

## MODELING STUDENTS' CREATIVE SKILLS FOR EMPLOYABILITY THROUGH 4P'S OF CREATIVITY AMONG FEDERAL POLYTECHNIC STUDENTS IN NORTH-WEST, NIGERIA

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### ABSTRACT

Creative skill is one of the 21<sup>st</sup> century skills needed for employability and it is an important goal of the 21<sup>st</sup> century learning. However, stakeholders in education hardly harness necessary support for creativity. This study investigated the composition of creativity for employability with the views to develop a model. Instrumentation method was used. The population of the study consists of National Diploma (ND) students of entrepreneurship in federal polytechnics in North West Nigeria. 4P's Creativity-employability Scale of 44 items was developed based on the previously discussed dimensions of 4P's of creativity. This instrument and Animashaun Creativity Assessment Scale were completed by five hundred and ten (510) ND students of entrepreneurship who were who were selected using simple random technique. The results revealed the factor loadings of .53 to .81 across the four factors. 4P's Creativity-employability scale has Kaiser-Meyer-Olkin (KMO) value of 0.676 which represents a good fit of the data. Also, 69.71% of the total variance of the 47 items is explained by extracting the fifteen factors with the Eigenvalues ranging from 8.717 to 1.062. The internal consistency of 4P's Creativity-employability Scale and Animashaun Creativity Assessment Scale yielded 69.71 and .68.58 respectively. 4P's Creativity-employability model outlined four interactive components necessary to promote students' creative ability for employability.

**Keywords:** Creativity, Employability, Creative Process, Creative Product, Creative Person.

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## INTRODUCTION

There is a concern worldwide that the current curriculum is not producing graduates with the kind of skills that are required by the employers. Eleonora et al. (2014) stress that if we are to prepare our students to be able to adapt to changes in work place and face unpredictable encounters, we need to rethink education. Stressing further on the need to rethink education, Eleonora et al. (2014) pointed out that we have to move away from delivering knowledge, information and concentrate on how our students can use such knowledge.

More so, the extent to which tertiary education is capable of producing potential employable graduates in the competitive 21st century is attracting the attention of scholars and policymakers globally. In Nigeria, indications from past studies show that the high rate of unemployment experienced by graduates is not unconnected with a dearth of candidates with employability skills that employers are looking for (Pitan, 2015). Evidence in support of this assertion shows that out of over 40 million unemployed youths in the country, 23 million are unemployable possibly due to their lack of necessary skills for employment (Emeh et al., 2012). Pitan and Adedeji (2012) observed an overall skills mismatch of 60.6 percent among employed graduates, with critical deficiencies in creative abilities. This is evident in Purwati and Alberida (2022) assertion that creative thinking skills in learning are still relatively low despite the need for empowerment of students' creative thinking skills. Therefore, one of the 21<sup>st</sup> century skills which the students need for employability is creativity. More importantly, one of the ways by which we can rethink education is to model creativity into the curriculum.

Creativity according Salwa (2016) creativity is the ability to imagine or invent something new, creativity is not the ability to create out of nothing, but the ability to generate new ideas by combining, changing, or reapplying existing ideas. Creative thinking is a critical life skill needed for success in the 21st Century (Salna, 2012). Creativity has gained increasing importance and teachers are therefore expected to foster student creativity as one of the educational goals. More so, it is education's responsibility to prepare students by teaching them how to think not what to think (Salna, 2012). The only way to prepare our youths for their uncertain future is to equip them with skills that help them effectively deal with unknown challenges in the 21st Century (Sternberg, 2010). One of such skills is creative skill.

More importantly, creativity is essentially an employability skill in the 21<sup>st</sup> century. Employability represents an individual's capabilities, skills, and knowledge – both discipline-specific and transferable – relative to the industry in which they are seeking employment (Judd & Knight, 2016). Other scholars like Kinash et al. (2016) see employability as an individual's continued relevancy and fitness for work. Going by the definitions of employability, it is obvious that creativity is one of the 21<sup>st</sup> century skills for employability. Gray (2016) submits that creativity has increased its importance as an employability skill in the last decade, thus emerging as one of the top ten employability skills going into the third decade of the twenty first century.

While emphasizing the importance of creativity as employability skill, Schonfeld (2011) asserts that in a time of high unemployment when traditional skills can be outsourced or computerized, creative skills remain highly sought after and highly valuable. Nevin (2016) maintained that creativity is valued by graduate employers and is an important skill that insulates a workforce from unpredictable future work environments. Therefore, the importance of education for creativity in higher education can be derived from arguments in favor of a focus on student employability. In essence, creativity becomes the focus when preparing current students and future citizens to deal with uncertainty and to adapt to continuous change both personally and professionally (Karpova et al., 2011). According to Fields and Bisschoff (2013), the main

purpose of tertiary educational institutions goes beyond preparation of students for future careers, it also include preparing the students to be able to meet the challenges of the future and contribute original thought to challenges in the workplace and society as a whole. This point to the fact that students need to be supported to apply creative thinking skills and to develop creativity at various levels.

Since the traditional notion of education without an emphasis on creative attributes is no longer adequate in a highly competitive global job market, therefore, effectively designed curriculum contributes to a higher level of employability of learners who demonstrate creativity (Giselle & Fay, 2014). Suarta et al. (2017) identified creativity as one of the employability skills required by the 21<sup>st</sup> century workplace. More so, employers are placing increased demands on university graduates for creativity (Giselle & Fay, 2014). To inculcate creative skills in students for employability, Rhodes (1961) conceptions of the domains of creativity is critical.

Rhodes (1961) identified 4P's of creativity: process, person, press and product in attempt to define creativity, while emphasizing the importance of creative process and creative environment in promoting graduate employability. Eleonora et al. (2014) asserted that giving the creative process and creative environment, students can become equipped with creative skill which will be amongst the most useful qualifications one can have for increased employability opportunities. More so, Purwati and Alberida (2022) maintained that improving creative thinking skills can be done through the learning process in the classroom by applying learning models that can train creative thinking skills. While stressing the relationship between creative process and creative environment, Salwa (2016) opined that when we considering creativity as a process, this process must go through several stages until it reaches resulting creative individual, these stages require the appropriate conditions for creative environment to stimulate the learner towards creativity at every stage.

Lassig (2020) asserted that if schools understand the different purpose and ways in which students approach creativity, they might more effectively provide tailored support for creative development and achievement. Jackson (2006) asserts that one of the important and worthwhile educational goal of higher education is about helping students to develop their unique creativities. Therefore, owing to the importance of creativity in educational research, policy and practices, teachers are key-players for bringing creative practices into the mainstream curriculum (Beghetto, 2010).

Eleonora et al. (2014) maintained that we need to establish an appropriate learning environment and adopt those teaching methodologies that will encourage our students to develop their creativity and take advantage of opportunities in the real world. This is strongly supported by Jeffrey and Craft (2004) who maintains that in order to train creative learners, teachers need to create systems that nurture creative processes in all students rather than focus on certain creative individuals in their classroom. Creativity is essentially enabler that enables students not only to know or understand, but also to develop the ability to look at a situation from new and creative angles and express concepts and information clearly (Ramirez, 2013). Since the traditional notion of education without an emphasis on creative attributes is no longer adequate in the labor market, effectively measurement and designing of curriculum that would promote creativity for employability become imminence.

Literature which links the specific concepts of creativity and employability is generally rare and there are a dearth of empirical studies on confluence of creativity and employability in an educational context. However, other researchers like Pool and Sewell (2007), Forrier et al (2015) and Pitan (2016) developed graduate employability model but none of the models fashioned in the 4p's of creativity into their models. More so, scholars like Jordanous (2015) has

called on researchers to investigate the domain of creativity holistically by exploring through the angles of the 4P's, person, product, process, and press/environment. Therefore, this study model creativity skills for employability based on the principles of Rhodes (1961) 4P's of creativity, after literature search and empirical findings.

### **Problem Statement**

Creativity is an important skill for employability. As the importance of creativity become more and more critical, the demand for creative graduates is on increase. There is no doubt that creativity will help degree holders to meet the demands of employers and businesses operating in a rapidly evolving world. However, the increasing rate of unemployment is the major concerned of all the stakeholders in Nigeria. Graduates unemployment may not be unconnected with the kind of education they received. Hence, there are indications that many graduates are unemployed due to lack of skills. Some of the previous studies on models of graduate employability do not put creativity into consideration and the existing models of creative do not put the 4P's of creativity into consideration holistically. Therefore, this study modeled national diploma students' creative skills for employability through Rhodes (1961) 4P's of creativity.

### **Objectives of the Study**

- Assessing the perception of students and lecturers on how National Diploma programme can promote students' creative skills for employability.
- Develop 4P's Creativity-employability scale for measuring students' creative skills for employability.
- Determine the fitness of the model.
- Develop 4P's Creativity-employability model for adoption by institutions.

### **Research Questions**

- What are the components of creativity that can promote students' employability skills?
- What is the model fitness of 4P's of creativity-employability scale?
- What is the suitable model of 4P's of creativity-employability?

### **METHODOLOGY**

This study model the 4P's of creativity for employability. Instrumentation method was used. The population of the study consists of ND students of entrepreneurship in federal polytechnics in North West Nigeria. 4P's Creativity-employability Scale of 44 items was developed based on the previously discussed dimensions of 4P's of creativity. This instrument and Animashaun Creativity Assessment Scale was completed by five hundred and ten (510) ND students of entrepreneurship who were selected using simple random technique from each polytechnic used. Data was analyzed using factor analysis.

## RESULTS

**Research Question 1:** What are the components of creativity that can promote students' employability skills?

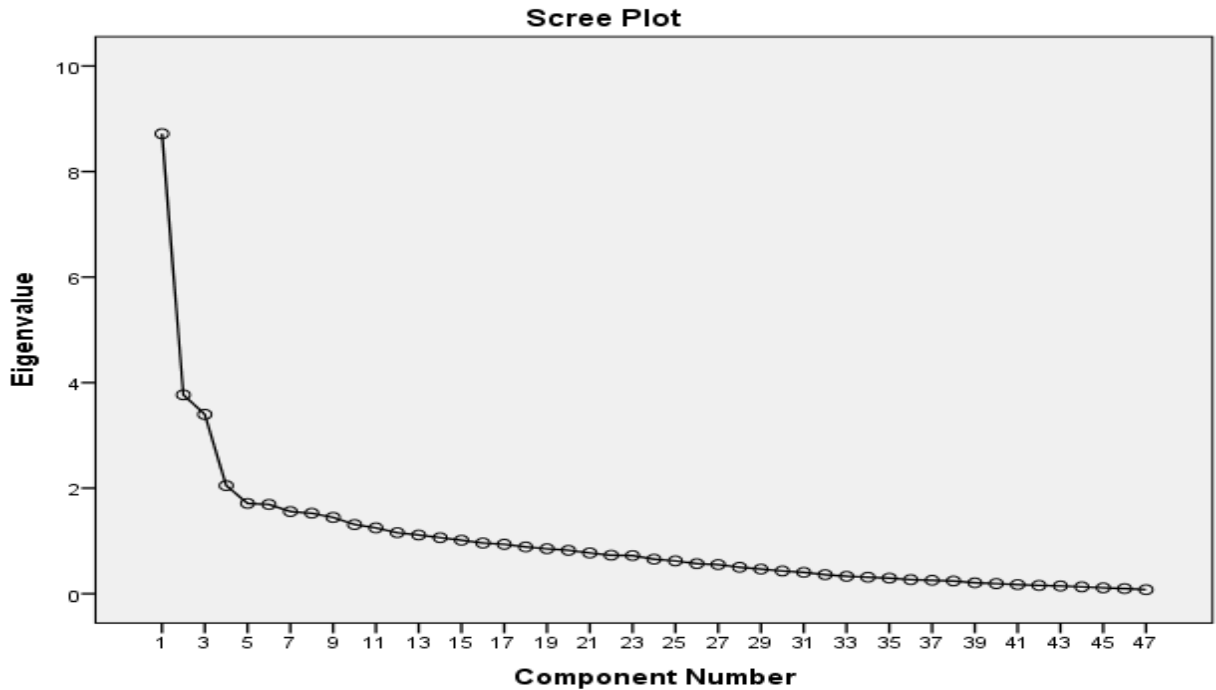


Figure 1: Cattell scree plot of 4P's of creativity-employability scale showing number of components and eigenvalues of the correlation matrix.

Principal components analyses were carried out on the responses of the sample to the 47 items of 4P'S Creativity-employability scale to establish their underlying dimensions. The initial rotated PCA produced a factor model of four dimensions as indicated by the scree plot and eigenvalues greater than unity. This rotated factor model was theoretically meaningful.

Table 1: Summary of Factor Loadings by Principal Component Analysis for the Oblique 4P'S Creativity-employability scale

Items	Factor Loadings			
	1	2	3	4
1. expose to a variety of learning experiences so as to find what one like	.74			
2. get mentor (s) in ones area of interest	.72			
3. value ones uniqueness, while learning how to work cooperatively with others	.60			
4. give room to evaluate one's own work so as to be guide against incorrect criticism	.76			
5. Encourage to engage in idea generation activity	.68			
6. reward for creative thinking, work, interests and efforts	.60			

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7. Evaluate creative work constructively	.71	
8. provide choices (materials) to select based on interest and abilities.	.69	
9. entertains ideas and suggestions	.67	
10. allow to express to curiosity	.69	
11. allow to test one's new ideas	.72	
12. recognize and value creative traits in one		.73
13. provide stimulating environment that will engage senses		.73
14. encourage manipulation of ideas and objects.		.61
15. recognize the need of creativity and problem solving skills		.80
16. acknowledge the importance of creativity for oneself and other		.67
17. understand the different ways to develop and nurture creativity		.81
18. facilitate peer critique		.73
19. accept the risk of failure		.61
20. foster collaborative endeavors		.82
21. provide space for abstract thinking		.74
22. encourages people to solve problem creatively		.71
23. encourage independent learning of students		.72
24. like to create his own thing.		.65
25. try to solve a problem by self before asking someone		.72
26. like to create new things and not just to use the ones that already exist		.63
27. Do something already that I never thought was possible		.53
28. think it is important to think about things in many different ways.		.59
29. imagine many things that do not yet exist.		.71
30. like to modify things that other people have created.		.68
31. have ideas on how to make new thing and how to improve them.		.66
32. ability to produce ideas that are unusual (uncommon).		.65
33. combine ideas in ways that other people have not tried		.67
34. create new things instead of doing repetitive exercises.		.71
35. if a certain resource is not available, I try to find a solution with other available resources		.69
36. produce a large variety of ideas		.55
37. produce work that is both novel and appropriate		.72
38. discover relationships between things		.77

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39. understand and interpret the type of problem to be solved	.78
40. pay attention to and understand other people's ideas	.80
41. create new solutions by combining things I already know	.65
42. I like producing something new (novelty)	.72
43. I like being the first to do something (originality)	.73
44. I like producing something important (usefulness)	.67
45. I like producing something uncommon (unusual)	.58
46. I like to produce something that meet the need of purpose (functional)	.69
47. My idea is different from others (originality)	.75

Note. Factor 1= creative process, Factor 2= creative press, Factor 3= creative person, Factor 4= creative product.

Table 1 shows that the standardized factor loadings for the four factor model of the 4P'S Creativity-employability scale. The factor loadings ranged from .60 to .74 for the first factor (creative process), from .61 to .81 for the second factor (creative press), from .53 to .80 for the third factor (creative person), from .58 to .75 for the fourth factor (creative product). This means that the scale has acceptable reliability coefficient of the minimum 0.51.

**Research Question 2:** What is the model fitness of 4 P'S of creativity-employability?

Table 2: Kaiser-Meyer-Olkin (KMO) and Bartlett Sphericity test

1. Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.676
2. Bartlett's Test of Sphericity Approx. Chi-Square	11895.886
3. Df	1081
4. Sig.	.000

Table 2 indicates that the 4P'S Creativity-employability scale represents a good fit to the data. Kaiser-Meyer-Olkin (KMO) value of the scale was found to be 0.676 and Bartlett Sphericity test was made to verify that the data have multi-variable normal distribution. These measures all led to the conclusion that the set of 47 items of 4 P'S Creativity-employability Scale were appropriate. The instrument has Chi-Square of 11895.886, the degrees of freedom (df) was 1081 and significance (Sig.) was 000. Therefore, the suitability for multivariate statistical analysis such as factor analysis of the scale is suitable.

Table 3: Total Variances Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.717	18.546	18.546	8.717	18.546	18.546

2	3.768	8.018	26.564	3.768	8.018	26.564
3	3.397	7.229	33.793	3.397	7.229	33.793
4	2.049	4.359	38.152	2.049	4.359	38.152
5	1.711	3.641	41.793	1.711	3.641	41.793
6	1.692	3.601	45.393	1.692	3.601	45.393
7	1.557	3.312	48.706	1.557	3.312	48.706
8	1.525	3.245	51.951	1.525	3.245	51.951
9	1.446	3.077	55.028	1.446	3.077	55.028
10	1.311	2.788	57.817	1.311	2.788	57.817
11	1.248	2.655	60.472	1.248	2.655	60.472
12	1.156	2.460	62.931	1.156	2.460	62.931
13	1.113	2.367	65.298	1.113	2.367	65.298
14	1.062	2.260	67.559	1.062	2.260	67.559
15	1.014	2.157	69.715	1.014	2.157	69.715
16	.960	2.043	71.759			
17	.936	1.992	73.751			
18	.887	1.887	75.637			
19	.852	1.812	77.450			
20	.823	1.751	79.201			
21	.773	1.644	80.845			
22	.729	1.551	82.396			
23	.722	1.537	83.933			
24	.654	1.392	85.325			
25	.622	1.323	86.648			
26	.570	1.212	87.860			
27	.552	1.175	89.035			
28	.501	1.066	90.101			
29	.466	.991	91.092			
30	.430	.915	92.007			
31	.405	.862	92.869			
32	.361	.769	93.638			
33	.330	.702	94.340			
34	.313	.665	95.005			
35	.297	.631	95.637			
36	.266	.567	96.203			
37	.254	.541	96.744			
38	.241	.513	97.257			
39	.206	.438	97.695			
40	.191	.407	98.102			
41	.172	.366	98.468			
42	.158	.336	98.803			
43	.147	.314	99.117			
44	.130	.276	99.393			
45	.112	.239	99.632			
46	.097	.205	99.837			
47	.077	.163	100.000			



Extraction Method: Principal Component Analysis.

Table 3 shows 69.71% of the total variance forty-seven (47) items are explained by extracting the fifteen factors with the Eigenvalues higher than unity (8.717, 3.768, 3.397, 2.049, 1.711, 1.692, 1.557, 1.525, 1.446, 1.248, 1.311, 1.156, 1.113, 1.062 and 1.014). This means that 69.71% of the second order factors can be explained by the first fifteen items determined by the Principal Axis Factoring Method. Therefore, it is evident that the conceptual framework to measure creativity-employability accounted for 69.71% of the total variance. Resultantly, only 30.29 % variance could not be explained to measure creativity-employability. The goodness of-fit of the creativity-employability scale is regarded to be satisfactory because 69.71% of total variance exceeds the required 60% goodness of fit measure. The reliability coefficient of the instrument is a bit higher than that of Animashaun Creativity Assessment Scale which is 68.58%.

**Research Question 4:** What is the suitable model of 4 P’S of creativity-employability?

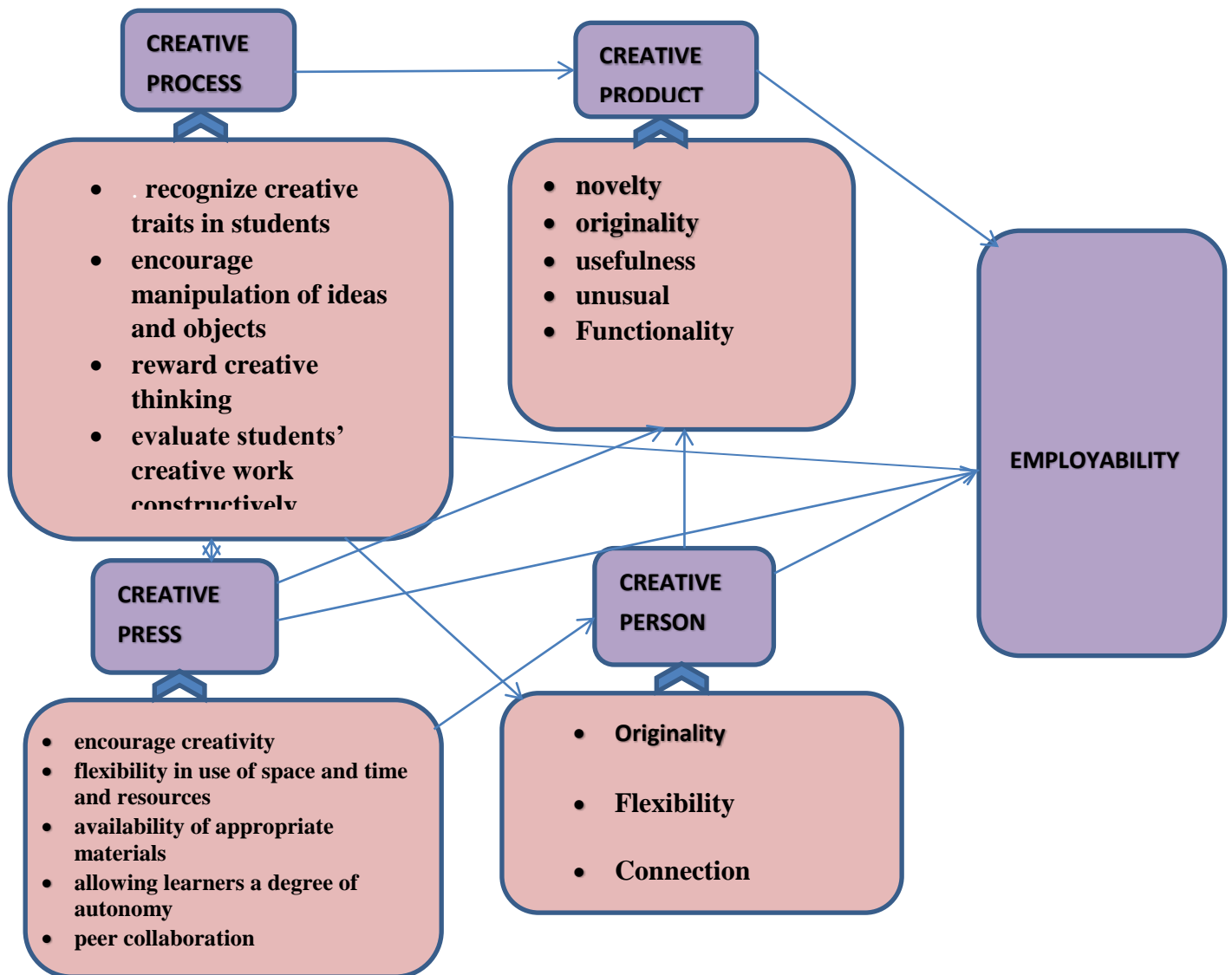


Figure 2: 4P’s of Creativity-Employability Model

## **Model Description**

The model outlined four interactive components necessary to promote students' creative ability for employability: creative press (environment), creative process (lecturer teaching), creative person (students) and creative product (ideas and or product). In the 4 P'S of creativity-employability model, the arrows explain the relationship between the different components in the model. Each of the components influences one another. So also each of the components is necessary for producing creativity students for employability.

Furthermore, the model shows that the four components of creativity for employability are related and intertwined. The arrow in the 4 P'S creativity-employability model is pointing to the fact that creative process, creative press and creative person facilitate the production of creative product which promotes employability. In fact, the four components of creativity-employability model are the building blocks. This means each component is necessary for the level of development of creativity for employability. However, the higher the level of each of the component, the higher the overall level of creativity for employability.

## **DISCUSSION**

The study revealed that the 4P'S Creativity-employability scale has Kaiser-Meyer-Olkin (KMO) value of 0.676 which represents a good fit of the data. Also, 69.71% of the total variance of the 47 items is explained by extracting the fifteen factors with the Eigenvalues ranging from 8.717 to 1.062. The reliability coefficient of 0.676 obtained is within acceptable set limit of 0.60, 0.63 and 0.64 by Field (2007). This finding is in line with Fields and Bisschoff (2014) who found 0.63 % reliability coefficient of theoretical model to measure creativity at a University.

4P's Creativity-employability model outlined four interactive components necessary to promote students' creative ability for employability. The interrelationship of the creative components is supported by Salwa (2016) who stressed that creativity as a process, must go through several stages until it reaches resulting creative individual, these stages require the appropriate conditions for creative environment to stimulate the learner towards creativity at every stage.

Furthermore, the model shows that creative process, creative press, creative person and creative product are necessary for the development of students' employability skills. This finding is corroborated by Eleonora et al. (2014) who assert that giving the creative process and creative environment, students can become equipped with creative skill which will be amongst the most useful qualifications one can have for increased employability opportunities. The finding also corroborate Karpova et al. (2011) submission that creativity becomes the focus when preparing current students and future citizens to deal with uncertainty and to adapt to continuous change both personally and professionally.

## **CONCLUSION**

The 4P's creativity-employability model developed combined creative behaviors and employability, which is evident from the four factors identified to measure creativity for employability. Since developing creativity for employability at tertiary educational level remains challenging because many factors play role in fostering or inhibiting creativity at tertiary educational level. The model contains four domains of creativity that are germane for nurturing employability skills. The use of a model to measure creativity will improve the explanatory

potential for tertiary institutions, academics and companies focused on creative ability development and employment potentials. The model also offers the possibility to be used in creativity research as it would play an important role in the development of individuals' creative abilities for employability.

## Recommendations

- Stakeholders in education should adopt 4P's creativity-employability model with the view to improving students' employability skills.
- Creativity-employability model would serve as a guide to students, parents, teachers, career services officers and other stakeholders in the school system.
- The 4P's creativity-employability model has potential to be applied and tested in different settings.
- The 4P's creativity-employability model should further be subjected to different measures of fitness to determine how all the model fits like Comparative Fit Index (CFI), the Hoelter's Fit Index and the RMSEA measure using data from different population.

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