepts was still surfacing and that it was easier to regard them as a continuum of conditions rather than as separate mental states. Mindfulness was innately a state of consciousness that encompassed consciously attending to one's moment-to-moment experience. Concept of Mindfulness was originally derived from Buddhist psychology. The concept of mindfulness was central in Buddhist teachings with respect to importance of consciousness n our daily living (Hayes 2003). It was described as a virtue, nurtured by practice and meditation in everyday life and an attentive mode of perceiving all the contents in mind i.e. sensations, cognitions perceptions and affects. An important component of mindfulness is warm, friendly and accepting attitude towards the elements of our mind. It is essentially a quality of consciousness. Shapiro et al (2006) described mindfulness as both an outcome (mindful awareness) and a process (mindful practice). Mindful awareness could be explained as an abiding presence or a deep knowing that substantiates as *freedom of mind* (eg. freedom from reflexive conditioning or delusions) and mindful practice is the systematic practice of the deliberately attending in an open, caring, and discerning way, which involves both knowing and shaping the mind.

Mindfulness can be understood as a means of thoughtfulness in a specific way, on purpose, in the present moment, and in a non-judgmental way(Kabat-Zinn,1994). The kernel of

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mindfulness is attending to intention, which symbolises the sense of presence. The subjective impression of mindfulness is being alert of wakefulness, which expresses the sense of being present. Diaz (2013) investigated the effects of a brief mindfulness meditation induction technique on perceived attention, aesthetic response, and flow during music listening. Mindfulness training task was introduced to 135 college students divided in two groups, i.e. experimental and control groups, in South America. A majority of participants in the Mindfulness task group reported that the task had modified their listening experience by increasing their ability to focus on the music without distraction. This explained the effect of mindfulness in improving one's attention and enabling them to be more focused on the task at hand.

According to Langer (2005) when people are schooled to be more mindful in a condition, those around them are likely to see them as more captivating and more candid. She cites Henry Ward Beecher saying "every artist dips his brush in his own soul and paints his own nature into pictures". Édouard Manet, a famous French painter, spent his life producing "sincere art." Langer states it to be "mindful art". That's the possible explanation as to why creative minded people attract us towards them, because they bare their soul in a way that is fascinating and unbelievable at the same time. Both mindfulness and flow state do share certain commonalities as well.

Flow state experience and mindfulness, both involve being present, attentive and actively engaged. Flow state and mindfulness share plenty of characteristics such as non-judgemental attitude, moment-to-moment awareness, and concentration on the task at hand. It is asserted that with the help of mindfulness enhancing interventions, it is possible to increase the probability of sports persons experiencing the ever so evasive state of peak performance i.e. flow (e.g., Gardner & Moore, 2007).In a correlation research between flow, mindfulness and self-talk, Joachim Bervoets (2013), confirmed the moderate positive connections between

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flow and mindfulness. The linear regression analysis indicated that mindfulness seemed to significantly predict flow (F = 50.395 [1, 211], p < .001).In other words, mindfulness preceded the experience of flow i.e. an individual who was focused on what he was doing at that very moment, without thinking about anything else, experienced the flow state of mind.

In a study, Clark (2002) analysed the effect of mindfulness on the time spent in Flow state experience. His study specifically probed the influence of a mindfulness training protocol that was based on a self-regulated attention regulation intervention program on unvarying optimal experiences in a sample of undergraduate students. Meditation and attention control strategies were taught to the participants as part of the research protocol. Experience sampling method was employed for testing the participants' Flow state experience during their daily life before and after the training period. Three out of the six participants experienced effects of training, advocating that mindfulness training can help individuals in elevating the time spent in Flow state experience during the course of their day.

Creativity, Flow experience and Mindfulness show much appreciated relation with each other as discussed in their mutual characteristics. In his research on optimal experience Csikszentmihalyi (1990) had shown how creative moments occurred through intentional effort and not just happened by chance: "The best moments usually occur when a person's body or mind is stretched to its limits in a voluntary effort to accomplish something difficult or worthwhile". Because elevated awareness is a shared factor between both the states, which are, mindful creativity and optimal performance, it can be conjectured that the Langer's state of cognitive mindfulness as well as Csikszentmihalyi's psychology of flow share qualitative characteristics.

Until recently giftedness was typically viewed from the elevated intellectual ability perspective. Nuances related to the nature and dynamics of creative giftedness thus entails

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comprehensive psychological assessment. The captivating experience of losing one's sense of time and identity is a unique feature of the existential reality of eminent creatives as reported in their personal narratives. This flow state has recently garnered research attention but no empirical evidence till date has focused exclusively on investigating psychological indices contributing to it during the state of creative production amongst the creatively gifted. Mindfulness permeates the state of optimal experience (flow state) helping to seize the creative state in the moment, allowing the creator to fully merge himself with the task at hand. Thus the present investigation aimed to provide new insights into the flow state experience via the dynamic interplay of mindfulness among creatively gifted and average creative groups.

Hypotheses

1. Creatively Gifted youth would be significantly higher on Flow state experience in comparison to the Average creatives.
2. Creatively Gifted youth would be significantly higher on Mindfulness in comparison to Average creatives.

Method and Procedure

Initially about 140 participants were chosen on the basis of recommendation by faculty and experts of various domains. Finally 80 participants were screened in for the study. Out of these 80 participants 40 were falling in the Creatively Gifted category and 40 belonged to the Average Creative category. The participants were both graduates pursuing post-graduation and post graduates registered for PhD. Participants were age ranging between 19 - 25 years. To be able to screen in the Creatively Gifted youth from amongst the Faculty of Arts and Culture help was sought from the Dean of the faculty who issued letter requesting the HODs to provide assistance to the study. With due permission, HODs of Department of Dance,

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Department of Fine Arts, Department of Music, Department of Theatre and Department of Gurmat Sangeet (devotional music)were requested to helpscreen in creatively gifted by referencing highly talented students from their departments. Special assistance by respective HODs came in context of:

1. Providing free time to the students to participate in the study
2. Senior professors served as experts to identify the Creatively Gifted sample on the basis of outstanding achievements such a prize winning contributions and quality work in their respective domains.

Further screening for Creatively Gifted in Fine Arts domain was based on:

Score between 90th and 95th percentile on TTCT (Figural) *As per Georgia board of Education Rule 160-4-2-.38.*Participants from Music, Theatre, Dance and Gurmat Sangeet(Devotional singing) departments were screened using the Consensual Assessment Technique (Amabile, 1982).

Screening for average creatives was done on the basis of their score on Torrance test of Creative Thinking (TTFT, Torrance. E. Paul, 1996) i.e. 70th to 80th percentile.The TTFT was administered in group settings. Each group comprised of 6 to 8 participants. During testing standard instructions prescribed in the respective manuals of the psychological tests were followed for administration and scoring of each test. After screening a session was conducted with the participants with the aim to gather information from the participants on their experiences during their creative production phases of work and study . The screened in sample of creatively gifted and average creatives were then administered The Flow State Scale by Jackson and Marsh (1996) and Freiburg Mindfulness Inventory by Buchheld(ref),to assess flow state experience and mindfulness respectively.

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Table 1. Subject wise distribution of participants in Creatively Gifted group:

Name of the Department	**No. of Subjects**
Fine Arts	10
Music (Singers)	8
Music (Instrumentalists)	7
Theatre	5
Gurmat Sangeet (Devotional singing)	3
Dance	3
Psychology	4
Total	40

Table 1.1 Subject wise distribution of participants in Average Creative group:

Name of the Department	**No. of subjects**
Psychology	11
Law	7
Chemistry	11
Commerce	6
Life Sciences	5
Total	40

Measures

1. **Torrance Test of Creative Thinking (Figural, Torrance. E. Paul, 1990):** The Torrance test of creative thinking (TTCT) was first developed by Torrance in the year

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1966 and it has undergone rigorous improvement till its most recent edition. The Torrance test of creative thinking has been designed to identify and evaluate creative potential using two parts: a verbal test and a figural test. Each test has two parallel or alternate forms as well. For the present investigation form A of figural test was used. The test comprised three figural activities. Following is a description of the activities involved in the TTCT:

No.	Figural tasks	Time allowed
1	Picture construction	10 mins.
2	Picture completion	10 mins.
3	Lines	10 mins.

This test can be administered from the kindergarten level to the graduate level and beyond, in both individual and group settings. These activities are scored as per the directions for scoring given in the manual itself. The TTCT accounts for the construct of creativity in terms of the following factors:

Fluency- the ability to generate a large number of ideas.

Flexibility- the ability to generate a large variety of ideas.

Originality- the ability to generate ideas that are uncommon in terms of statistical fluency.

Elaboration- the ability to further develop and enhance an idea.

The Torrance test of creative thinking is the most widely used creativity test. Studies have reported high levels of inter-scorer reliability (0.90) as well as test-retest and alternate form reliabilities (0.59-0.97). Various researchers (Wechsler & Naglaeri, 2006; Almeida, et al., 2008) have found the Torrance test of creative thinking to be a valid predictor of creative achievement, even across cultures.

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2. **The Flow State Scale(S. A. Jackson and H. W. Marsh 1996):** Nine dimensions of Flow State given by Csikszentmihalyi (1990) which together compose the flow experience are measured: 1) A challenge-skill balance. 2) Merging of action and awareness. 3) Having clear goals. 4) Unambiguous feedback. 5) Total concentration on the task. 6) A sense of being in control. 7) Loss of self-awareness. 8) Loss of time-awareness. 9) Autotelic experience. Each of the aforementioned dimensions is represented by four items, making a total of 36 items. Each item is scored on a Likert scale ranging from 'never' to 'always'. Cronbach's alpha coefficient is .918.

3. **Freiburg Mindfulness Inventory (FMI):** Freiburg Mindfulness Inventory by Buchheld, Grossman & Walach, (2001) is a 30 items scale. Statements like ''I am open to the experience of the present moment," are rated on a four-point scale from 1 (rarely) to 4 (always). Scores range from 14 to 56 and higher scores indicate a greater degree of mindfulness. Scale comes with internal consistency of Cronbach alpha of 0.93 is able to significantly demonstrate the level of mindfulness. Reliability analysis of the FMI scale yielded a reliability coefficient of 0.80.
4. **Consensual Assessment Technique (Amabile, 1982):** The Consensual Assessment Technique is a fairly new method of measuring creativity. The Consensual Assessment Technique is a powerful tool used by creativity researchers in which panels of expert judges are asked to rate the creativity of creative products such as stories, collages, poems, and other artefacts. Experts in the domain in question serve as judges; thus, for a study of creativity using stories and poems, a panel of writers and/or teachers of creative writing might judge the creativity of the stories, and a separate panel of poets and/or poetry critics might judge the creativity of the poems. In her more recent work Amabile (1996) has found a range of inter-rater reliability correlations from .70 to .89. The Consensual Assessment Technique is based on the

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idea that the best measure of the creativity of a work of art, a theory, a research proposal, or any other artifact is the combined assessment of experts in that field. Unlike other measures of creativity, such as divergent-thinking tests, the Consensual Assessment Technique is not based on any particular theory of creativity.

Results and Discussion

The present section deals with results of analysis of variance aimed at finding the level of significance of differences between two groups Creatively Gifted and Average Creatives on scores of 'The Flow State Scale' and 'Freiburg Mindfulness Inventory'. Criterion used for screening Creatively Gifted group was percentile score (90^{th} and above) on TTCT (figural) and teacher rating on the basis of their expertise and accomplishments in the concerned area. In Average Creatives group TTCT (figural) percentile score between70^{th} to 80^{th}on TTCT Figural was the screening criteria.

In order to test the first hypothesis that 'Creatively Gifted youth would be significantly higher on Flow state experience in comparison to the Average creative group', the scores of subjects from CG and AC groups on Flow state experience were subjected to oneway analysis of variance. The results of the analysis have been summarized in table no. 2 and 2.1.

Table 2: Summary table for Flow State experience:

GROUPS	MEAN	SD	F
CREATIVELY GIFTED (CG)	129.65	20.09	291.01**
AVERAGE CREATIVES (AC)	73.575	5.33	

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*p<.05; **p<.01

Table 2.1 One Way Analysis of Variance for Flow State experience amongst Creatively Gifted and Average Creatives:

SOURCE OF VARIATION	SS	DF	MS	F
BETWEEN GROUPS	63.11	1	63.11	291.01**
WITHIN GROUPS	17.88	78	216.04	
TOTAL	79.99	79		

*p<.05; **p<.01

The summary of one-way analysis of variance (Table no.2) shows that obtained value of F (291.01, p < .01) for 1, 79 degrees of freedom far exceeded the critical value. This significant value indicated that the subjects in Creatively Gifted group and Average creatives group were significantly different from each other with respect to their Flow state experience. The F value of Creatively Gifted group and Average creatives groupwas 291.01 (Table No. 2.1) which was significant at 0.01 level, showing that participants from Creatively Gifted Group had significantly higherFlow state experience as compared to average creatives. These results supported the hypothesis under consideration i.e."Creatively Gifted would be significantly higher on Flow state experience in comparison to Average Creative group." Supportive evidence is garnered from a study which was designed to observe associations between the optimal experience and the creative output of students, 45 university students were rated for creativity and Experience Sampling Forms used to assess Flow State (Csikszentmihalyi,

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1990). A significant positive correlation was found between flow levels of students and their creativity ratings. Amabile (1989) revealed people were more creative in flow, and they also stated being further creative the day after a flow state experience proposing that flow not only heightens creativity in the moment, but it also heightens it over the extended time. In simple words, experiencing flow actually upskills individuals to be more creative. In concurrence with the present study and as previous researches advocate, people who are high on creativity were more like to experience flow state than the average creative population.

To test the second hypothesis that 'Creatively Gifted youth would be significantly higher on Mindfulness in comparison to the Average creative group', the scores of subjects from CG and AC groups on Mindfulness were subjected to one way analysis of variance. The results of the analysis have been summarized in table no.3 and 3.1.

Table 3Summary table for Mindfulness:

Groups	Average	SD	F
Creatively Gifted (CG)	76.2	9.37	109.33**
Average Creatives (AG)	57.55	7.01	

*p<.05; **p<.01

Table 3.2 One way Analysis of Variance for Mindfulness

Source of Variation	SS	Df	MS	F
Between Groups	75.45	1	75.45	109.33**
Within Groups	53.3	78	68.49	
Total	128.75	79		

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*p<.05; **p<.01

The summary of one-way analysis of variance (Table no.3) showed that obtained value of F (109.33, p < .01) for 1, 79 degrees of freedom far exceeded the critical value. This significant value indicated that the subjects in Creatively Gifted group and Average creatives group were significantly different from each other with respect to their Mindfulness. The F value of Creatively Gifted group and Average creatives group was 109.33 (Table 3.1.) which is significant on 0.01 level, and shows that participants from Creatively Gifted Group experienced higher Mindfulness as compared to average creatives. These results supported the hypothesis under consideration.Colzato, Ozturk, and Hommel (2012) looked at the effects of two different types of meditation on convergent and divergent thinking (creativity component) in a group of Dutch subjects. Each subject participated in three sessions (one session of focused-attention meditation, one of open-monitoring meditation, and one visualization session that was used as a control condition), after which they were given divergent thinking tasks. The researchers found that the open-monitoring meditation (a type of mindfulness) led to significantly higher divergent thinking scores than either the focused-attention meditation or the control exercise, which in turn also supports our research that mindfulness is positively associated with high level of creativity.

Results of the present investigation, indicated that the Creatively Gifted individuals were more likely to experience higher level of mindfulness and flow state of mind.

Research by Seligman(2002) has shown that thoughts pose the biggest threat to achieving a state of Flow and not external distractions. By entering a state of mindfulness, the creative person experiences an instance of being both an active participant and a spectator of this procedure through his own state of being. Wiese (1998) explained that it involves tacit knowledge about the creative process to experience both flow and mindfulness, which is difficult to put into words. It takes bringing one's entire personality into play, to be able to

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enter the both of these states. This means channelling one's own 'spontaneous competence'towards reaching . Mindfulness results in better vision, receptiveness, balance and precision for oneself and others (Kabat-Zinn, 1990, 2003), and as superior leadership occurrence and legitimacy (Langer, 2005; Santorelli, 2000). It ensures amplified energy and sense of welfare and develops awareness and array of our responses (Kabat-Zinn & Santorelli, 2002); hence results in better life, greater creativity, and reduced burnout (Langer, 1989).Implications from this study points that Flow State experience for Average creatives can be enhanced through mindfulness training programs. In the Creatively Gifted sample of participants, creative productions may be heightened by making them aware of experiencing a greater state flow and mindfulness through specially designed interventions. Therefore, it would be right to assume that the secret to attaining both states in an individual is the awareness of two distinct ways of thinking when processing information, involving both sides of the brain. Evidently, an admiration of the concepts of both flow state and mindfulness as catalysts in enhancing creative productions is required if we are to attain a comprehensive understanding of the unchartered territories of creativity and giftedness.

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