CHAPTER - V
FINDINGS, INTERPRETATIONS, RECOMMENDATIONS
AND SUGGESTIONS

5.01 SUMMARY
An attempt has been made to discuss the major findings of the study to throw new light on the unique findings and also to suggest comprehensive ways and means of utilizing the present information in a fruitful manner. This chapter reports the summary of the study under the headings restatement of the problem, findings, interpretation, recommendation, suggestions for further research and conclusion.

5.02 RESTATEMENT OF THE PROBLEM
“Creativity in relation to Physical Fitness and Mental Health of Primary School Children”

5.03 MAJOR FINDINGS

Part I Percentage Analysis:

1. The Creative ability of majority of the 5th graders is average with respect to all the demographic variables.

2. The 5th grader’s body mass index is moderate and their physical activity is also moderate with respect to all the background variables.

3. The mental health of majority of the primary school children is moderate with respect to all the demographic variables.

Part II Differential Analysis:

With respect to Gender

- Male and female students significantly differ in their creativity and its dimensions with respect to gender, the female are better in fluency and originality and male are better in flexibility than their counter parts.
Children do not significantly differ in their body mass with respect to gender. But they significantly differ in their physical activity, male are better than the female.

Male students have greater conduct problem and hyper active than the female. But female have better pro-social activity than the male students. Male and female do not significantly differ in their mental health in total.

With respect to Age

There is no significant difference among 5th graders in their creativity with respect to age.

Body mass is greater for children of 11 years and above. But the children of 9 and below age exhibit better in physical activities than their counter parts.

Among the 5th graders the children of the age 10 years find very little conduct problems than their counter parts. Children of 9 years are hyper active than their counter parts. The children of 11 years exhibit more pro-social activities than the others. In total the children 9 years and 11 years have better mental health than the children of 10 years.

With respect to Birth Order

Among the 5th graders the first born children are better in originality than their counter parts. In flexibility and fluency there is no significant difference among the 5th graders with respect their birth order.

The first born children’s body mass is greater than the 2nd, 3rd and 4th born children. The 1st and the 3rd born significantly differ. There is no significant difference found among the children in physical activities with respect to birth order.

Among the 5th graders the 3rd born seems to have greater conduct problem and they are hyper active than the others. In total the 3nd born children have better mental health than their counter parts.
With respect to Community

- The children belong to MBC, BC and SC, ST are better in flexibility than the children of OBC. Further the MBC, BC significantly differ in creativity in total when compare to OBC.
- There is no significant difference among the 5th graders in their body mass and physical activities with respect to the community they belong to.
- Among the 5th graders the children belong to OBC and SC/ST find greater emotional symptoms than the children of MBC/BC. In total children of OBC and SC/ST have better mental health than the children of MBC and BC.

With respect to type of school

- The 5th graders in aided schools exhibit better creativity than the children of other schools in all the dimensions.
- The private school children significantly differ in their body mass than the children of aided and government schools. No significant difference is found among 5th graders in their physical activities with respect to type of school.
- Among the 5th graders the children of Government and aided schools find greater emotional symptoms than their counterparts. Government school children are more hyper active, children of aided schools exhibit more prosocial activities. The children of Government and Aided Schools have better mental health than the children of private managed schools.

With respect to location of School

- With respect to location of school the students of urban schools are better in fluency and originality than students of rural locality.
- The body mass of students of urban schools is greater than the students of rural schools. But the 5th graders do not significantly differ in their physical activities with respect to location of school.
- The children of rural schools show greater emotional symptoms, conduct problem and hyper activity than children of urban schools. On the other hand the children of urban schools show more prosocial activity than their counter
parts. In total the mental health of children of rural schools are better than the children of urban schools.

**With respect to Medium of Instruction**

- The students do not significantly differ in flexibility with respect to medium of instruction; Tamil medium students excel in creativity than English medium students.

- The body mass is greater for children studying through English medium than the children studying through Tamil medium. But students do not significantly differ in their physical activities with respect to medium of instruction.

- Comparing the children of Tamil and English medium classes, the children of Tamil medium classes show more emotional symptoms. In all other dimensions they do not significantly differ in their mental health with respect to medium of instruction.

**With respect to Board of Study**

- The children who study through state board syllabus are better in fluency, originality and creativity in total than children who learn through matriculation and CBSE board.

- The children studying in Matriculation and CBSC board have greater body mass than the children who are studying through state board syllabus. There is significant difference among the children in their physical activities with respect to the board of study. The children of matriculation and State board are better in physical activities than the children in CBSE.

- The children of state and CBSE board schools found more emotional symptoms. In total the children of state board schools have better mental health than their counter parts.

**With respect to Academic Achievement:**

- Among the 5th graders the above average students are better in Fluency, Originality and Creativity in Total. On the other hand the average students are better in Flexibility than their counter parts.
There is no significant difference among 5th graders in their Body Mass and Physical Activities with respect to Academic Achievement.

There is no significant difference among 5th graders in emotional symptom with respect to Academic Achievement. The below average and average children significantly differ in conduct problem and hyper activity. The above average students significantly differ from their counter parts in Pro-Social Activity. The 5th grades significantly differ in Mental Health in total with respect to Academic Achievement.

**Part III Association Analysis:**

- There is no significant association between parent’s education and creativity of 5th grade children. But there is significant association between parent’s occupation and flexibility and originality of 5th graders.
- There is no significant association between parent’s education and occupation and body mass index and physical activity of 5th graders.
- There is a significant association between parent’s education and emotional symptom and hyper activity of 5th graders. But there is no significant association between parent’s occupation and mental health of 5th graders.

**Part IV Correlation Analysis:**

- There is significant correlation between mental health and creativity of 5th graders with respect to female(-), 10 years of age(-), 3rd born(-), MBC/BC(-), Aided school(-), Private management school(+), urban schools(-), state(-), matriculation(+) and CBSE(-) boards and Tamil medium(-), Below Average(+), and Average(-).
- There is significant correlation between body mass and creativity of 5th graders with respect to 9 years (+), 10 years(-), MBC/BC(-), State board(+) CBSC(-) and Tamil medium(+).
- There is significant correlation between Physical Activity and creativity of 5th graders with respect to male(-), female(-), 9 years (-), 11 years(-),SC/ST(-), Private management school(-), Matriculation school(-), CBSE(-) and English medium(-) and Below Average(-).
There is no significant correlation between body mass and creativity of 5th graders for total sample.

There is no significant correlation between physical activity and creativity of 5th graders for total sample.

There is significant correlation between mental health and its dimensions emotional symptoms (-), Conduct Problem(-), Hyper Activity(-), Pro-Social Activity(+) and creativity of 5th graders for total sample.

Part V Regression Analysis;

Physical Activities, mental health and body mass, together as a combined model account for significant amount of variability in creativity which was statistically significant. It is also observed that out of three variables, mental health and physical fitness were statistically significant in predicting creativity and negatively associated with creativity.

5.04 INTERPRETATION AND DISCUSSION

In terms of Creativity

From the results, the differences that exist in creativity and its dimensions with respect to the background variables ascertain that the creativity is a combination of personal traits as well as environmental factors. According to the multivariate approach, creativity depends on cognitive, conative, and environmental factors that combine interactively. Each of the factors underlying creativity develops during childhood (Lubart, 2005). This involves several intellectual abilities, information processing skills, the acquisition of knowledge, motivational variables and the physical and social environment of the child, comprised of family, school, and societal spheres (Lubart, 2005).

The results of the present study which showed that creativity varies with respect to gender can be comparable to the study by Charyton et al. (as cited in Tasaduq and Azim, 2012) who found that males and females tended to have similar levels of general creativity, yet the most frequently listed eminent persons tended to be male. The findings of the current study can also be verified by the study conducted by Singh (2013) which showed that gender has strong direct effect on creativity.
Because of the biological differences in male and female, they have entirely different world view which models their creative thinking. Also the significant differences with respect to community in creativity also indicate the role of the social and cultural environment in shaping the creative talents in children.

The findings of the present study indicated that there is difference in creativity as a whole as well as its dimensions with respect to the type of school that can be compared to the study conducted by Tasaduq and Azim (2012) which found that children from private schools scored more than government school children in the picture construction activity. This shows that the school factors influences creative abilities in children and lack of sufficient opportunities and encouragement to foster the creative abilities play an influential role in hindering creativity in children.

The inference of the present study where creativity varies with respect academic achievement can be compared to the study conducted by Aujla (2013), which found that the over achievers had higher creativity scores than the under achievers and the differ in the creativity scores with respect to the academic achievement. It can also be substantiated from the findings of the study conducted by K.Maheswari and S.Francisca (2013) which found that there is positive relationship between creativity and academic achievement. These findings clearly indicate that creativity though it is general ability; it is an interactive combination of personality traits, environmental and social factors.

**In terms of Physical Fitness**

It was found that though the girls and boys do not differ in body mass index, but they do differ in physical activity. The boys are found to be more physically more active than girls due to the cultural set up where boys get more opportunities and time to take part in physical activities than girls. Studies also show that boys are more physically active than girls (Vilhjalmssson & Kristjansdottir, 2003). Also Vilhjalmssson & Kristjansdottir, 2001 found that the physical activity decreases after the early adolescence in a study conducted among 11 -16 year olds. This verifies with the findings of the present study which found that 11 year olds have high physical activity.
The findings of the current study show that there is no significant difference in physical fitness with respect to academic achievement, but it is in contrast to the finding of the study which found that physical activity enhanced academic performance (Dwyer et al., 2001). In another study to investigate the relationship between Body mass index, fitness and academic performance, it was found that BMI and fitness were correlated with academic performance (Wingfield et al., 2011).

**In terms of mental health**

The findings show that there exist significant differences in the dimensions of mental health though not in total mental health with respect to gender show that girls and boys may differ in biological and environmental factors that implicated in the development of conduct problems and depression in boys and girls. Other studies which investigated the gender differences with regard to mental health found that there is no significant differences (Sood and Anand, 2011) and boys and girls do not differ in their mental health (Srividhya, 2007).

It is also found that mental health varies with respect to community, where the students of BC/MBC category possess poor mental health than the students of other two categories. Contrastingly, in a study, it was found that the students of SC/ST have poor mental health than the students of other communities (Srividhya, 2007). It was also found that the type of school has its impact on the mental health of children, because the students of government schools enjoy better mental health than their counterparts in aided and management schools. There are also other studies which found that the students of government aided schools enjoy better mental health than their counterparts (Somasundaram et al., 2011). It was found that locality of the school has an impact on the mental health of students, where the students of rural areas enjoy better mental health than the students of urban areas. In some other studies it was found that mental health did not vary with respect to locality of the school (Sood and Anand, 2011). The findings also reveal that mental health varies with respect to level of academic achievement and the students of below average were found to have better mental health than the average and high achievers. There are other studies which show that there is relationship between academic achievement and mental health (Thamodharan, 2009) and also some studies found that there is no relationship between mental health and academic achievement.
The above findings from the present study indicate that the establishment and maintenance of mental health vary in relation to the personal and social environment.

**Relationship between creativity, physical fitness and mental health**

The findings of the present study reveal that lesser the emotional symptoms, conduct problem, hyperactivity and higher the pro social behaviour the higher the creative abilities. This can be compared to a study which found that creative subjects were less anxious and less depressed; they experienced less stress and had a higher self-esteem (Khosravani S., & Gilani, B., 2007) However, in a review which examined the existing scientific evidence for associating creativity and mental illness, the evidence was unconvincing based on a critical review of 29 empirical studies: most did not support an association between creativity and mental illness, and most had methodological flaws (Waddell, 1998). The characteristics of creativity attacking the everyday problems in a divergent way are also consistently emphasized in models of “normal”; personality growth, so that the possibility of promoting mental health arises by fostering creativity in day to day life (Cropley, 1990). The findings of the present study give an indication of the necessity of fostering mental health in children to hone creative abilities in them as an essential outcome of education.

The results reveal that there is no relationship between the physical fitness and creativity of the 5th grade children. This may be understood that physical fitness is not a prerequisite for creativity. Even though the children are not physically fit, they can be creative and creative abilities can be nurtured and encouraged in them. These findings are contrary to a study comparing the effects of running on creativity, running was judged effective for enhancing the cardio respiratory health and creativity of school children (Tuckman and Hinkle, 1986). In another study to assess the effect of an aerobic running program on the psychological and physical fitness and creative abilities, the multivariate analysis of variance (MANOVA) revealed a significant increase for the treatment group in creativity, as measured by the Figural and Verbal booklets of the Torrance Tests of Creative Thinking, and physical fitness. But differences on psychological measures between the 2 groups were not significant. Further studies to investigate the benefits of physical activity on creativity should be instigated.
Also the regression analysis predicting the influences of mental health and physical fitness on creativity show that mental health and physical activity play an influential role on creativity. Also the results show that they are negatively associated with creativity. Reviews on physical activity and cognitive functioning have provided evidence that routine physical activity can be associated with improved cognitive performance and academic achievement, even though these associations are usually small and inconsistent. (Biddle, 2010). Some of the studies suggest that physical or mental illness may decrease creativity (Eisenman, 1990).

5.05 RECOMMENDATIONS

Since the findings show that the good mental health makes the children more creative it is important to develop mental healthy individuals for the better society. The programmes that focus on developing mental health among primary school children should be initiated in schools. The potential benefits of collaboration between school counselors and teachers in establishing the mental health of children should be looked for.

Creativity is considered an important outcome of education to take part effectively in this competitive world to look for solutions in this new era so nurturing creativity in schools is most required task in schools especially among primary children. This can be achieved by allowing certain practices in schools like open ended questions, allowing ambiguity in responses, freedom in choosing their activities etc. Schools can provide an environment that specifically values creative thinking. Creativity should be valued at least as much as knowledge acquisition. Creativity can be assessed and recognized through project work as part of school performance.

Teachers need to be educated to understand creative development and ways in which creativity can be fostered or inhibited by school practices. Teachers need to be sensitized to creativity issues that are rarely part of their teacher training or priorities. The “creativity training exercises” can be infused in the each of the subject and this embedded approach will help in nurturing in children.
5.06 SUGGESTIONS FOR FURTHER RESEARCH

➤ The study may be replicated in various other populations like secondary and higher secondary school students in order to get conformation of the present findings.

➤ The variables like physical fitness and mental health had been correlated with creativity in this present research. Other psycho-social variables may be correlated in future.

➤ The present study was carried out in southern districts of Tamilnadu, this study can be extended to other districts also

➤ The mental health other sub dimensions can be tried to correlate with creativity.

➤ A study on the developmental stages of creativity among primary children may be undertaken

➤ The study on school and home environment for the development of creativity may be researcher’s interest.

➤ The genetically explanation of creativity will be an interesting field of research.

➤ Creativity in relation to Intelligence can be an area of research.

5.07 CONCLUSION

The study brings to the limelight that creativity of the primary school children may be enhanced by developing good mental health. The physical fitness though it is the least predicting variable to creativity, schools should not neglect the physical fitness of young children since physical health is a basic foundation for all other developments of a child. As creativity has recently been granted official recognition as one of the overarching aim of curriculum, educational institutions must provide a conducive environment to enable the pupils to think creatively and critically, to solve problems and to make a difference for the better. It should give them opportunity to become creative, innovative, enterprising and capable of leadership to equip them for their future lives as workers and citizens.