Ranked Definitions of Creativity

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Abstract

The study was of a quantitative in nature and was conducted among secondary science schools in Dera Ismail Khan City, Pakistan. The study recruited total 82 (60 Male & 22 Female) secondary science teachers. A checklist containing six definitions of creativity was given to them. It was asked to rank the definitions of creativity according to their perspective which best represent the definition of creativity. The results of the study showed that originality as the definition of creativity was on the top of the list while solving the problem in a unique way was on the lowest bottom of the list. Also clear differenceswere found in the mean scores of definitions of creativity. The study concluded that the best definition of creativity according to Pakistani secondary science teachers' perspective is the originality. The study discussed it in the light of previous creativity literature.

Keywords: *Definitions, Creativity, Originality, Secondary Science Teachers*

Introduction

Creativity is a universal notion (Isaksen, 1987) which comes at the top in significance, furthermoreit is not the gathering of factual knowledge only (Quintin, 2009) but it is the production oforiginal and valuable products (Mumford, 2003) and ideas (Amabile, 1996). Yorke (2001) also defined creativity and stated that it is the novelty or invention of something. In short, the creativity comprisesof designs, developments, and applyingnovel ideas (Mumford, 2003; Von de Ven & Angle, 1989; Amabile, 1996). Abovewerethe researchers who described creativity in different perspectives but there are also some researchers who disagreed in the sense that creativity has no specific definition e.g., Prentice (2000) said that a statement has been established in the field of creativity literature that being a multifaceted notion creativity does not possess any specific and unifying definition. To some researchers, the word creativity seemsan incongruous and obstruct concept (Cowdray & de Graff, 2005).Different researchers define creativity in different perspectives which make the researchers confuse that which definition of creativity is the most

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agreeable one, some call it novelty and usefulness (Mumford, 2003) while others call it originality or inventiveness (Yorke, 2001). The purpose of this study was to reach on a conclusive definition of creativity from the perspective of Pakistani secondary science teachers by giving them a check list. The check list was composed of six definitions of creativity where they have to rank the definitions of creativity according to their perceptions.

Rational of the Study

The rational upon which this study relies is that creativity is a phenomenon that can be learned and successfully can be taught to the students to make them professional in creativity but the problem is how can creativity be defined or which definition of creativity is the most suitable one because creativity has no universal definition (Prentice, 2000). Even the word creativity seems incongruous and inconsistent to the people (Cowdray& de Graff, 2005), let alone to define the word creativity. Following objectives were in mind to conduct this research;

1. To know the highly ranked definition of creativity from Pakistani secondary science teachers' perspective
2. To know the lowest ranked definition of creativity from Pakistani secondary science teachers' perspective
3. To know the differences in order of preference for the definitions of creativity

Literature Review

The current researcher reviewed the group of studies which were closely related to the study under investigation. From these reviewed studies, I arrayed the number of definitions to support my study. These definitions were agreeable as well as disagreeable to my study but it led me to make the case for my study. For example, Sternberg and Lubart (1999) put creativity under work that should be novel and appropriate. Similarly, Torrance (1970) said that creativity should lead to creative thing which should be novel, unique and original. In addition, Sternberg and Lubart (1999) stated that the academics have included two new characteristics to the definition of creativity which are appropriateness and added value. It means that creativity should possess novel, appropriate, unique, original, and valued ideas (Sternberg &Lubart, 1999; Torrance, 1970; NACCCE) otherwise it is not creativity. Beghetto (2005) stated that creativity needs both i.e., usefulness and novelty. Beghetto (2005) further stated that if the thing is novel but it doesn't contain any usefulness then it should not count under the umbrella of creativity. The other definitions which were found by the current researcher from the related literature were problem solving, competency of the finding of new solutions to the given problem (Costello, 2000). It is proved form the description of Costello (2000)

that originality, appropriateness and problem solving are main definitions of creativity.Researchers clearly stated that a process can be counted creative if it qualifies the qualification of originality. In turn originality can be defined in several different ways. The things which possess the qualities of uniqueness, innovativeness and imagination can be called as originals.

Since no universal definition of creativity has been given due different perceptions towards creativity and ongoing research in the field of creativity therefore instead of agreeing to the above definitions of creativity consistencies have been observed with regards to the definition of creativity. A unique definition of creativity has not yet fully reached upon which all researchers (e.g., Hadamard, 1939; Rothenberg, 1990; Snow, 1986; Sternberg et al., 2002; Torrance, 1989) have agreed upon to the core of their hearts.

Research Methodology

The study was a quantitative survey research design. Permission from head of the schools was got before delivering the check list to the respondents of the study. Checklistcomprising six definitions of creativity was given to secondary science teachers, and participation was voluntary based. In this way relatively less time was spent on the collection of data.The researcher himself approached all secondary science teachers to collect the data. A checklist of definitions of creativity was developed from the broad view of literature. The checklist was comprised of total six definitions of creativity which were *originality, usefulness, innovation, invention / discovery, novelty and solving problems in a unique way*. The participants were asked to rank the definitions of creativity in the order of their preferences which best suits to the definitions of creativity in their perspective.

Fully completed survey questionnaires came from the sample. The sample for the study was selected through random sampling technique. Sample was consisted of 82 secondary science teachers from Dera Ismail Khan City, Pakistan. Out of this sample, 60 (73.2%)were male teachers and 22 (26.8%) were female teachers; it is not surprising that less female teachers were recruited for the study because the recruitment of study was voluntary based therefore, lesser female teachers joined the study.31.7% respondents fall in the age category of 20–25 years, 41.5% respondents fall in the age category of 26–30 years, 18.3% respondents fall in the age category of 31–35 years, 3.70% respondents fall in the age category of 36–40 years and 3.70% respondents fall in the age category of 41–45 years old. The respondents were the secondary science teacher from Dera Ismail Khan City of Pakistan. The teachers mainly taught the science subjects likeMath, Physics, Chemistry, and Biology. Data were also collected from the teachers on their grade level and the subjects that they taught.

Analysis of Data

The researcher used the software of SPSSto analyze the data. The responses of the checklist were analyzed by use of *Mean Score Comparison*. The *Mean Score Comparison* was used to compare the six definitions of creativity on the checklist. Demographic responses were analyzed by the descriptive statistics. The *Mean Score Comparison* and *percentages* were computed to see the ranking of each definition of creativity.

Results of the Study

In results the demographic information of participants by descriptive statistics were shown as presented in Table 1 below. It then followed by results which were sought for the three objectives of the study.

Table 1: Demographic information of the respondents

Demographic Variables	N	Percentage
Gender		
Male	60	73.2
Female	22	26.8
Age		
20-25	26	31.7
26-30	34	41.5
31-35	15	18.3
36-40	03	3.70
41-45	03	3.70
Marital Status		
Married	39	47.6
Single	41	50.0
Divorced	02	2.40
Area		
Rural	33	40.2
Urban	47	57.3

There were total six definitions of creativity which were *originality, usefulness, innovation, invention / discovery, novelty and solving problems in a unique way* and their mean scoreswere 4.18, 3.94, 3.70, 3.41, 4.16 and 3.30 respectively. Regarding the definitions of creativity, the participants ranked *originality*to be the highest as *originality*(mean score=4.18) got the highest mean score as is shown by table 2 below.

Table 2: Mean Score of Originality

Definitions of Creativity	Originality	Usefulness	Innovation	Invention Discovery	Solving problems

					a uniq way
Mean Value	4.18	3.94	3.70	3.41	3.30
Std. Deviation Value	2.044	1.855	1.824	1.640	1.719

On the contrary, *solving problems in a uniqueway*was ranked lowest by the participants as*solving problems in a uniqueway*got the lowest mean score (mean score=3.30) as is shown by table 3 below.

Table 3: Mean Score of Solving problems in a Unique way

Definitions of Creativity	Originality	Usefulness	Innovation	Invention / Discovery	Novelty	Solving problem in unique way
Mean Value	4.18	3.94	3.70	3.41	4.16	3.30
Std. Deviation Value	2.044	1.855	1.824	1.640	1.869	1.719

Similarly all the six definitions of creativity which were *originality, usefulness, innovation, invention / discovery, novelty and solving problems in a unique way*were arrayed in order of preferences of the secondary science teachers' perspective and their mean scores were also arrayed in descending order as 4.18> 4.16 >3.94 >3.70 >3.41>3.30 which showed a clear difference. It clearly shows a difference in the mean score and saidthat *originality* was highly ranked by the participants followed other definitions in a pattern as: Originality>Novelty > Usefulness >Innovation >Invention / Discovery > Solving problems in a unique way

Discussion

The Pakistani secondary science teachers' perspectives showed that the highly ranked definition of creativity is the originality. This was supported by the past studies as Yorke (2001) defined that originality or inventiveness is the characteristics ofcreativity.In addition, Torrance (1970) also brought the notion of originality and stated that it leads towards the creativity which supports the case of the current study. Similarly, NACCCE (National Advisory Committee for Creative and Cultural Education) also supported the results of the current study by concluding that any imaginative activity which supports the originality comes under the umbrella of creativity. It means that creativity should possess original ideas (Sternberg & Lubart, 1999; Torrance, 1970; NACCCE) otherwise it is not creativity.Also there were some other studies

which did not support the results of the current study. They focused on the other definitions of creativity but did not bring the originality into their focus. For example, appropriateness and added value were mentioned as the definitions of creativity by Sternberg and Lubart (1999). Similarly Mumford (2003) brought novelty and usefulness in to the definitions of creativity. Likewise Mumford (2003), the same idea was brought by Amabile, (1996) and defined creativity through novelty and usefulness. In short, these researchers did not focus on originality. It is surprisingly stated that solving problems in a unique way was given lowest rank by the Pakistani secondary science teachers although the past creativity researchers (e.g., Costello, 2000) stated that it is the defining character of creativity. This contradicts the results of the current study. Instead of agreeing to the above definitions of creativity,it is stated that consistencies arise when we define creativity because of different beliefs towards the creativity. Due to different beliefs of creativity there is no single definition to which all of the researchers and experts are agreed to core of their hearts.

Conclusions

After consultation with the past creativity literature, I arrived at the conclusion that although many definitions of creativity were found. Although these were all worthy definitions of creativity but the most surprising event is that Pakistani secondary science teachers gave highest rank to the originality while solving problems in a unique way got the lowest rank. It is concluded that the thing or product which is original in nature will be creative in highest. While it cannot be denied that creativity also includes various other definitions which were mentioned in the previous parts but what is concluded here is that the best and highly ranked definition of creativity in the eyes of Pakistani secondary science teachers is the originality. So it is mentioned decisively that if originality takes place in the students' behavior our students can become more creative as the best qualification of creativity in the eyes of Pakistani secondary science teachers is the originality.

Practical Implication

Today it is much a problem for the creativity researchers that to which definition of creativity we should mostly rely on. Also this creates a gap for the creativity researchers. We feel confident that there should be a definition of creativity which should establish a scale for creativity. Also this should help in establishing of creative environment so as if we adopt that specific definition of creativity to make our students creative and to compete or to make use of the real world in practice. As was concluded above Pakistani secondary science teachers ranked originality as the best definition of creativity therefore, it is practically stated that teachers / educators should work on such abilities of

the students so that a sense of originality (i.e., creativity) could be promoted in their behavior.

Suggestions

Following suggestions were arrayed on basis of the results of current study.

i. The government should offer such curriculum that ensures the originality.
ii. The science curriculum should contain the vigorous amount of creativity which further maps the minds of the students towards originality.
iii. They science teachers should promote the sense of originality in their students.
iv. Workshops on creativity (i.e., originality) should be initiated.
v. The students' creativity should be tested on the basis of originality.

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