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## Innovation learning at King Faisal University for achieving UNESCO sustainable development goals

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**Abstract:**

The twenty-first century is an important landmark in emphasizing innovation as a nation's sustainability and development. Currently, there is a UNESCO sustainable development goal No. 9, which states: Industry, Innovation, and Infrastructure, the researcher has used the descriptive survey method because of its suitability for study purposes. All countries including Saudi Arabia have been collectively working towards achieving the aims and objectives of UNESCO Goals. Education as a mechanism for national development and sustainable development in Saudi Arabia has been examined in various disciplines. This paper primarily aims at examining whether innovation learning helps to achieve UNESCO goals for sustainable development at King Faisal University. The findings of this study forward evidence that innovation learning helps to achieve UNESCO goals for sustainable development at King Faisal University. This research contributes to a greater understanding of effective education and high-quality outcomes, the promotion of effective planning and allocation of resources by objectives, and Assurance of the market of work and user needs. Which are crucial for achieving UNESCO goals for sustainable development.

**Keywords:**

*Innovation Learning  
Sustainable Development.*

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**Introduction**

No century has ever witnessed the challenges posed by the twenty-first-century with which meticulous attention to innovative ideas is made as a prerequisite for sustainable development. Sustainable development has been the focus of attention in Saudi Arabia in the last few decades. Education is the spinal cord of all sectors and creativity is the soul of education. Education has been regarded as a mechanism for national development in Saudi Arabia in one hand. On the other hand, there has been a reflection from the advocacy for education development by infusing innovation and critical thinking into the curriculum of Saudi Arabia education for the cognitive development of the students. Large attention is practically devoted to innovation by those in charge of education.

The sustainability and development of a particular nation depend on the total amount of commitment to developing its citizens. The development of citizens begins with the way they think about which metamorphosis to material development. For instance, in the year (1997), a creative and critical thinking conference was held in Singapore because there was a quick discovery that the students were unable to generate creative ideas and look at the issues critically (SMHE, 1997).

This might be because of the fact the 21st century requires smart students or learners who can intelligently solve a particular problem. For example, Hashim and Hussien (2003) have argued that that the reform of education through creative ideas in the USA has influenced Malaysia in South-Western Asia in the 1980s. Innovation in facing modern challenges must be tackled by restructuring the curriculum of Art education in Saudi Arabia. The recent effort of other countries to achieve the aims of sustainability and development in Saudi Arabia has re-raised the issue of restructuring the curriculum of Art education in Saudi Arabia. Saudi Arabia's government has taken up the challenges of restructuring and integrating the system of Art education. The integration pattern and incorporation of creativity are very important ingredients with which sustainable development Goals (UNESCO). It could be achieved in Saudi Arabia. Changing the dimension of Art Education in Saudi Arabia in the light of innovation for sustainable development in the country is a new way of looking at art education beyond its theosophical conceptions and misrepresentations. Therefore, the author will explain the exploration of innovation from art education, UNESCO's sustainable development goals. The scholarly

works on innovation will be reviewed in light of looking at the relevance of innovation in fostering sustainable development in Saudi Arabia.

Does this raise questions such as how students get knowledge? What is Effective planning and allocation of resources by objectives? What are the Effective education and high-quality outcomes? What is the Assurance of the market of work and user needs?

#### **Objectives of the study:**

1. Examine whether innovation learning helps to achieve UNESCO goals for sustainable development at King Faisal University.
2. Evaluating innovation learning at King Faisal University to achieving UNESCO goals for sustainable development.

#### **The hypothesis of the study:**

1. Innovation learning helps to achieve UNESCO goals for sustainable development at King Faisal University.

#### **Methodology:**

This study involved a total sample of 200 students from the department of art education batch (2017 – 2018) from the faculty of Education at King Faisal University – Saudi Arabia. The researcher used the descriptive survey method in this study. The sample was divided into two main groups: 100 and 100. Cross-validation was done on the first group, which was further divided into two subgroups: 50 and 50 respectively. The purpose of conducting cross-validation was to determine the validity and reliability of the instruments employed. The validated tools were then distributed to the second main group consisting of 200 students.

Five tools used in this study for UNESCO's sustainable development goals are achieved within the department of art education King Faisal University by the following:

1. Knowing how students to get knowledge. Giving wide access to knowledge through education is a necessary element in promoting sustainable development. (Johnson, & Andersen, 2012).
2. Recognizing that innovation is a task for all disciplines and individuals in the department.
3. Effective planning and allocation of resources by objectives.
4. Effective education and high-quality outcomes.
5. Assurance the market of work and user needs (OECD, 2016).

The scale consists of five items. Conceptualization is based on three factors;

Effective planning and allocation of resources by objectives, Effective education, and high-quality outcomes, Assurance the market of work and user needs. The active skills focus on the skills needed to be resilient, information seeking and cognitive restructuring. Future orientation is related to the assurance of the market of work and user needs. The sample was required to indicate their conceptions of UNESCO's Sustainable Development Goals are achieved within the department of art education at King Faisal University. The assessment on a six-point response scale (Strongly Agree, Moderately Agree, Agree, Disagree, Moderately Disagree and Strongly Disagree). Each statement was worded in a manner to capture the meaning attached to one of the five dimensions (Rebecca & others, 2016)

#### **Theoretical Framework**

Sustainable development has been defined as the ability of a particular nation to accelerate its development and achieving target growth socially, economically, politically, culturally, religiously, etc. In the contemporary period, the sustainable development of a particular nation is determined by its commitment to different spheres of human endeavors. Of such human endeavors is education, socio-cultural and economic facets of society (Feldhusen, J. F., 2002).

Since there is a concrete effort from the Saudi Arabian government to effect, the required changes in various areas especially in the provision of qualitative education and basic social amenities. Large attention is given to the likely role education specifically art education can play in accomplishing sustainable development in Saudi Arabia. Sufficiency of expertise and adequate planning contributes to the stay ahead art education is having in Saudi Arabia. Hence, for art education to play a contributive and desired role to make a realistic input, it is essentially required to learning of innovation to achieving of (UNESCO) goals for sustainable development at King Faisal University.

Furthermore, a minute connection is made on the role of art education in achieving sustainability and innovation. Art education according, to the majority of Saudi Arabia is regarded as Non-Grata (undesirable element) something in the sustainability and innovation discourse. In other words, it is rarely considered that art education covers all facets of human. The recent consciousness of Saudi Arabia's government on the reformation of education receives in for the attainment of (2030) vision in Saudi Arabia because the art education serves two purposes. First, it serves holistic Individual personality

development. Second, it serves socio-economic progress. It has brought to limelight, the desirability of art education in attaining the vision of 2030 in Saudi Arabia.

One of the strategic objectives of Saudi Arabia's (2030) vision is to improve the nation's prospects for achieving sustainable development Goals and creating employment for a sustainable manner. To achieve the long-term broad objectives, one of the challenges is for the nation to raise the quality and standard of education to international comparative levels. Saudi Arabia must opportunity to acquire quality education, in an environment conducive to learning. The strategy to be employed will include redesigning curricula to suit the labor market demand and benchmarking of the quality of education standard with global standards.

There have been several efforts to improve the current trend of art education in Saudi Arabia such as developing art education programs to be graduate programs. From the previous effort context to improve art education in various levels of education, there have been viable attempts to oversee the role and the impact of innovation in connection to sustainable development to accomplish the objectives of the 2030 vision. Since there is a relation between sustainability and innovation in connection to art education.

In Saudi Arabia, (2030) vision Goals project is an effort to promote educational, social, economic and cultural progress.

Saudi Arabia (2330) vision is contributory in the recent future, which has the nucleolus through which the aims and objectives of the Kingdom of Saudi Arabia could be achieved. To achieve the aims of sustainable development, Saudi Arabia has been striving tirelessly to ensure that its role is pivot in uplifting education. One of the first steps taken by Saudi Arabia is to re-define its objectives strategically to achieve (2030) vision (Ministry of Education).

The socio-economic progress requires a problem-solving technique rather than mere intellectual ingredient or exercise ascribes to sustainable development. Hence, for art education to meaningful, there is a need to develop the problem-solving technique being an integral component of creative and critical thinking skills mention earlier. By this, it means that there is a need for a shift of art education from being a mere

intellectual exercise to real problem-solving. In an attempt to shift this, it is a daunting task. It is the shifts of art education from a mere intellectual exercise to the problem-solving technique that will enable art education to have an influential and principal role to play in sustainable development; and make a meaningful contribution to the current effort to achieve the (2030) vision in Saudi Arabia.

#### Data Analysis:

The main task in this model testing procedure is to determine the goodness of fit between the hypothesized model and the sample data. To arrive at the conclusion, a confirmatory factor analysis (CFA) was conducted on the hypothesized structural model using Analysis of Moment Structure (AMOS) version 7. CFA assessed the reliability and validity of the individual items and the overall measurement model. A maximum likelihood estimation was adopted to generate estimates in the measurement model.

To assess the reliability of the tools in this study, the researcher made use of an estimate of internal consistency (Cronbach's alpha), which is a commonly used measure to test the extent to which multiple indicators for a latent variable belong together. A general rule is that the indicators should have a Cronbach's alpha of 0.70 or more (Spector, 1992). Further confirmation of the overall fit of the measurement model using CFA was obtained from the Maximum Likelihood estimation, Chi-Square ( $\chi^2$ ) statistics produced by AMOS, and various other goodness-of-fit criteria. Byrne (2001) suggested the goodness of fit indexes are the chi-square ( $\chi^2$ ), the smaller the chi-square, the better and p-value greater than .05, Goodness of Fit Index (GFI) and Comparative Fit Index (CFI) greater than .90 and the absolute fit of the model, Root Mean Square Error of Approximation (RMSEA) below .08.

#### Results:

Innovation learning helps to achieve UNESCO goals for sustainable development at King Faisal University.

The validity and reliability of the instrument reported here are based on the data collected from this study. The strategy employed in the present study to test the validity and the reliability of the instrument focuses on the psychometric properties of the scales used.

Table (1): Internal Consistency of the Tools (Cronbach's alpha)

Factors	Cronbach's alpha value
Innovation	.84
Achieve	.76

The results of cross-validation analysis generated

the well-fitting models (Innovation:  $\chi^2/df = 1.83$ ;

GFI = .94; CFI = .95; RMSEA = .05; Achieve:  $\chi^2/df = 1.90$ ; GFI = .99; CFI = .99; RMSEA = .05). Table (1) shows the internal consistency (Cronbach's alpha) of RBS and RS. As indicated by the coefficient, both instruments are reliable since the values are above the satisfactory level of .70 (Spector, 1992).

In the analysis of CFA, all items of innovation learning have non-zero loadings to all factors. The direction and magnitude of the factor loadings for the maximum likelihood estimation were substantial and statistically significant. The model was free from offending estimates and the internal consistency estimates satisfied the standard deemed necessary in scale construction. Furthermore, analysis of the 53 items from both tools resulted in a well-fitting model,  $n = 200$  ( $\chi^2/df = 1.318$ ; GFI = .967; CFI = .991; RMSEA = .02). Both fit indicators, the GFI and CFI exceeded the threshold of .90, the standard deemed important for model fit (Byrne, 2009). The root means a square error of approximation (RMSEA = .06) indicated a well-fitted hypothesized model. Root Mean Square Error of Approximation (RMSEA) has been recognized as one of the most informative criteria in covariance structure modeling. The RMSEA takes into account the error of approximation in the population (Byrne, 2009). Values less than .05 indicate good fit and values as high as .08 represent reasonable errors of approximation in the population. For CFI (Comparative Fit Index) and GFI (Goodness of Fit Index), values close to 1.00 being indicative of a good fit. Although a value of  $>.90$  was originally considered representative of a well-fitting model, a revised cutoff value close to .95 has recently been accepted (Byrne, 2009).

Figure I presents the estimated multi-dimensional model for King Faisal University innovations students' innovations, using the data from 200 samples. Items from each scale are assumed to load only on their respective latent variables. The overall fit of the 53-item structural model is summarized. The goodness-of-fit results indicate the hypothesized model is consistent with the data and innovation contributes strongly to achieve in this model ( $R^2 = .65$ ).

#### Discussion:

Through the results, this study was set out with the aim of evaluating the innovation learning at King Faisal University to achieving UNESCO goals for sustainable development. The result of the present study showed that innovation learning significantly contributed to achieving UNESCO goals explains 65% of the variance in innovation. In other words, the variation of 65% shows that

innovation strongly contributes to UNESCO goals for sustainable development. The findings lend support to the claim that innovation learning is important for effective education and high-quality outcomes. It helps in the assurance of the market of work and user needs.

This study produces results, which are consistent with the finding of other previous studies on sustainable development (Eubanks, 2004; Griffing 2002; Chase, 2001, Marrapodi, 2003).

However, literature reviews have given more emphasis on Goals of (2030) vision it is an effort to promote educational, social, economic and cultural progress for Saudi society compared to factors that contribute to (UNESCO) goals for sustainable development at King Faisal University. (Borman & Rachuba, 2001). By focusing on innovation, we can recognize the potential each student has. Furthermore, creativity can function as innate drives to achieve self-actualization, increased motivational energy to innovation, and sustainable development among students of King Faisal University (Holmes, 2006; Thomson, 2005).

The learning of innovation approach in the Department of Art Education would certainly assist in achieving UNESCO goals for sustainable development, but that has to be within the stipulated market of work and user needs. The whole creation stands to gain more through the activities of innovative artists.

#### Conclusion:

This study has implications for educational and psychological practices, especially in evaluating the innovation learning at King Faisal University to achieving of UNESCO goals for sustainable development according to (2030) vision for the ministry of education, Saudi Arabia. Since the 53-item structure yields a valid and reliable structural model, the conception scale is, therefore, useful in conducting a diagnostic assessment of student innovations at King Faisal University. The findings of this study forward evidence that innovation learning helps to achieve UNESCO goals for sustainable development at King Faisal University. This research contributes to a greater understanding of effective education and high-quality outcomes, the promotion of effective planning and allocation of resources by objectives, and Assurance of the market of work and user needs. Which are crucial for achieving UNESCO goals for sustainable development. Future research should examine whether the present findings generalize to other samples and settings.

#### Abbreviations:

UNESCO: United Nations Educational, Scientific

and Cultural Organization.

### References:

1. Bryne, B.M. (2009). Structural equation modeling with AMOS: Basic concepts, applications, and programming. NY: Routledge Taylor & Francis Group.
2. Borman, G.D. & Rachuba, L.T. (2001). Academic success among poor and minority students: An analysis of competing models of school effects. Retrieved from ProQuest Digital Dissertations. (AAT 1413067).
3. Chase, M.W. (2001). Spirituality as an autogenic factor in African American Understanding the relationships among religion, health, and well-being. Retrieved from ProQuest Digital Dissertations. (AAT3009216).
4. Eubanks, A.C. (2006). God help me: How college students use religion/spirituality to cope with stress. Retrieved from ProQuest Digital Dissertations. (No.AAT1437508).
5. Feldhusen, J. F. (2002). "Creativity: the knowledge base and children." *High Ability Studies*, 13(2): 179-183.
6. Griffing, G.A. (2002). Creativity and religious orientation: An interactional study of psychological well-being. Retrieved from ProQuest Digital Dissertations. (No.AAT3042276).
7. Hashim, R. and Hussien, S. (2003). *The Teaching of Thinking in Malaysia*. IIUM Research Centre: Malaysia.
8. Holmes, K. (2006). Adolescent resilience: The influence of family relationships and their impact on resilient outcomes. Retrieved from ProQuest Digital Dissertations. (No.AAT3223401).
9. Johnson, B., & Andersen, A. D. (red.) (2012). *Learning, Innovation and Inclusive Development: New perspectives on economic development strategy and development aid*. Aalborg: Aalborg Universitetsforlag.
10. Marrapodi, J. (2003). *Critical Thinking and Creativity: An Overview and Comparison of the Theories*. A Paper Presented in Partial Fulfilment of the Requirements of ED7590 Critical Thinking and Adult Education.
11. Ministry of Education, Saudi Arabia, <https://www.moe.gov.sa/ar/Pages/vision2030.aspx>
12. OECD. (2016). *Innovating Education and Educating for Innovation: The Power of Digital Technologies and Skills*, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264265097-enhttp://www.oecd.org/education/cei/GEIS2016-Background-document.pdf>
13. Rebecca Winthrop, Eileen McGivney, Timothy P. Williams, and Priya Shankar. (2016). *Innovation and Technology to Accelerate Progress in Education Report to the International Commission on Financing Global Education Opportunity*, [https://www.brookings.edu/wpcontent/uploads/2017/02/global\\_20170223\\_innovation-and-technology.pdf](https://www.brookings.edu/wpcontent/uploads/2017/02/global_20170223_innovation-and-technology.pdf)
14. Spector, P.E. (1992). *Summated rating scale construction: An introduction*. Newbury Park, CA: SAGE Publication.
15. Thomson, C.W. (2005). *Fostering coping skills and resilience in home enteral nutrition consumers*. *Nutrition in clinical practice: Official Publication of American Society for Parenteral and Enteral Nutrition*. Dec; Vol. 21 (6), pp. 557-65.
16. United Nations Development Group. (2016). *Mainstreaming the 2030 Agenda for Sustainable Development. Reference Guide to UN Country Teams March 2017 Update*. <https://undg.org/wp-content/uploads/2017/03/UNDG-Mainstreaming-the-2030-Agenda-Reference-Guide-2017.pdf>