**The Evaluation of Creativity in Mentally Handicapped Children**

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Creativity as a research field offers an exciting challenge to many involved in the study of man. Yet it is a field beset by enormous conceptual and methodological problems. Whatever creativity may or may not be, it is considered a distinctively human attribute, one which differentiates man from machines and animals.

**1. An Approach to Creativity**

Many theories on creativity have been postulated and a multitude of standardised tests are used by psychologists and educationalists to evaluate creativity. Many criteria are applied, the diversity of which indicates that no consensus has been reached as to what creativity, in fact, comprises.

Much of the work to date deals with the identification of the **highly** creative person, and little attention is given to the developmental growth of this creativity or the creativity of the person who will never produce anything original or useful (here we refer, inter alia, to many hospitalised patients). The secondary phase of creativity, described by Maslow as the hard work and discipline which must follow the primary or inspirational phase, has also received little consideration. Current test results report what the testee has indicated he **would** do when faced with challenges. But how would he actually fare in the practical situation when perseverance is called for, or when his original idea fails and he has to start all over again?

Vona du Toit, an Occupational Therapist I had the privilege of working with, realised the significance of these questions and set out to study creativity and its relevance to Occupational Therapy. Her contribution to current thinking on creativity may be summarised as follows:

**1.1 Components of Creativity**

1. An inner drive; volition; motivation; or directedness towards action
2. The expression of this motivation in action resulting in a tangible or intangible product ("expressed motivation")

**1.2 Nature of Creativity**

The creative act implies a reaching out beyond the perimeters of ability in order to meet the challenges of everyday life and to overcome these by exertion of will. Therefore, when a person "tries his very best" to do a task which is new or unfamiliar, which he finds difficult or anxiety-provoking, he is, in fact, being creative and thereby expanding his creative ability.

**1.3 Correlates of Creativity**

Intellectual capacity, personality traits and environmental influences are recognised as factors which may limit or promote a person's creativity.

**1.4 Requirements for Creative Living**

1.4.1 The ability to form relational contact with materials, people and situations.

1.4.2 The ability to control the negative effects of anxiety.

1.4.3 The ability to think and act with initiative and originality.

1.4.4 The ability to exert maximal creative effort to meet challenges in the personal, interpersonal, recreational or work spheres of life.

**1.5 The Development of Creativity**

The question arises: Do these creative acts occur haphazardly throughout one's life or is there an ordination (ordinal scheme) in the development thereof?

According to Vona du Toit, the growth and recovery of motivation appears to follow a constant and sequential pattern, as does the growth and recovery of action. As it is possible only in **action** to express that which exists within oneself, it may be said that the quality and level of action reflects the quality and level of motivation; the latter are interdependent. She identified and described 10 such levels. Briefly, motivational growth is initially self directed with a growing emergence of preparedness to comply with norms together with increasing initiative and originality. These 10 levels may be grouped into four main phases:

**Phase 1 - Unconstructive or Pre-constructive Phase**

This phase is characterised by fleeting awareness of physical and social surroundings; by a preparedness to handle materials as well as the recognition of the unplanned, chance results obtained from this handling.

**Phase 2 - Constructive or Explorative Phase**

This phase is characterised by a measure of planned attempts to handle physical and social surroundings, the main aim being explorative.

**Phase 3 - Norm-awareness and Norm-compliance Phases**

These phases are characterised by efforts to carry out tasks in the correct manner and to behave in a socially acceptable way.

**Phase 4 - Norm-transcendence Phase**

This phase is characterised by ever-increasing efforts to act with originality, to improve on own efforts and to contribute towards society.

Many researchers concentrate on Phase 4, but it appears to me that the first three phases, especially the norm-compliance phase, form the foundations on which higher phases of creativity may be developed. Free rein in thought and action without consideration of norms or appropriate behaviour will not necessarily result in creative behaviour; it can, in fact, be destructive.

**2. The Occupational Therapist and Creativity**

Since she is involved in the patient's participation in different life tasks, the Occupational Therapist comes into contact with his creative efforts; his creativity has, at times, an elusive quality, yet at other times is patently obvious. In the clinical field we observe creativity as being these small yet paradoxically monumental acts when a patient tries his best to overcome not only life's challenges but also his own limitations.

A therapist skilled in the principles related to creativity may assess the patient's level, guide and nurture him through his present stage and later illicit responses indicative of the subsequent level of creativity. This implies that motivation is initially externally nurtured and stimulated; eventually - and hopefully - this can leas to patient "take over", and when he has progressed even further there might be signs of readiness to function on the next level.

The Occupational Therapist should try to achieve the delicate balance between teaching a patient Norm-compliance and encouraging him to use his own ideas without sacrificing the one to the other.

Norm-compliance

Own ideas

She should also be aware that some groups or cultures place great emphasis on imitation in crafts or handiwork. Many hospital situations may exert the same influence. The creative person might be a five-year-old child, a sport-loving scholar, a scientist or an elderly housewife. It does not matter whether he creates the nonsensical words of a child, a mechanical toy or a new recipe. Similarly, he may create with his hands, with words or with ideas.

**3. The Mentally Handicapped and Creativity**

The mentally handicapped person is obviously faced with many barriers to creative living. There is much controversy regarding the relationship of creativity to intelligence. Although intelligence, as measured by IQ tests, differs from creativity, it is accepted that creativity is not an entity independent of other facets of human intellect.

It appears that beyond a certain **minimum** level of intelligence, an increase in intelligence does not guarantee a corresponding increase in creativity. In order to function on lower levels of creativity (Pre-constructive, Constructive and Non-compliance phases) a certain minimum level of intelligence is required. On the higher levels, however, a high IQ alone does not determine the level of creativity; aspects such as determination, personality traits and social awareness come strongly to the fore.

**4. Research Project**

A pilot study was undertaken. Its main aim was to study the clinical manifestation of creativity in a sample of Black mentally handicapped children and to compare their performance with that of normal children of the same cultural group, and to record these findings. A future study will be undertaken to formulate specific principles for the valuation and stimulation of creativity with this category of patient.

**4.1 Sample Groups**

Group A: Fifteen children (five girls and ten boys aged 13 to 17) hospitalised for an average of six years, diagnosed as moderately (IQ 50 to 69) and severely (IQ 25 to 49) mentally handicapped. Due to lack of suitable standardised tests for Black children, diagnosis was made on the basis of clinical observation.

Group B: Fifteen children (five girls and ten boys aged 5 to 6) functioning on levels of creativity which, in my experience, correspond to the general creativity levels of Group A, attend nursery school.

Group C: Fifteen children (five girls and ten boys) matched chronologically with Group A, attend school in an urban area.

**4.2 Procedure**

4.2.1 Groups were assessed by testers from the National Institute of Personnel Research, using standardised tests, to wit, Classification Test Battery (incorporating pattern reproduction test, circle test and form series test) and the Form Classification Test. The tests, designed by Dr Reuning, are relatively culture-free and administered through the medium of mime. They were developed for the purpose of selecting persons of low educational level for industry. Whilst the battery does not test the full range of cognitive abilities, it covers important areas of reasoning and perceptual components. It is, therefore, a general measure of cognitive ability used as a backdrop to the assessment of creativity.

4.2.2 Twelve sessions, lasting one hour each, were held.

4.2.3 Four types of basic materials were used: paint, paper, clay and wood. In each category many variations of the material were used, as well as various combinations.

4.2.4 Examples and suggestions as to how some of the materials could be used were given at the start of each session (additional time was allocated for this).

4.2.5 Written, verbal and photographic records were kept of each child's response to each material. Specific attention was given to:

 **Productivity** (number of responses/products within specified time)

 **Uniqueness** (number of responses differing from responses of others in group)

 **Norm-compliance** (general standard of end product)

 I am aware of the pitfalls of studying a person's creativity only in terms of his products, but there is, on the other hand, very little that we can know about a person unless he does or says something. I attempted to be as objective in my evaluation as possible.

**4.3 Findings of the Study**

Due to insufficient numbers in the sample groups, the limited time available plus the fact that a normative study of creativity (as defined in this paper) is almost impossible, a non-parametric study was carried out. The following conclusions are tentative and may be modified in the light of future experimental development.

**4.3.1 Levels of Creativity assessed**

1. Unconstructive phase
2. Constructive (explorative) phase
3. Norm-awareness phase
4. Norm-compliance phase
5. Norm-transcendence phase

The spread over the sample groups was as follows:

 **Group A Group B Group C**

Phase 1 2

Phase 2 5 10

Phase 3 6 5

Phase 4 2 12

Phase 5 3

**4.3.2 Correlation between results of Cognitive Ability Tests and Creativity Assessment**

In Group A, a relationship between raw scores and creativity emerged; those scoring below 35 (out of a possible 107) were on the Constructive (explorative) level, whereas all scoring higher were on Norm-awareness and Norm-compliance levels. A similar pattern was **not** found in the other two groups.

**4.3.3 Comparative responses in different groups**

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|  | **Group A** | **Group B** | **Group C** |
| General response to a challenge | Tended to feel threatened. Experienced satisfaction when praised or given an **easier** task. | Met problems with fair amount of confidence. Experienced satisfaction when praised or given a **new** task. | Tended to feel challenged when faced with problems. Experienced satisfaction when problems had been mastered. |
| Curiosity and desire to learn | Significantly lower - were less able to learn from spontaneous situations; to ask for materials; to explain what they wanted to do or to ask questions. | Needed external structure initially; later more curious; able to ask for materials and question correctness of product. | Curious, keen to learn. No hesitation in helping themselves to material, being spontaneous or asking questions. |
| Productivity | Average of two responses/ products per session - most in group scored this number. | Average of three. | Average of four. Greater differences in individual productivity scores. |
| Uniqueness | Nine children showed no signs of uniqueness; six showed isolated uniqueness of response. | Three children showed no uniqueness. Five were unique in at least 20% of their responses. | All were able to show uniqueness. Three were unique in more than 75% of responses, another four in more than 50% of responses. |
| Task Concept | Mostly poor, as was understanding of function of end products. | Fair. | Good. |
| Task Planning | Generally poor; often sat not knowing where to start or which material was needed (the exception being those in Phase 4). | Generally poor - often stood up to fetch material they had not foreseen they would need. | Planning was evident. Usually started to work immediately - seldom at a loss. |
| Task Execution | Many constantly needed recognition and external reinforcement. | Also needed help and recognition. | Able to carry out task independently and appeared less dependent on external recognition and help. |
| Task Completion | Fluctuated. Involvement was unpredictable. Tasks often incomplete. Stopped immediately when end of session was announced. | Most children tried to continue until the task was complete (even though not always correctly done). | Prepared to re-do if necessary. Often wanted to continue when session had ended. |
| Imitation of others in group | Less common. They tended to be unaware of what others were doing. | Fairly common - appeared to be a security seeking measure and they were not prepared to take risks. | Seldom seen - when copying did occur it was more in terms of "That's a good idea, I also want to try it". |
| Interest in end product | Poor. Limited recognition of ownership - unmarked work often unclaimed. | Showed some interest in owning end product. | Very interested and asked to keep articles. |
| Use of materials | Used smaller quantities of material, tended to use them unchanged, seldom covered whole space (e.g. page). Lacked variety (e.g. seldom used more than one colour), scarcity of ideas - often made two of same product. | Also used incorrectly or carelessly, especially unfamiliar tools. | Used correctly, were able to adapt and use objects in different ways, e.g. scissor as a knife. |
| Use of objects/ tools | Incorrectly used at times, e.g. hammer wrong side round. | Also used incorrectly or carelessly, especially unfamiliar tools. | Used correctly, were able to adapt and use objects in different ways, e.g. scissor as a knife. |
| Use of design | Drawings often schematic and repetitive. Patterns often arranged in lines. Literalness of theme often seen. Repetition of learned shape, e.g. very few able to bisect lines - parallel lines common in designs. | Generally the same as Group A. Star designs more common. | Also showed repetition of designs, especially houses. Designs were more complex and asymmetrical, with lack of sameness. |
| Material preferences | Paint - appeared to invite more exploration with less skill and product requirements. | Clay. Wood (preferred by boys although they used very few own ideas due to unfamiliarity with material). | Wood. |

**Discussion:**

The mentally handicapped child differs quantitatively as well as qualitatively from his peers and there appears to be a qualitative difference between the extent of his creativity compared to a normal child, albeit younger, on the same level of creativity.

Inevitably one discovers the inadequacy of the methodology and the shortcomings in the techniques for studying creativity. It appears that different levels of creativity (as set out by Vona du Toit) may be clinically distinguished from one another on the grounds of common characteristics. It is also clear that various pathological conditions will affect a person's creativity in different ways: the traumatic effects of acute psychosis, mental handicap or physical disability will vary.

The Occupational Therapist who views her patient's task participation against this background may be influenced in her choice of activities to the patient's ultimate benefit.

**6. In Conclusion**

The following metaphoric view of the role of the Occupational Therapist dealing with the mentally handicapped child is offered: "We should be as cupped hands around the flame of his motivation, nurturing and protecting it against the winds threatening to extinguish it". These winds may be:

1. Fear of failure
2. Tasks which are too easy or too difficult
3. Well-meaning people who do not give him the opportunity to try his best
4. An un-stimulating environment
5. A climate lacking in praise and encouragement
6. Adults who do not recognise the magnitude of a creative experience for the child and who do not encourage him to seek similar experiences

In the novel, "Brave New World", Aldous Huxley poses the provocative question: "Did you ever feel as though you had something inside you that was only waiting for you to give it a chance to come out? Some sort of extra power that you aren't using - you know, like all the water that goes down the falls instead of through the turbines?"

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