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INDEX

Paper	Title	Author	Page No.
No.			
1	A Study On The Impact Of Creative	DR. PUNAM KESHARWANI	3-10
	Language Among Students On Educational		
	Achievements		
2	Chemical Synthesis And Characterization of	S. R. TAKPIRE	11-
	Polyaniline/Polythiophene Copolymers for Its		
	various Application		



A Study On The Impact Of Creative Language Among Students On Educational Achievements

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Abstract

The objective of the presented research is to study the impact of linguistic creativity among students in comparison to their achievements. For this research work, a survey research method was utilized, and null hypotheses were formulated. Based on the derived educational scores of annual examinations of class 9 for assessing linguistic creativity and independent academic achievements, a total of 150 students (75 boys and 75 girls) were selected using a stratifiedSS random sampling method.

For educational achievements, the judge has been divided into three groups - high, average, and low academic achievement groups based on the calculation of quartile scores. A statistical analysis of the data was conducted to compare the high and low academic achievement groups for linguistic creativity through a univariate ANOVA and pairwise group comparisons. The obtained conclusions indicate a significant difference in linguistic creativity based on educational achievements. Students with lower academic achievements tend to exhibit lower linguistic creativity compared to the higher and average groups.

The correlation coefficient was computed between linguistic structuralism and the educational achievement index using Karl Pearson's method, revealing a meaningful positive association between linguistic creativity and meaningful positive correlation with educational achievement.

Keywords: Creative Language, Educational Achievements

INTRODUCTION:

Creative individuals such as literary artists, visual artists, musicians, etc., are often seen for their achievements as they establish themselves as stars in the universe through their creativity. However, creativity is also present among the general public, visible and experienced in their day-to-day activities. For instance, a teacher imparting history lessons to children excellently and creatively instills imagination and interest in the subject. Similarly, a woman with very little income manages to bring novelty and beauty to her family's life amid challenging circumstances. Even a gardener's keen identification, selection, and care of plants transform the garden into a place of beauty. This emphasizes that creativity can be observed in any task performed.





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Creativity is a cultural achievement of creative individuals. In reality, it is an expression of a person's creative power within a culture. The cultural, scientific, and social progress of a country depends on the level of its creative culture. As a result of these creative efforts, India is considered richly endowed with the expressions of life and an abundance of energy and enthusiasm for life. Without the impact of the structuring power of life, no sage can achieve excellence and perfection.

Shakespeare, Kalidas, Valmiki, Sonal Mansingh, Lata Mangeshkar, Devika Rani, and countless other personalities have been regarded as exemplary figures in their respective fields. Presently, education is progressing towards the holistic development of boys and girls, emphasizing that fostering creative thinking is an integral part of their growth. Creative thinking in every sphere enriches the entirety of that domain, allowing artists, musicians, writers, scientists, and individuals in every field to contribute through their creativity. The development of creativity in each field is crucial. In this context, language is directly associated with cultural creativity and civilization. The origin of language and script is a result of structuring, and language's expression fosters imagination and creativity. Doctor Zakir Hussain expressed his belief that there is no doubt that a mother tongue can effectively help youth become skilled. Language is as natural for the development of the human mind as a mother's milk is for a child's physical growth.



Research studies in the context of language creativity have been observed previously. For instance, a study on language creativity and creative writing was conducted in 2011. This study suggests that creating circumstances for learners' language creativity is essential, necessitating opportunities for them to generate new ideas themselves.

Sahina, Elwin, Yaeger conducted a study on the perception of creativity and metaphorical visualization among pre-school and primary school teachers regarding their structural creativity. The study involved collecting data from 200 teachers from various primary and pre-primary schools. The conclusion drawn from this research is that teachers perceive thinking skills as an attribute of innovation and creative individuals. They believe that not everyone exhibits structural creativity naturally, but it can be learned and improved upon progressively.

Navin Jeene and Swan (2007) conducted a study on a daily basis about creative topics in language. Their examination of ongoing work argues that creativity is not just a trait of specific and talented language users but is also evident in day-to-day activities and practices.

In another study, "Hector" (2003), the structural creativity and writing skills of teachers in primary schools in Hong Kong were analyzed. This study involved 500 Chinese language



e-ISSN No. 2394-8426 Nov-2023 Issue-III(III), Volume-XI

teachers. Teachers acknowledged that fostering a conducive environment for creativity and developing self-confidence are crucial for creativity. However, they continue to teach writing through conventional methods.

Dixie Iron conducted a study in 2012 on the visualization of creative competence among Turkish students and teachers. The purpose of this research was to determine the personal opinions of Turkish student-teachers in the context of creativity. In order to achieve this objective, the study provided meaningful opportunities for student-teachers to form their personal opinions regarding creativity in terms of gender, background, social, and economic levels.

Glenn Julina's 2007 creative act research clarified that children typically do not embrace every word creatively, which is later accepted in life in an aesthetic manner. However, the initial process of learning words is a creative response to word meaning.

Based on the aforementioned studies, it can be stated that the development of linguistic creativity is extremely important. Therefore, choosing the aforementioned stages through improvement is suitable for research purposes. The significant role of school teachers in its development emphasizes the selection of independent curriculum achievement, which is appropriate in the context of linguistic creativity.

Objectives:

- To conduct a comparative study of students' linguistic creativity based on their educational achievements.
- To examine the relationship between academic achievers and their linguistic creativity.

Hypothesis: The Hypothesis for this research is as follows:

- There is no significant difference in the linguistic creativity of students with high, moderate, or low educational achievements.
- There is no significant difference in the linguistic creativity between students with high and moderate educational achievements.
- There is no significant difference in the linguistic creativity between students with high and low educational achievements.
- There is no significant difference in the linguistic creativity between students with moderate and low educational achievements.

• The linguistic creativity is not significantly impacted by educational achievement.

Limitations:

- The present research was conducted in the Mumbai district of Maharashtra state in India.
- It included students studying in higher secondary levels and who were studying in the Hindi medium.
- The present research is limited to the possibilities of linguistic creativity.

Research Methodology:

For the present study, a descriptive survey method was chosen by the researcher. This involved the use of comparative group design.

Overview and Framework:

The study comprises students enrolled in higher secondary levels and studying in the Hindi medium within Mumbai district. It selects two schools from each of the four geographic divisions



(north, south, east, and west), totaling eight schools, involving a random selection of 75 male and 75 female students, summing up to a total of 150 students.

Objective: The aim of the research is to study the impact of educational achievements on students' language creativity. The study differentiates between linguistic creativity dependent on education and independent of educational achievements.

Tools: To measure both aspects, the following tools were utilized:

Language Creativity Test developed by Dr. S.P. Mehrotra and Sucheta Kumari for assessing linguistic creativity.

The reliability coefficient via Cronbach's alpha for pre-testing method was 0.91, and for split-half method was 0.89, while the validity coefficient was 0.62.

The test includes five sub-tests: narrative construction, dialogue writing, poetry creation, descriptive style, and vocabulary construction. There are 27 items in total, and the time allotted for completion is 2 hours and 30 minutes.

Measurement of Educational Achievement: The annual scores of class ninth students were included for measuring educational achievement.

Group Formation: The researcher formed groups based on independent thinking. The entire population of students was divided into three groups using quartile calculation: lower quartile (25% to 50% quartile), average (50% to 75% quartile), and higher quartile (75% and above quartile) based on educational achievements.

Statistical Analysis of Data: The examination of the research hypotheses was done through statistical analysis, which revealed that:

Hypothesis 1 - There is no significant difference in the language creativity of students with high, moderate, or low educational achievements.

Variance	Total of	DF	MEAN	F VALUE	SIGNIFICAN
source	score		VALUE		CE LEVEL
Between	169362.15	2	89681.08	17.48	0.01
groups					
Within group	543127.81	11 8	4656.55		

Table1 F value table

The calculated F-value of 17.48 obtained from the analysis surpasses the critical F-value of 4.78 at the 0.017 significance level. Consequently, the null hypothesis has been rejected.

Therefore, it can be inferred that there is no significant difference in language creativity between students with high and low educational achievements.

Hypothesis 2: There is no significant difference in language creativity between students with high and low educational achievements.

TABLE-2

VALUE TABLE FOR LANGUAGE CREATIVITY COMPARISION

GROUP	N=	DF	Mean	Standard	SE DM	Τ –	SIGNIFICANCE
	80		VALUE	deviation		value	LEVEL
HIGH	40	60	173.91	73.13	17.88	6.40	0.01
EDUCATIONAL							TABLE VALUE



ACHIEVEMENT					
GROUP					
LOW	40	85.28	64.92		
EDUCATIONAL					
ACHIEVEMENT					
GROUP					

According to Table 2, the t-value obtained is 6.40, which exceeds the critical t-value of 2.66 at a significance level of 0.01 with 58 degrees of freedom. Consequently, the null hypothesis is rejected.

Hence, it can be concluded that there is no significant difference in language creativity between students with high and average educational achievements.

For Table 2, the comparison of language creativity is performed.

Hypothesis 3: There is no significant difference in the language creativity between students with high and average educational attainment. Table 3 presents the t-values for the comparison of language creativity.

TABLE-3

T-TABLE VALUE FOE CREATIVE LANGUAGE COMPARISION

GROUP	Ν	Mean	Standard	SE	DF	Т	SIGNIFICANCE
			deviation	DM		value	LEVEL
HIGH	40	186.03	77.73	19.111	82	3.21	0.01
EDUCATIONAL							T= 3.64
ACHIEVEMENT							
GROUP							
AVERAGE	80	150.98	88.46				
EDUCATIONAL							
ACHIEVEMENT							
GROUP							

The t-value shown in Table 3 is 3.21, which is less than the tabulated t-value of 3.64 for 82 degrees of freedom at a significance level of 0.01. Therefore, the null hypothesis is rejected. fourth hypothesis, there is no significant difference in the language creativity between students with average and lower educational achievements.

TABLE-4

VARIABLE	Ν	Mean	Standard	SE DM	DF	T value	SIGNIFICANCE
			deviation				LEVEL
AVERAGE	90	156.03	69.42	16.111	88	5.50	0.01
EDUCATIONAL							T= 3.63
ACHIEVEMENT							TABLE VALUE
GROUP							
LOW	40	75.98	65.94				
EDUCATIONAL							



ACHIEVEMENT				
GROUP				

VARIABLES	N	STANDARD		CORELATION	RESULT
		ERROE OF	CORELATIO	SIGNIFICANC	
		THE	Ν	Е	
		CORELATIO	COEFFICIEN		
		Ν	Т		
		COEFFICIEN			
		Т			
EDUCATIONAL	15	0.598	R=0.088	0.01	SIGNIFICAN
ACHIEVEMEN	0				Т
Т					
LANGUAGE	15	0.248			
CREATIVITY	0				

The t-value of 5.50 shown in Table 4 is greater than the tabulated t-value of 3.63 for 88 degrees of freedom at a significance level of 0.01. Therefore, the null hypothesis is rejected.

Fifth hypothesis, there is no significant impact of educational achievement on language creativity.

TABLE-5

According to Table 5, the correlation coefficient R = 0.088 exceeds the critical value of R = 0.088 at the significance level of 0.01. Therefore, a meaningful relationship is found between language creativity and educational achievement. Hence, the null hypothesis of Hypothesis 5 is also rejected.

Results:

- There is a significant difference in the language structuring ability between students with higher and lower educational achievements.
- There is a significant difference in language creativity between students with higher and lower educational achievements.
- There is no significant literary difference in language creativity between students with average and higher educational achievements.
- There is an assistance difference in language structuring ability between students with average and lower educational achievements.
- There is a meaningful impact of educational achievement on language creative expression.

CONCLUSION



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The conclusion drawn from the presented research findings is that language creativity is significantly associated with the level of educational attainment. Language development is found to be higher among students with higher educational achievements compared to the average and lower educational achievers. Various studies have revealed that a lower level of creative and cognitive relationship is found. However, studies conducted by Preet and Fernandez indicate that this correlation varies as per the intelligence's creative structure, and Guilford's multiple factors theory and Gardner's multiple intelligence theory integrate creativity into structure. Therefore, it is evident that language creativity is higher in students with higher educational achievements, whereas the level of language structuring in students with average educational achievements is higher compared to those with lower educational achievements. This clarifies that there is an interdependence between educational achievements and language structuring creativity and their relation is meaningful and positive. This demonstrates that language creativity and the level of achievement are interdependent.

EDUCATIONAL IMPLICATIONS:

The educational implication of this research is that educational achievement and language creativity are interdependent. Thus, language teachers should focus not only on language development but also on fostering creativity among students. Numerous research conclusions clearly highlight that the environment and efforts of teachers are crucial for the development of creative structuring. Their provided inspiration, motivation, and environment facilitate creativity in children's daily activities. Although the level of language creativity in students with lower educational achievements is lower in comparison to average achievers, the research by John (2007) shows that relatively, language creative standards can be higher or lower. However, in everyday tasks and common activities, creativity is inherent. Julia's (2007) research on language structuring development corroborates the notion that each initial word uttered by children contributes to language structuring creativity. Therefore, adhering to the conclusions drawn from previous research studies is essential in the teaching-learning process to foster language creativity among students.

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Chemical Synthesis And Characterization of Polyaniline/Polythiophene Copolymers for Its various Application

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Abstract

polymerization reactions of thiophene and aniline monomers and chemical copolymerization of these polymer were investigated for synthesis of sample powder. The chemical oxidative polymerization of thiophene and aniline mixture polyaniline (PANI) and polythiophene (PTh) occurs when TiCl₄ is used as oxidative agent. The different concentration of TiCl₄ was taken for polymerisation. It was observed that homopolymer and copolymer colloids of different compositions are formed, respectively, depending on the concentration of TiCl₄ used. The product was collected in form of powder sample.A ITO/copolymer/Al heterojunction Photovoltaic cell has been fabricated on ITO glass substrate and Current-Voltage (I-V) measurement has been done on the Photovoltaic cell. The characterisation was done through XRD analysis.

Keywords: Thiophene; Aniline; Copolymerization, indium tin oxide (ITO)

Introduction

Photovoltaic cells(PVC) are considered as the most attractive research area, because of their high performance in converting solar energy to electric energy at low cost and easy production.1 In PVC so far two classes of Cells such as organic metalliccomplexes and metal-free organic Photovoltaic cells were employed in the electrical energy production from sunlight [1]. Polymer photovoltaic (PV) cells have the advantage of low-cost fabrication and easy processing. The state-of-the-art device structure is the polymer bulk heterojunction blending conjugated polymers intimately with soluble fullerene derivatives. An interpenetrating network of the donor-acceptor blendSandwiched between the anode and cathode offers large interfacial area for efficient charge separation and excellent charge transport, leading to high efficiency performance. [2]. Light absorption in organic solar cells leads to the generation of excited, bound electron-hole pairs (often called exactions). To achieve substantial energy-conversion efficiencies, these excited electron-hole pairs need to be dissociated into free charge carriers with a high yield. Exactions can be dissociated at interfaces of materialswith different electron affinities or by electric fields, or the dissociation can be trap or impurity assisted [3]. Extensive researches have been devoted to the development of alternative, efficient metal-free dyes, which offer advantages asphotosensitizers in that they have high molar absorption coefficientsdue to intramolecular transitions and their structurescan be modified easily and economically. In recent years, while its various metal-free



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dyes based on coumarins [4], indulines [5] perylenes[6] merocyanines [7] porphyrins [8], triarylamines [9] and carbazoles [10] have been reported, such compounds displayover all conversion efficiencies in the range 5 to10%.

Experimental

Synthesis of Conducting Copolymers PTh/PANI

AR grade chemicals (Merck-India), monomer of thiophene and aniline, titanium chloride, were used in the present work. The thiophene and aniline monomers were used in 1:1 M. After the rigorous stirring of solution of thiophene and aniline monomers added 80% TiCl₄in that solution. In the polymerization reaction of mixture of monomers, it was observed that as soon as the TiCl₄ was added to the monomer solution, the colour changed almost instantaneously and the solution became dark brown/green. There was an increase in temperature of the solution during the start of reaction, which was an indication of exothermic reaction. The reaction was carried out at room temperature. which gives rise to the formation of a brownprecipitate. The copolymer and mixture of PTh/PANI so obtained was soft jet- powder, dried in a desiccator's overnight and again dried in an oven at 40 °C. In this way, different samples copolymer PTh, PANI were prepared with different concentration (80% to 20%) of TiCl₄.Photovoltaic cell prepared by doctor blade technique from sample copolymer powder on ITO glass plates and photovoltaic cell connected digital ammeter and milivoltmeter in series.



cell

I-V curves

To establish the performance of a PV cell, I-V curves are measured, both in the dark and under irradiation. A typical I-V curve, plotted on a linear scale, is shown in fig. The dark current is obtained by varying the voltage without illumination. For properly operating cells typical diode behavior is obtained. Under illumination a photocurrent (II) is generated on top of the dark current. The I-V curve has several characteristic points . The short circuit current (Isc) is obtained when the voltage is zero and the electrodes are connected externally. The open circuit voltage (Voc) is obtained when the current is zero. At both points the cell does not produce power, since V I = 0. The maximum power (Pmax) is obtained when the product VI is at a maximum (the "maximum power point", MPP). Another indicator for the performance is the fill factor (FF).

FF = Vmax x Imax / Voc x Isc.





Figure 2: Current versus voltage plot showing of the PV cell.

Characterization

The crystal structure of powder materials was examined by using an X-ray diffraction spectrometer (XRD) withradiation sharp peak not found so that it is semicrystalline structure





Nov-2023

Polyaniline, polythiophene and its copolymer have been successfully synthesized via in situ by oxidation polymerization. In order to discuss the photovoltaic polymer cellthere are many factors that dictate the performance efficiency of a PVcell.V-I characteristics copolymer hotovoltaic cell studied. Efficiency copolymer photovoltaic cell efficiency is more compared toEfficiency polymer photovoltaic.The optimization of power conversion efficiency, fabrication ofITO, and alternating the form of devices from conventional flat to wires-based cells are needed for furtherstudy.

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