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## CHAPTER I

# INTRODUCTION

Education aims at all-round development of human beings. It makes us aware of our inner qualities and to use these qualities. Education is a threefold relationship which has parents, teachers and students as three poles quite related to each other. This relationship much discussed in educational psychology.

Intelligence and creativity are the two factors which affect the development of students in academic, social, cognitive and psychological aspects.

Intelligence is the most important aspect of mental development. It is quite related to the context in which the child takes education. The growth of intelligence is the growth of the child total personality in all the aspects like language development, emotional development, social development and physical development.

Creativity is the capacity to think in novel manner or do or act in a different way. For example, the students who are given a certain topic for essay, write very differently or way in an uncommon manner. All the artists, scientist, architects, teachers are creative. Every person has some creative aspects. These creative aspects may lead the person to imagine, to form new

ideas, to generate novel thoughts and ultimately creation of something which is beneficial to his growth as well as the growth of society.

Since creativity is so complex and so often misunderstood its important elements are brought together and presented in a concise form in. A careful study of these elements will reveal two facts. First, creativity as viewed by the psychologist is very different from the popular concept of it and second creativity is a far more complex activity than more people recognize.

Generally it is assumed that the intelligent students are creative. But the fact should be studied. It may be possible that the students. When intellectual level is low are creative and can become successful in their life. The bright students or the students who graph academic achievement is increasing may not be creative.

Whether high intelligence and high creativity will go hand to hand depends largely on factors extraneous to both creativity and intelligence. Factors in the environment or within the person often interfere with the development of creativity strict authoritarian child training methods in the home or school during the early, formative years may for example stifle creativity but not affect a high native intelligence, under such conditions the correlation between intelligence and creativity will be low.

Earlier education was teacher centred. The students have to obey their teacher. Education was a process of habit formation. But today the

educational scenario is changing speedily. Student is centre of education. The role of teacher is mere the observer and facilitator. It is needed for any teacher to find out creative talents in their students.

There is however a positive correlation between intelligence and creativity. This may at first found contradictory but remember that creativity which lead to the production of something new is dependent upon the ability to acquire accepted knowledge. That knowledge is then organized and manipulated into new and original forms. Creativity cannot function in a vacuum. It makes use of knowledge previously acquired and this depends upon the intellectual abilities of the person.

Academic achievement related to the performance of students in the various examinations takes by schools, colleges, board and universities. Generally, in India still academic achievement is noted only by the students performance in examination.

B.A.B.Ed., students are both students and teachers. Whole they are learning, they are teaching too. As a future teacher it is quite note worthy to find out how creativity and intelligence affect the academic achievement of B.A.B.Ed. students. Here academic achievement deals with the marks the students have secured in the examination as well as their status in practicum component skills.

## **CREATIVITY:**

Creativity begins with talent, but talent is not enough. Children may show creative potential, but in adults, what counts is creative performance. What and how much a creative mind produce (Lubart, 1995). Creative performance is the product of a web of biological personal, social and cultural ----- . It emerges from the dynamic interaction among the creator, the rules and techniques of the domain and the colleagues who work in that domain (Gardner, 1986, 1988, Symonton, 2000b).

Exceptional talents are less born than made, they require systematic training and practice (Symonton 2000b). Extraordinary creative achievement, according to one analysis (Keegan, 1996), results from deep, highly organized knowledge of a subject.

A person must first be thoroughly grounded in a field before she or he can see its limitations, envision radical departures and develop a new and unique point of view.

Highly creative people are self starters (Torrance, 1988) and risk takers; they tend to be independent, non conformist, unconventional and flexible and they are open to new ideas and experiences (Symonton, 2000 b). Their thinking processes are often unconscious, leading to sudden moments of illumination (Torrance, 1988).

Creativity develops over a lifetime in a social context and not necessarily in nurturing environments. Instead, it seems to emerge from

diverse experiences that weaken conventional constraints and from challenging experiences that strengthen the ability to persevere and overcome obstacles. The political and cultural environment can affect the flowering or inhibiting of creativity as occurred, for example in the former sovient union (Simonton, 2000b)

### **What is Creativity?**

After exhaustive research, Morgan (1953) listed the universal factor for creativity to be novelty (Cropley, 1999), Novelty requires originality and newness. There must be something fresh to the idea.

Sternberg and Lubert (1995) proposed the novelty must be coupled with appropriateness for something to be considered creative. Novelty can be the coalescence of any two or more different things or thoughts. For instance, Damien Hirst is a controversial artist who has sliced animals into fragments, but many people do not consider this creative even though it is novel and original. Many people do not recognize the factor of appropriateness in his work and consider it to be feckless.

Although creativity can be seen in the products, it can also be considered in terms of the process. Weisberg (1986) proposes that creativity can be defined by the novel use of tools to solve problems or novel problem bodies of people. Professor Von Hagens is a medical professor at the University of Heideberg who perfected plastic injection into bodily tissue.

This is a novel use of tools to solve the problem of decay and distortion from old methods of preserving human tissue. The end product is creative because of the creative use of tools.

Ward, Finke, and Smith (1995) defined creativity in the products made, the differences in people, the pressures that motivate, and the processes behind creativity. The products made are new and fresh which is the clearest example of creativity. However, there are defining subtleties in people; for example, some people are considered to be more creative than others, and in addition to inherent differences in people, there are different motivations for creativity (e.g. some people are driven to create). Finally, the process for creativity can be different. Some people seclude themselves while others seek guidance and dialogue.

While there is debate over the guidelines for judging creativity, two things remain; novelty and appropriateness. These two things may be viewed in the product, the tools, the people, the motivation, and/or the processes, but these are the two necessary ingredients.

### **NATURE OF CREATIVITY:**

In order to be effective within any given area of inquiry, we must define our terms, recognise basic assumptions and develop explicit guidelines for sharing and communicating our knowledge. This calls for a sound philosophical edifice of creativity. Further, if creativity has to become

a distinctive discipline of inquiry, we must be concerned with the philosophical categories of ontology (the nature of its reality) epistemology (the nature of its value) Isaken, S.G. and Murdock, M.C. (1988). Further, we have to consider factors like field, boundary methodology and approach as ingredients of discipline.

Infact, one of the most basic suppositions underlying productive probing in to the complex and multi faceted concept of creativity is that it is seen as a natural human phenomenon. It is often urged as to how we can have a widely utilised definition of this intangible concept of creativity. How can one study something which is not clearly defined? Regardless of the fact that there are a few definitions and theories of creativity, one artistic expression of this concept of mind is the infinity mirror relating and reflecting unrelated ideas. After reviewing 22 definitions of creativity Welsch, P.K. (1980), found significant levels of agreement of the key attributes of these definitions. She proposed the following definition from her review of the literature:

Creativity is the process of generating unique products by transformation of existing products. These products, tangible and intangible, must be unique only to the creator, and must meet the criteria of purpose and value established by the creator.

Contrastingly, while reviewing a number of viewpoints of definitions of creativity, Passi, B.K. (1972) had defined creativity as:



A multi dimensional (verbal and nonverbal) attribute differentially distributed among people and includes chiefly the factors of seeing problems, fluency, flexibility, originality, inquisitiveness and persistently.

There are many other definitional openings to the creativity, most of which are derived from some particular theoretical frame of reference. Researcher have also studied the managerial and organizational applications of creativity and innovation, making and communicating meaningful new connections in order to think of many possibilities, think and experience in various ways and use different points of view, think of new and unusual possibilities, and guide in generating a selecting alternatives, to name a few.

After completing a review of the relevant literature, a lack of substantive research in the area of the theoretical/philosophical basis of creativity research still remains practically virgin. Raina, V.K. (1991) reported only one study in the theoretical/philosophical field, which by any yardstick is negligible. Sharma, P.K. (1991) searched for a viable concept of the nature of creativity in education. Nevertheless, research on the theoretical/philosophical perspective does not cover a well identified set of areas of study. Penetrating attention should be given to questions related to the subject matter and the concept of structure of creativity, philosophical analysis of creativity research methods and the like.

**Meaning of creativity:**

Creativity is one of the most loosely used and hence, most ambiguous term in psychological research today. It is even more ambiguous and more loosely used by laymen.

To appreciate the meaning of the term creativity as used by psychologists, an examination of common forms of popular usage of the term will help to show what is incorrect or only partially correct in these different forms and why psychologists have defined the term as it is now defined.

**Psychological meaning of creativity:**

Many definitions of creativity that might be acceptable to the psychologist are so brief that they do not cover all the important elements required in a workable definition. The one given by Drevdahl (29) has therefore been selected as a good, workable definition creativity is the capacity of person to produce compositions products or ideas of any sort which are essentially new or novel and previously unknown to the producer. It can be imaginative activity or thought synthesis, where the product is not a mere summation. It may involve the forming of new patterns and combination of information derived from past experiences and the transplanting of old relationships to new situations and may involve the generation of new correlates it must be purposeful or goal directed not idle

fantasy although it need not have immediate practical application or be a perfect and complete product. It may take the form of an artistic, literary or scientific production or may be of a procedural or methodological nature.

Since creativity is so complex and so often misunderstood, its important elements are brought together and presented in a concise form in (Box-12-1). A careful study of these elements will reveal two facts. First, creativity as viewed by the psychologist is very different from the popular concept of it and second creativity is a far more complex activity than most people recognize.

### **Measurement of Creativity:**

During the last few decades efforts have been made to measure creativity through testing based psychometric approach narrows down the concept to the extent of the nature and scope of test items. Measurement of creativity through the test approach is an uphill task. However, basic principles for test construction could be established. Based on the lines of Guilford and Torrance, many investigators developed their own tests. Attempts have been made to measure creativity by instrument developed by Mehdi B. (1970), Passi, B.K. (1972), Gillitwala, P.J. (1978), Singh, C. (1978), Jhag, D.S. (1979), Mishra A. (1981), Tripathi, S. (1987) and Singh, B. (1988a).

Tests were developed to measure general creativity by Mehdi, B. (1970), Passi, B.K. (1972), Gillitwala, P.J. (1978). Jhag, D.S. (1979) and Singh B. (1988a). Some of these tests are verbal whereas the others are nonverbal. Literary creativity the others are nonverbal. Literary creativity tests were developed by Kundley, M.B. (1977) and Rao, V.R. (1982). Besides this tests were developed for measuring scientific creativity by Singh, C. (1978) mathematical creativity by parashis, H.N. (1985), physical science creativity by Gupta, S.M. (1980) and language creativity by Malhotra, S.P. and Sucheta, K. (1989). These tests have high reliability, ranging from 0.89 to 0.97 split-half and test retest methods have been used to establish reliability. The sample size for establishing reliability. Ranged from 150 to 250 students. Most of these samples are drawn from the secondary and senior secondary stage. No test has been developed for preprimary children. The face validity, convergent validity, discriminant validity and concurrent validity are not appropriate. Establishing norms is not popular with test constructors except Passi, B.K. (1972) no other study was reported the establishment of detailed norms for creativity tests.

The creativity test response are popularly scored for fluency, flexibility originality and elaboration. Manuals are silent, especially, on the scoring of elaboration. Apart from this a few other dimensions, like persistency and inquisitiveness, have been included in the definition and measurement of creativity by Passi, B.K. (1972). Other than these

dimensions Torrance, E.P. (1974) developed streamlined scoring. He incorporated five norm-referenced measures and thirteen criterion-referenced measures include: fluency, originality, abstractness of titles, elaboration and resistance to premature closure. The criterion-referenced measures in his conceptual framework of creativity. The five norm referenced measured include: emotional expressiveness story telling articulateness movement or action expressiveness of titles, synthesis of incomplete figures, synthesis of lines, synthesis of circles, unusual visualization, extending or breaking boundaries, humor, richness of imagery, colourfulness of imagery and fantasy.

Most of these tests have been constructed through the medium of the English and/or Hindi languages. Very few tests have been developed in regional languages Kundley, M.B. (1977), Rao V.R. (1982), and Tripathi, S. (1987). It is expected that the verbal tests of creativity should have been developed in many more regional languages.

A few investigators have merely translated the tests of Torrance, Guilford, Passi etc. in their own languages.

As mentioned above measuring creativity is an uphill task, likewise, scoring of responses on creativity tests is also a difficult task. For scoring, trained hands are very essential. This problem can be solved by providing a detailed training procedure in the test manuals.

Many a time our investigators have used artificial and unrealistic testing situations. The stimulus items of the tests include fancy rather than real life situations. However, investigators like Kumari, V.M.C. (1993) and a few others have developed creativity problem solving tests based on age specific realistic situations. The inclusion of life like realistic situations. The inclusion of life-like realistic situations is duly emphasized in the writings of many thinkers, including Edrard de Bono. Apart from the usual testing techniques some other approaches, like biographical assessments, interviews, group discussion, real field tests, role playing and long term observation, could be used. The bio-medical approaches to measure creativity could be potential means in future.

## **INTELLIGENCE**

General intelligence as measured by standard IQ tests, has little relationship to creative performance (Simonton, 2000b). However, the three aspects of intelligence identified by Sternberg.

The insightful component helps to define a problem or to see it in a new light creative people show special insight in three ways:

- 1) They pick out information relevant to the problem – often information that no one else thought to consider.
- 2) They put two and two together, seeing relationship between apparently unrelated pieces of information and

- 3) They see analogies between a new problem and one they have already encountered. Again these abilities become more efficient with experience and knowledge (Stenberg and Horvath, 1998).

Creativity is not the finding of a thing, but the making something out of it after it is found

-- James Russell Lowell

Often times creativity is thought to be artistic, lofty, intelligent, out-of-the-ordinary, and beyond understanding. However, creativity comes in much simpler forms such as formulating a solution to an everyday problem; if someone runs out of fuel on the highway, the person must think of a way to get to his/her destination, and this requires creativity even if it is in its simplest form. Creativity can be observed in the unusual as well. For instance, Craig Wallace, now a college freshman, developed a nuclear fusion reactor out of junkyard parts and cheap finds. Creativity is not just the writings of Descartes or the oil paintings of Klimt, so what is it?

### **The meaning of Intelligence:**

The meaning of the term intelligence since long has been a topic of debate and controversy among psychologists and till today no consensus has been arrived at as regards the meaning of the term. We all very well know that intelligence is not some thing which can be shown in concrete form. It is

an attribute like height and weight. It cannot be seen or touched but it can be inferred from the behaviour of an organism. Let us make it more clear with the help of an example suppose Manish Kumar a boy of 14 years of age is very quick in solving problems in comparison to his class-mates and always stand first in his class. Here we can infer that Manish Kumar is an intelligence boy because his performance gives an evidence of his being intelligent. We thus infer intelligence from the behaviour patterns (performance) of human beings shown in different situations.

Intelligence is a hypothetical construct invented to help explain and predict human behaviour. And since intelligence is a hypothetical construct, there can be no single correct definition of the term, although one definition may be more useful for specific purposes than another. Psychologists in the last eighty years have defined intelligence in different terminology but most of them agree that intelligence may be defined as the ability to benefit from experience to learn new ideas or new sets of behaviours easily some of the important definition of intelligence are given below:

**Definitions of Intelligence:**

Freeman divided all definitions of intelligence into three broad categories emphasizing:

a) learning ability b) adjustment ability and c) ability to carry on abstract thinking.



**a) Learning ability : Buckingham**

Intelligence is the learning ability Van Wagenen: Intelligence is the capacity to learn and to adjust relatively new and changing conditions.

**b) Adjustment ability : William stern**

Intelligence is the capacity to adapt oneself to new problems and conditions of life.

**c) Abstract Thinking Terman**

Held that individual intelligence was based on ability to carry on abstract thinking.

Thus, We may conclude from the above definitions that intelligence is a multifaceted concept a complex of diverse and numerous components. The definition of intelligence differ depending on the particular area of interest of their respective proponents.

**Intelligence and Creativity:**

The relationship between creativity and intelligence has always remained a point of great interest among our investigators. Many studies have been conducted wherein intelligence was measured by using Raven's standard progressive matrices, Mohasin's Group General Mental Ability Test. Joshi's non verbal Test of intelligence, Prayag Mehta's Test of verbal Intelligence, Phatak's Draw-a-man Scale, Madhookar Patel's Intelligence Test, Saxena's Test of genereal intelligence and the Desai-Bhatt Group Test of Intelligence.

The majority of the studies reviewed under this heading have reported a positive and significant relationship between intelligence and creativity Phatak, P. (1962), Raina, M.K. (1968), Trivedi, R.C. (1969), Sharma, K.N. (1971), Passi, B.K. (1972), Sharma, K.P. (1974), Bedi, R.K. (1974), Goyal, R.P. (1974), Joshi, R.J. (1974), Dhaliwal, A.S. and Saini B.S. (1976), Dutt, N.K. et.al. (1977), Gakhar, S. and Kaura, N. (1977), Singh, R.J. (1978), Patel, A.S. and Joshi, R.J. (1978), Budrinath, S. and Satyanarayan, S.B. (1979), Gulati, S. (1979), Gupta, A. (1979), Jarial, G.S. (1979), Gakhar, S. et.al. (1980), Gupta, A.K. (1980), Bhaduria, SP.C. (1980), Menon, P. (1980), Qureshi A.N. (1980), Chadha, N.K. and Sen, A.K. (1981), Singh, O.P. (1982), Sharma, K. (1982), Chaudhary, G.C. (1983), Dey, B. (1984), Ramakrishna, A. (1986), Desai, N.N. (1987), Trimurthy, S.P. (1987), Gupta, K.K. (1988), Patel, R.P. (1988), Sahoo, P.N. (1990), and Pal. Y. (1991), Dutt. N.K. et.al. (1977) reported that the highly creative need not be necessarily highly intelligent need not be necessarily highly intelligent. The correlation between creativity and intelligence in the above mentioned studies, ranged from 0.10 to 0.44 with a median around 0.30. Thus, the median common variance shared by these two variables is nearly 9%. further while partialling out the effect of academic achievement, no significant relationship was found between intelligence and creativity Khire, U.S. (1971), Lalithamma, M.S. (1973), Rawat, M.S. and Agarwal (1977) reported that the two variables under discussion were not significantly

related, Badrinath, S. and Satyanarayan, S.B. (1979) found that non verbal creativity was not related with intelligence, whereas, verbal creativity was positively and significantly related to it. Mehdi B. (1977) and Muddu, V. (1980) reported a negative correlation between creativity and intelligence for the students coming from the urban locality while it was positive in the case of students coming from the rural locality. Further, Raina, M.K. (1984) found that there existed no relationship between creativity and intelligence.

The researcher reported so far show contradictory findings some are reporting the positive relationship, other negative and still others showing no relationship. There can be many possible explanations for such discrepancies. One is that there is a phenomenon of 'threshold' IQ beyond which creativity and intelligence become independent of each other. A second explanation lies in the argument that a difference in the school atmosphere and the method of teaching accounts for discrepant results. The researcher collecting their data from institutions having a permissive and flexible environment will find results dissimilar to those found by researchers handling data from closed climate institutions. Thirdly, it is seen that when creativity tests accentuate ideational fluency. The relationship between intelligence and creativity decreases on the other hand. When creativity test accentuate verbal facility and vocabulary use, the correlation between intelligence and creativity increases.

The forth explanation lies in the measurement of creativity. The creativity tests developed so far have generally measured factors of fluency, flexibility, originality and elaboration supposed to run across various types of tasks and areas, viz. science, language, music or arts. These factors when correlated with intelligence produced a variety of results. Both creativity and intelligence scores as measured by such tests are affected by personality factors, socio-cultural factors and many other moderating variables. One should partial out these influences while reporting the correlations. The researchers need to conduct in-depth case study of creative people so as to understand the relationship of creativity and intelligence.

Long term predictive studies related with real-life creative performance are needed well designed longitudinal studies may be useful. There are instances where some children were labeled as disadvantaged on the basis of intelligence tests. But in their later life the inherent creativity in these children sprouted and bloomed. Studies of such cases will help to expose the implicit mischief of the usual intelligence tests.

### **Intelligence: How Does It Relate to Creativity?**

To understand how intelligence relates to creativity, we must first delve into the definitions of intelligence. Like creativity, White (2000) states that cognitive sciences has not yet come to a consensus about what “intelligence” actually is. A word used in the 19<sup>th</sup> century to denote some

unspecified mental property that promotes evolution. The late 1800s gave rise to the development of testing for high levels of intelligence.

At first intelligence testing was not geared towards testing the general populace, rather finding diamonds of genius in the rough, and weeding out the feeble-minded. Now IQ testing is performed on anyone who wishes to take the test. IQ testing attempts to get away from all culture bias so that anyone in the world should be able to take the test and generate a score close to a score of a person of equal intelligence somewhere else.

White (2000) describes in his article the notion of genius. While the term “intelligent” is almost always a positive term, the term “genius” can either have a positive or negative connotation depending on the context. Although White (2000) says in his article that it is unfortunate that geniuses often get stuck with the stigma of being pathological, he admits that one can not totally discount the correlation between genius and psychopathology.

“Creative activity does involve very regular, cognitive processes” (Bink and Marsh, 2001, p. 60). The article by Bink and Marsh (2001) explains in detail the cognitive processes behind creative thinking. It uses the evidence that people use information the same way whether or not they are creating a novel idea or merely accomplishing a non-creative task. They discuss the Geneplore model of creativity to devise how cognitive thinking contributes to the production of a novel idea. “According to the model, creative activity is the process of generating, refining, and then regenerating

mental representations in service of task demands and goals” (Bink and Marsh, 2001, p. 61). This model shows where cognitive thinking fits into the role of the creative process.

While intelligence tests contain a range of problems, when one goes beyond the range of conventionality in the tests, one starts to tap in to individual differences that are measured very little, or not measured at all by conventional tests (Sternberg, 1999). Sternberg’s (1999) theory on successful intelligence suggests that creative intelligence can be better measured by problems that assess a person’s ability to cope with relative novelty.

One example of such a test is people were presented with the following scenario: (there are) four kinds of people on the planet Kyron: blens, who are born young and die young; kwefs, who are born old and die old; balts, who are born young and die old; and prosses, who are born old and die young (Sternberg, 1999, p. 304). The subjects are then instructed to predict future states from past states. A test such as this would measure more the creative side of intelligence than the cognitive aspect intelligence.

Sternberg (1999) found that the definition of creative intelligence goes beyond of the realm of cognitive intelligence and that individual and developmental differences have a large effect upon the results of creativity, much more than effect they have upon the results of cognitive thinking.

Stenberg (2001) goes on in another article to further explain creativity with regards to intelligence and wisdom. He says that creativity refers to the potential to create a novel product that is both task appropriate and high in quality. He proposes that creativity has a dialectical relationship with intelligence, the while intelligence is often for the advancement of social agendas, creativity hampers or creates entirely new ones.

Sternberg (2001) suggest that creativity, like intelligence, is a trait that is naturally hard to define, but can be linked by the common idea that things that are creative are both novel and high in quality, while things that are intelligent are not novel but merely high in quality. He uses this basis to suggest that creativity in some ways seems to go beyond normal intelligence. It can be seen from the above articles that while intelligence plays an important part in the role of creativity, it is not the be all and the end all of what makes a person creative. Creativity has been shown to have most links with genius, yet creativity still seems to exist in ways that go above cognitive thinking skills.

### **Researches on Achievement**

The effectiveness of any educational system is gauged to the extent the pupils involved in the system achieve, whether it be in cognitive, conative or psychomotor domain. In general terms, achievement refers to the end of an educational programme. It is to this concept that the term

achievement is referred to here. To maximize the achievement within a given set-up is, therefore, the goal of every educationalist – a teacher or an educational administrator. Research has come to our aid by looking into what variables – personal, home, school, teacher, etc. promote achievement and what are deterrents to it. It has been thus indicated that a good number of variables, such as personality characteristics of the learners, the socio-economic status from which he hails, the organizational climate of the school, curriculum planning, etc. to mention a few, influence achievement in different degrees. These variables are generally referred to as correlates of achievement. Heads of institutions, curriculum planners, teachers and others who are involved in the task of helping students to achieve better would like to have a knowledge of the extent of influence these correlates exert on achievement. Further, a synoptic view of the researches done would be of almost importance to the educational researcher to enable him to explore greater depths in this rather important area of achievement.

#### **ABOUT THE STUDY:**

As no study of this nature has been undertaken in this geographical area. To study the relationship between creativity, intelligence and academic achievement of B.A.B.Ed course is very significant as these students are future teachers. They will use their creative talents and intelligence for



teaching profession. So it is needed to find out the three fold relationship among intelligence, creativity and academic achievement.

### **STATEMENT OF THE PROBLEM:**

“RELATIONSHIP AMONG CREATIVITY, INTELLIGENCE AND ACADEMIC ACHIEVEMENT OF THE STUDENTS OF B.A., B.ED., (INTEGRATED) DEGREE COURSE - A STUDY ”

### **DEFINATIONS OF TERMS USED:**

#### **CREATIVITY:**

Some theorists see creativity as the ability for the divergent thinking or open ended thought while others equate creativity with high intelligence. Creativity may also be characterized by a distinctive personality type (International Dictionary of Education by G. Terry page and J.B. Thomas with A.R. Marshawil)

### **OPERATIONAL DEFINITION:**

Creativity is what the creativity test by Bager Mehdi measures.

#### **INTELLIGENCE:**

Intelligence is a widely disputed term it may be used to refer to: the capacity to think: general mental ability : The ability to learn from experience or to respond the ability to see relationships and make predictions and so on.

**OPERATIONAL DEFINITION:**

Intelligence is what the Intelligence test by Dr. S.K. Pal and Dr. K.S. Misra test measures.

**ACADEMIC ACHIEVEMENT:**

Performance is school or college in a standardized series of educational tests. The term is used more generally to describe performance in the subjects of the curriculum. (International Dictionary of Education by G. Teery Page and J.B. Thomas with A.R. Marshawil).

**OPERATIONAL DEFINITION:**

For the purpose of the study academic achievement is the final university examination marks as well as practicum component marks.

**INTEGRATED COURSE:**

Full time course or program in which a future education syllabus and industrial training are provided as fully coordinated elements. The course may be full time in a college or include practical experience or training in industry (International Dictionary of Education by G. Terry Page and J.B. Thomas with A.R. Marshawil).

**OBJECTIVES OF THE STUDY:**

1. To find out the creativity of the students of B.A.B.Ed. (integrated) degree course.

2. To find out the intelligence of the students of B.A.B.Ed. (integrated) degree course.
3. To find out the academic achievement of the students of B.A.B.Ed. (integrated) degree course.
4. To find out the relationship between creativity and academic achievement of the students of B.A.B.Ed. (integrated) degree course.
5. To find our the relationship between intelligence and academic achievement of the students of B.A.B.Ed. (integrated) degree course.
6. To find out the relationship among creativity, intelligence and academic achievement of the students of B.A.B.Ed. (integrated) degree course.
7. To suggest appropriated majors to developed creativity.

**DELIMITATIONS:**

1. The study is limited only to B.A.B.Ed. (integrated) students of Mahavir College, Kolhapur and Karmaveer Hire College (Gargoti).
2. The sample data is 160 students 80 students from each colleges.
3. The study dose not focus to one year B.Ed. course students.
4. The study deals with the interrelationship among creativity, intelligence and academic achievement.

**ABOUT THE DISSERTATION REPORT:**

The investigation carried out and the outcome of this research is reported and presented in five chapters in this thesis.

The **Chapter-I** deals with a background of the problem, definition of the problem, objectives, delimitations of the study.

The **chapter-II** deals with the review of literature and research which is directly and indirectly related to the present study.

The **Chapter-III** deals with the plan and procedure of the study. It contains method of research, data gathering tools, procedure and scoring of the tools used for the present study.

The **Chapter-IV** deals with statement of Null-hypothesis, formulae used for testing the null hypothesis, analysis and interpretation of the collected data and results of the study.

The **Chapter-V** deals with the Summary and Conclusions, recommendations and suggestions for further research.

Lastly, the references are given to complete the body of the thesis.