

For example, post-editing can be used to clarify terminological concepts and enhance appropriateness through the use of contextually suitable terms; to eliminate ambiguity and improve the accuracy of the source content; to simplify the source text by removing redundancies and repeated phrases to improve readability; and to refine the use of cohesive devices and tighten sentence and paragraph structure. In addition, the MQM framework can also assist translation learners and even developers of translation technologies in identifying the typical weaknesses of AI translation systems, enabling them to proactively avoid common pitfalls and improve output precision. Ultimately, this allows AI translation to better support human translation practices.

Furthermore, to fully harness the capabilities of large language models in culturally and politically sensitive translation tasks, future research may incorporate larger, domain-specific corpora for model fine-tuning. Such corpora should include comprehensive annotations for key terms, historical references, and nuanced rhetorical devices frequently found in red culture texts. By integrating contrastive analyses across multiple AI translation engines, researchers could also investigate whether domain adaptation methods or hybrid human-AI workflows best mitigate error severity. As the industry evolves, establishing targeted translator training programs and dynamic evaluation standards will remain vital for ensuring that AI-assisted translations uphold both linguistic fidelity and cultural authenticity.

## Funding

Graduate Innovation Project of Shanxi Normal University (Project No.: 2024XSY31); Philosophy and Social Sciences Planning Project of Shanxi Province (Project No.: 2024YB046)

## Disclosure statement

The author declares no conflict of interest.

## References

- [1] Okpor M, 2014, Machine Translation Approaches: Issues and Challenges. *International Journal of Computer Science Issues (IJCSI)*, 11(5): 159.
- [2] Moorkens J, Castilho S, Gaspari F, et al., 2018, Translation Quality Assessment. *Machine Translation: Technologies and Applications*, 1: 299.
- [3] Babych B, 2014, Automated MT Evaluation Metrics and Their Limitations. *Tradumàtica Tecnologies de la Traducció*, 2014(12): 464–470.
- [4] Putri T, 2019, An Analysis of Types and Causes of Translation Errors. *Etnolingual Journal*, 3(2): 93–103.
- [5] Lommel A, Burchardt A, Uszkoreit H, 2014, Multidimensional Quality Metrics (MQM): A Framework for Declaring and Describing Translation Quality Metrics. *German Research Center for Artificial Intelligence (DFKI)*, 2014: 455–463.
- [6] Burchardt A, 2013, Multidimensional Quality Metrics: A Flexible System for Assessing Translation Quality. *Proceedings of Translating and the Computer 35*, Aslib, London.
- [7] Li Y, Suzuki J, Morishita M, et al., 2024, MQM-Chat: Multidimensional Quality Metrics for Chat Translation. *arXiv preprint: 2408.16390*.
- [8] Peng K, Ding L, Zhong Q, et al., 2023, Towards Making the Most of ChatGPT for Machine Translation. *arXiv*

preprint: 2303.13780.

- [9] Salvagno M, Taccone F, Gerli A, 2023, Can Artificial Intelligence Help for Scientific Writing? *Critical Care*, 27(1): 75.
- [10] Thorp H, 2023, ChatGPT Is Fun, but Not an Author. *Science*, 379(6630): 313–313.
- [11] Wu J, Yang S, Zhan R, et al., 2025, A Survey on LLM-Generated Text Detection: Necessity, Methods, and Future Directions. *Computational Linguistics*, 2025: 1–66.
- [12] Grimm D, Lee Y, Hu K, et al., 2024, The Utility of ChatGPT as a Generative Medical Translator. *European Archives of Oto-Rhino-Laryngology*, 2024: 1–5.
- [13] Alm A, Watanabe Y, 2023, Integrating ChatGPT in Language Education: A Freirean Perspective. *Iranian Journal of Language Teaching Research*, 11(3 Special Issue): 19–30.
- [14] Athanassopoulos S, Manoli P, Gouvi M, et al., 2023, The Use of ChatGPT as a Learning Tool to Improve Foreign Language Writing in a Multilingual and Multicultural Classroom. *Advances in Mobile Learning Educational Research*, 3(2): 818–824.
- [15] Lommel A, Burchardt A, Popović M, et al., 2014, Using a New Analytic Measure for the Annotation and Analysis of MT Errors on Real Data. *Proceedings of the 17th Annual Conference of the European Association for Machine Translation*, 2014: 165–172.
- [16] Lommel A, Gladkoff S, Melby A, et al., 2024, The Multi-Range Theory of Translation Quality Measurement: MQM Scoring Models and Statistical Quality Control. *arXiv preprint: 2405.16969*.
- [17] Freitag M, Foster G, Grangier D, et al., 2021, Experts, Errors, and Context: A Large-Scale Study of Human Evaluation for Machine Translation. *Transactions of the Association for Computational Linguistics*, 9: 1460–147.
- [18] Laurer M, Atteveldt W, Casas A, et al., 2023, Lowering the Language Barrier: Investigating Deep Transfer Learning and Machine Translation for Multilingual Analyses of Political Texts. *Computational Communication Research*, 5(2): 1.
- [19] Jiao H, Peng B, Zong L, et al., 2024, Gradable ChatGPT Translation Evaluation. *arXiv preprint: 2401.09984*.
- [20] Guofu X, Jieli X, 2025, Theoretical Interpretation and Practical Path of Red Culture Empowering the Consolidation of the Awareness of the Chinese National Community. *Journal of Sociology and Education (JSE)*, 1(1): 44–53.
- [21] Gao Y, Wang R, Hou F, 2023, Unleashing the Power of ChatGPT for Translation: An Empirical Study. *arXiv preprint: 2304.02182*.
- [22] Jiao W, Wang W, Huang J, et al., 2023, Is ChatGPT a Good Translator? Yes with GPT-4 as the Engine. *arXiv preprint: 2301.08745*.

**Publisher's note**

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

# “What is Design?” An Open-Ended Inquiry Among Design Students

Tadiboina Samantha Kumar\*, P Lakshmi Prasanna, Srinivas Daketi, Ramesh Srikonda

School of Planning and Architecture, Vijayawada, India

*\*Corresponding author: Tadiboina Samantha Kumar, bobby9642724212@gmail.com*

**Copyright:** © 2025 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

**Abstract:** An elementary question seems to appear quite incessantly on experience, both as a design student and practicing pedagogue of design: What is design? This often resurfaced during conversation with fellow students, drawing some uncertainty on how to approach and define design. These uncertainties can limit the scope through which students might fully engage with the design process, and hence, their creative scope in design teaching and learning might be limited. Despite vast amounts of research showing professional design views, very little thought has been given to how students perceive the term ‘design’ within the umbrella of school education. Unless a window to such insight is opened, design teaching methods cannot be improved. This research explores the way design students conceptualize the word “design” through an open-ended inquiry that understands their views, challenges, and influences. Qualitative methods such as interviews and thematic analysis are used to grasp common themes and divergent views and shape the understanding of design by the students. Findings will prove useful in understanding how design is taught within academic institutions, and they contribute toward excellence in design pedagogy and curriculum development. The paper demonstrated the need to fill gaps amongst the students to be done by a more structured form of teaching design students. Findings can form interesting follow-up research on curriculum development improvements and the subsequent long-term effects on design learning.

**Keywords:** Curriculum development; Design pedagogy; Divergent views; Understanding design; Student perspectives; SPA Vijayawada; Open-ended inquiry

**Online publication:** April 28, 2025

## 1. Introduction

The question of the nature of design is one that is perennial in the paradigm of design education. By the end of this process, students often become confused over an elemental uncertainty about what design really encompasses. This confusion is compounded by the unique characteristics and values of the School of Planning and Architecture Vijayawada, which influence student perspectives in distinct ways. On that basis, this study attempts to open up the dialogue on student understanding, which helps establish the issues that students face and the conceptual frameworks used to contribute towards improving design pedagogy. Design pedagogy is

broad and fluid, embracing a wide scope of creative fields: architecture, product, graphic, industrial, interior, and interaction design. Knowing how design students understand the founding question, “What is design?” can reveal information about how they experience their education and development as students.

## **2. Background**

Design has come to be defined in many disciplines, cultural contexts, and technological advances, but established definitions remain, and importantly, a missing element is an understanding of how design students understand what design is in a learning environment. Out of the extant literature, student voices have been underrepresented. Broadly speaking, most literature lacks professional points of view. This paper bridges that gap by concentrating on the results of students of the School of Planning and Architecture Vijayawada, while critically analyzing their knowledge. This is against the context of design through different disciplines contemporary frameworks and previous studies. Understanding such perspectives is crucial to developing pedagogical practices and to making sure that design education remains relevant to what students see and experience.

### **2.1. Aim and objectives**

The present study inquires into the question “What is design?” through an open-ended inquiry among students in the School of Planning and Architecture Vijayawada. The particular interest in this study is:

- (1) To gather different definitions and interpretations of design by students.
- (2) To examine the universal trends as well as the divergent views, which are also the product of the responses given by the students.
- (3) To study the potential implications that these findings carry with them for design education, pedagogy and design curriculum design.

Each of the above steps leads to the former directly as it provides insight into a student’s perception that can fill teaching methods and curricula with sensitivity to the needs prevalent in modern design education.

### **2.2. Scope and limitations**

This study would focus particularly on design students from the School of Planning and Architecture Vijayawada, at the undergraduate as well as at the postgraduate level. Even though this study is designed to produce a cross-section of views, it may not be comprehensive enough to capture all of the viewpoints of design students since there are too many cultural, contextual, and institutional factors that make a student’s view on design unique. Recruitment problems and biased self-reporting are also potential hazards with this study. Since reliance is placed on the collection of qualitative data, there is a threat to subjectivity. This is likely to be surmountable through rigorous methods of analyzing and validating the data. Future studies can be extended to include other institutions and may have implications for other educational settings.

### **2.3. Understand with a 5W 1H inquiry**

The scope and clarity of the study have been framed using a 5Ws + 1H approach, as outlined in **Table 1**, to provide a structured understanding of the research context.



**Table 1.** 5Ws + 1H Matrix Table for more simple understanding of the topic

Element	Details
Who?	Students of the School of Planning and Architecture Vijayawada.
What?	Understanding students' perceptions and experiences on the question "What is design?"
Where?	This study will be carried out at the School of Planning and Architecture Vijayawada. Institute of National Importance, Ministry of Education, Government of India.
When?	It will be carried out in the ongoing running odd semester, 2024.
Why?	Fill the gap in understanding how students think about design with supporting educators in enhancing their teaching methods.
How?	Students will respond to an open-ended question through Google Forms. Responses are analyzed for common themes then cross-checked to validate with participants.

5Ws + 1H Matrix Table are the six basic questions that ask about matters relating to the selected topic. Answering them is going to prove to be very useful for understanding the subject matter. The man who created 5Ws Sakichi Toyoda (1867–1930) invented 5Ws and applied it to Toyota which he established.

## 2.4. Theoretical background

There are plenty of studies about design. Cross, from the design studies tradition and focusing on the ability of design, argues that major features of design include resolving ill-defined problems, adopting solution-focusing strategies, employing abductive/productive/appositional thinking, and using non-verbal, graphic/spatial modelling media, as described by the complexities of cognitive processes present in design <sup>[1]</sup>. According to noted design theorist J. Heskett, Design is when designers design a design to produce a design, a statement that emphasizes the recursive nature of design processes as well as the complexities one encounters in finding the meaning of the term in different contexts of usage <sup>[2]</sup>.

Dr. Per Galle, member of the Royal Danish Academy of Architecture Design Conservation in the Department of Architecture and Design, defines design as the act of creatively proposing an idea, so as to enable yourself or others to make an artifact according to the idea, insisting on creativity in developing artifacts <sup>[3]</sup>. Cohering with this ideal, influential designer and educator Victor Papanek submitted in Design for the Real World that Design is the conscious effort to impose meaningful order, designifying responsible designers should consider the social and environmental impacts of the designer's work, not only as a responsibility to design but as a means to create positive alteration <sup>[4]</sup>.

A philosopher, named Risto Hilpinen, who has done a great amount of work on artifacts, articulates that an artifact is an object (not necessarily material) that has been intentionally made or produced for a certain purpose, which frames design as a deliberate act of creation <sup>[5]</sup>. According to Don Norman, one of the founders of user-centred design, Design is a process of creating an object or service that solves a problem, and it is all about usability and user experience while designing <sup>[6]</sup>.

The most prominent academic in design and planning, Peter G. Rowe, defines it as the synthesis of knowledge in a form that can be made and used, such that design is not only aesthetic but also incorporates various forms of knowledge to produce functional artifacts <sup>[7]</sup>. Co-founder of IDEO and one of the pioneers of interaction design, Bill Moggridge, states that design is the creation of a plan or convention for the construction of an object or a system, reflecting the systematic approach that, by nature, exists in the design process <sup>[8]</sup>.

Richard Buchanan highly reputed figure in design studies and philosophy-says that design is the human

capacity to shape and make artifacts that are meaningful within specific contexts, integrating practical and theoretical knowledge in the process of design. Dieter Rams, Braun's leading designer between 1962 and 1995, shares an opinion that a good design should be innovative; make a product useful, aesthetic, understandable; good design is unobtrusive, honest and long-lasting, thought through to the last detail, ecologically friendly. Rams' main thesis is that good design is as little design as possible <sup>[9]</sup>.

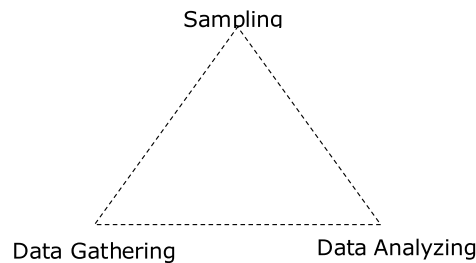
Marina Pankina is a Doctor of Cultural Studies, Professor, Chair of Cultural Studies and Design, Ural Federal University, Yekaterinburg, Russia, who described Design as a type of projecting and creative practice that appeared simultaneously with the beginning of mass production. Its projecting function is based on the need to solve a problem, to open new opportunities to organize people's everyday life, and to satisfy their needs <sup>[10]</sup>. What is more important here, not an object but a living space for human beings, the realization of their needs and creative ideas. Design isn't only a creation of material objects of varying shapes and sizes. It is, according to the American designer and anthropologist Viktor Papanek, conscious and intuitive efforts to establish a meaningful order <sup>[11]</sup>. Some of the landmark qualitative research and surveys recently conducted synthesize the most critical findings about design pedagogy in terms of explorations on student perspectives, conceptual diversity, and educational influence that define these readings.

Semi-structured interviews were performed with industrial design students, as Ulasan et al. reported, to find the conceptual foundations of the ability to design <sup>[12]</sup>. The results can be of great use in revealing how the students perceive and develop their design capabilities at entire stage of their education and amplify thematic analysis, which makes it possible to understand the patterns within the constructive learning experience that contribute to the emerging understanding of design. Similar in approach, Baha et al. also report an instrumental case study where how the match of personal and professional interest drives the articulation of students' personal principles and visions of "good design," further gets integrated with academic and professional practice <sup>[13]</sup>. Corazzo's phenomenographic analysis explained the different conceptions students of graphic design held about their discipline <sup>[14]</sup>. The paper finds a range of interpretations, viewing design as an application of skill to understanding it as a transformative practice that reflects the wide scope of challenges designers and designers in training face nowadays. Such analysis provides a starting point for thinking about how novel curriculum models might better accommodate the range of interpretations students are likely to have. Gray, among others, has developed research issues on how strategies and conditions in studios can influence design education <sup>[15]</sup>. Results suggest that some activities-better still, collaborative works, critiques, and mentorship-confer a more notable influence on how students learn as well as their perceptions of design. Brunner pointed out the increased usage of digital tools in design thinking and recommended that curricula be advanced to reflect better integration with technology to align more with existing industry conduct <sup>[16]</sup>. Together, the studies will give attention to what is required in qualitative methods of design education research, like interviews and phenomenographic analyses. They express a holistic view of the differences brought by educational contexts and reflective practice, identity, and development in the interpretations and experiences of design students. These will enable educators to more radically tailor the alignment of curriculum to shifting student views and prepare them for the complexities of the design professions suitably.

### 3. Methodology

The primary approach used to analyze the qualitative data in this research is thematic analysis. According to Braun et al., thematic analysis is a method for "identifying, analyzing and reporting patterns (themes) within

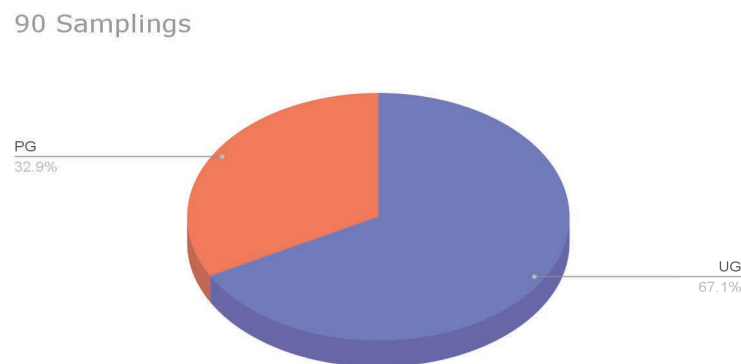
data”<sup>[17]</sup>. With this method, there will be an in-depth exploration that will be conducted with the insights acquired from the participants about the meaning they give to design. The research process is visually summarized in **Figure 1**, which illustrates the stages of sampling, data gathering, and analysis.



**Figure 1. Representation of Methodology from the above text by the author.**

The thematic analysis includes the following significant steps: Attride-Stirling describes six steps for the generation of thematic networks: “Code material, identify themes, construct thematic networks, describe and explore thematic networks, interpret patterns”<sup>[18]</sup>. Thomas et al., another author, describe the three stages of the process: free line-by-line coding of primary study findings, organization of these “free codes” into related areas that will construct “descriptive themes,” and development of “analytical themes”<sup>[19]</sup>. In that, he proposes a six-step process: “Familiarizing yourself with the data, generating initial codes, identifying themes, constructing thematic networks, integration and interpretation”<sup>[20]</sup>.

Despite differences in terms and number of steps by authors, thematic analysis remains the same in its core: it codes data and categorizes the codes into inclusive themes that give an overall view of the subject. In this regard, any segment of the data that points out “what is designed” will be labelled with an initial code. The initial codes will then be sorted into subsets and, in turn, organized into sets, eventually leading to wider themes. The distribution of samples from undergraduate and postgraduate students is illustrated in **Figure 2**.



**Figure 2. Representation of Samplings from UG and PG.**

The process of categorizing is based mainly on the establishment of similarities of meanings and logical relations. Between the elements. These relations and similarities, once established, come under In other words, one level higher. They are classified on the basis of their cores rather than boundaries.

## 4. Process and findings

### 4.1. Initial codes

Following the procedures, after getting oriented with the data, from the data 90 initial codes are generated from the definitions provided by the students. A few of the initial codes are given below for easy reference and the rest are not included here as that would be too many. A few examples of the initial codes derived from student responses are listed in **Table 2**, representing key themes in their definitions of design.

**Table 2.** Initial codes generated from the samples

	Design definitions from the students (Samples)	Initial codes
1	Use of at least one shape or curve, or pattern. Sometimes, design gives an impression of what an existing structure looks like.	Aesthetic Appeal
2	Your feeling is putting in action	User-Centered Design
3	Design is a solution that is aesthetically pleasing and functional; it's about making things feel right, usable, and meaningful.	Functionality
4	The process of planning and creating objects	Creative Process
5	Design is the way of organizing in an aesthetically appealing way of anything useful. The design becomes crucial context because it affects the product usability or the experience of service or the way something is exhibited.	Contextual Relevance
6	Design makes our boring common aspects of daily used products by adding characteristic features and needed alterations required by the specific user. It also is the means by which economical, environmental, and social sustainability can be attained.	Sustainability
7	Design is what the mind resonates with.	Imagination and Reality
8	Design is like a combination of elements in any form; it is created, executed, and used in different aspects.	Integration of Elements
9	It is a way you compose something according to your needs and are backed up with scientific methods and practicality.	Planning and Organization
10	Art, science, and functionality.	Interdisciplinary Nature
11	Design is a creative process that entails organizing and producing environments, systems, or products to meet demands and solve issues.	Creative Process
12	Design is a process involving the stakeholders and nature as a whole part and not separating users and nature.	Holistic Perspective
13	Creative way to solve problems.	Problem Solving
14	Something curated for usage.	Curatorial Approach
15	For me, it's a creation of something by keeping in mind the end user and crafting the experience for them through meaningful product. Design is a thought in which we craft our experience.	User-Centered Design
16	It's a thing that gives uniqueness or special structure to something; sometimes it's a need for that, or sometimes it is to convey a message.	Expressive Communication
17	Anything that is for comfort and aesthetics.	Aesthetic Appeal

### 4.2. Subsets

From the 90 initial codes, 08 subsets and other subsets have one code each based on similarities of meanings and logical relations. The initial codes were grouped based on thematic similarities, resulting in the subsets shown in **Table 3**. The subsets are as follows.

**Table 3.** Subsets generated from the initial codes with the count

	Subset	Codes	Count
1	Creative Process	Creative Process, Exploration and Innovation, Everyday Practice	12
2	User-Centered Design	User-Centered Design	7
3	Aesthetic Appeal	Aesthetic Appeal	6
4	Problem Solving	Problem Solving	8
5	Subjectivity	Subjectivity	5
6	Functionality	Functionality	3
7	Creative Expression	Creative Expression	3
8	Planning and Organization	Planning and Organization	2
9	Interdisciplinary Nature	Interdisciplinary Nature	2
10	Integration of Elements	Integration of Elements	1
11	Contextual Relevance	Contextual Relevance	1
12	Sustainability	Sustainability	1
13	Imagination and Reality	Imagination and Reality	1
14	Curatorial Approach	Curatorial Approach	1
15	Expressive Communication	Expressive Communication	1
16	Holistic Perspective	Holistic Perspective	1
17	Evolving Solutions	Evolving Solutions	1
18	Universal Design	Universal Design	1
19	Tangible Solutions	Tangible Solutions	1
20	Empathetic Design	Empathetic Design	1
21	Comprehensive Design	Comprehensive Design	1
22	Convenience	Convenience	1
23	Principles and Regulations	Principles and Regulations	1
24	Versatility and Productivity	Versatility and Productivity	1
25	Improvement	Improvement	1
26	Process Orientation	Process Orientation	1
27	Planning and Purpose	Planning and Purpose	1
28	Functional Analysis	Functional Analysis	1

**Figure 3** shows the distribution of the 28 subsets, derived from the initial codes, with each subset reflecting thematic groupings as shown in **Table 3**.



## Subsets Percentage

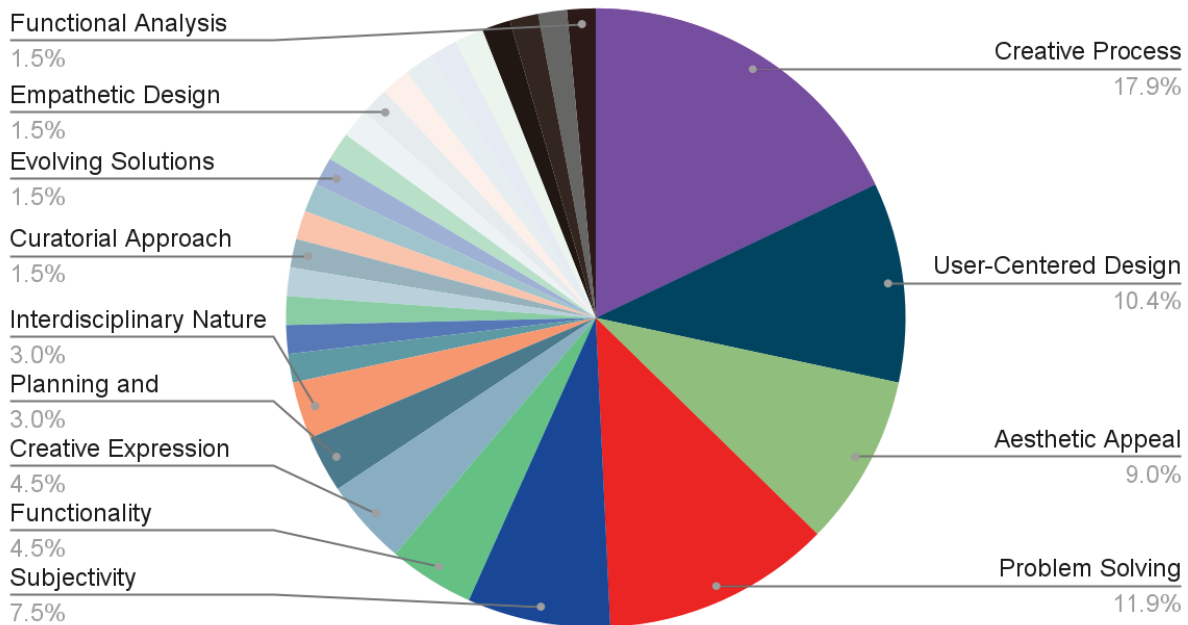


Figure 3. 28 subsets percentage from initial codes.

### 4.3. Observation

The analysis of student perspectives on design definitions reveals that only 40% of students possess a clear understanding of design, with problem-solving recognized by merely 12%. In contrast, 18% acknowledge the significance of the creative process, while user-centered design is noted by only 10%. Other concepts, such as subjectivity, functionality, creative expression, interdisciplinary approaches, and planning, contribute to the remaining understanding. It can be observed that problem solving has surprisingly constituted a very small proportion, that of 12%, in the articulations of students. This reflects a gap between the central place problem-solving occupies in design and the way students see it functioning in the study of design. Ideally, problem-solving should form a prominent constituent in design study, reflecting its centrality in defining what design is all about. This low recognition indicates that students do not understand the value of solving issues through design, which is a core principle of the discipline.

## 5. Hypothesis testing framework

Hypothesis testing is a statistical technique whereby inferences are made or conclusions are drawn regarding a population based on sample data. It allows one to conclude whether or not there is sufficient evidence for the rejection of a proposed assumption, called the null hypothesis ( $H_0$ ), in favour of some alternative, the alternative hypothesis ( $H_a$ )<sup>[21]</sup>.

Based on observations, we are particularly interested in finding out if there is indeed a significant gap between whether or not students recognise problem-solving in design versus its expected prominence.

(1) Objective: To test whether the observed proportion of students (12%) who recognize problem-solving as

a core element of design differs significantly from the hypothesized ideal proportion.

- (2) Extracts accentuating problem solving in design: From **Table 4**, we can pull out the statements or definitions that directly or indirectly refer to problem-solving as a core aspect of design.

**Table 4.** Literature reference for expected proportion

1	Cross (1990)	“Major features of design include resolving ill-defined problems.” State problem-solving explicitly.
2	Don Norman (2013)	“Design is a process of creating an object or service that solves a problem.” State problem-solving explicitly.
3	Marina Pankina (2020)	“Design’s projecting function is based on the need to solve a problem.” Directly refers to the solving of a problem.
4	Victor Papanek (1985)	“Design is the conscious effort to impose meaningful order.” Makes the implication of problem-solving as part of responsible design implicit
5	Peter G. Rowe (1991)	“Design is the synthesis of knowledge to produce functional artifacts.” Makes the implication of solving functionality problems implicit
6	Marina Pankina (2020, second mention)	“The need to open new opportunities to organize people’s everyday life and satisfy their needs.” The indirect connotation is problem-solving for satisfying needs.
Quantification of Problem-Solving References:		
Direct Mention: 3 sources (Cross, Norman, Pankina).		
Indirect Mention: 3 supplementary sources (Papanek, Rowe, Pankina).		
Total References to Problem-Solving: 6 out of 12 sources (50 %).		

The hypothesis test will determine whether the observed proportion of students recognizing problem-solving in design (12%) is significantly different from an ideal expected proportion (50%). The null hypothesis (H<sub>0</sub>) is that the observed proportion equals the ideal one; the alternative hypothesis (H<sub>a</sub>) suggests a significant difference. This is a one-sample Z-test for proportions because it compares an observed proportion to a standard value, size of the sample is sufficiently large. The significance level ( $\alpha$ ) is usually taken to be 0.05; the critical z-value is approximately  $\pm 1.96$ . The calculated z-score is approximately -7.21. Therefore, we reject the null hypothesis and accept the alternative hypothesis (H<sub>1</sub>). The test statistic, Z, is computed using the formula as follows (**Figure 4**)<sup>[22]</sup>:

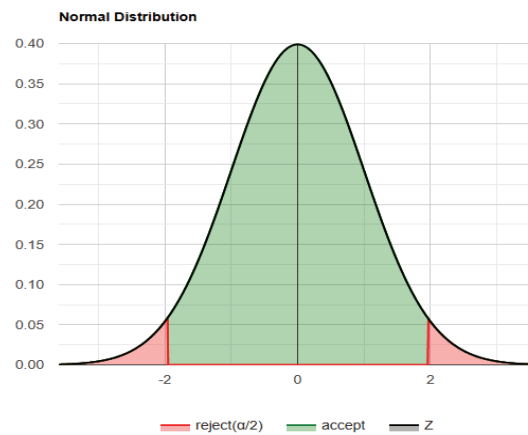
$$Z = \frac{\hat{P} - P_0}{\sqrt{\frac{P_0(1-P_0)}{n}}}$$

Where,

$\hat{P}$  is the observed proportion (0.12)

$P_0$  is the expected proportion (0.50)

and n is the sample size (90).



**Figure 4. Significance level of a hypothesis test.**

## 6. Conclusion

With results from the hypothesis test, we can conclude that indeed there is a difference between the perception of design as problem-solving with that of the perception presented in existing literature with the sample of design students. In this study, 12% of design students (of a sample size of 90) rated problem-solving as a key part of design. This differs significantly from the 50% proportion suggested in the literature, which implies a much broader, perhaps more conventional, recognition of problem-solving as central to the process of design. Through a z-test, the calculated z-score is -7.21, which is considerably greater than the critical z-value of  $\pm 1.96$ . This resulted in a p-value much smaller than 0.05, leading us to reject the null hypothesis ( $H_0$ ) and accept the alternative hypothesis ( $H_1$ ): that there is a significant difference between the two proportions.

This study, therefore, concludes that the perception of design as problem-solving among the sample of design students is significantly lower than what is suggested by the literature. This finding serves to highlight the need for further exploration into how design students conceptualize the role of problem-solving in their practice and suggests potential implications for design education and pedagogy. Results in this study highlight the contextual basis of establishing design thinking, using the specific learning environments and the cultures prevailing among the students, which are often more contextualized and nuanced than typical or broad conceptualizations of the design process found in the literature.

## Disclosure statement

The authors declare no conflict of interest.

## References

- [1] Cross N, 1990, The Nature and Nurture of Design Ability. *Design Studies*, 11(3): 127–140.
- [2] Heskett J, 2011, *Design: A Very Short Introduction*, Oxford University Press, Oxford.
- [3] Galle P, 2011, Foundational and Instrumental Design Theory. *The MIT Press*, 27(4): 81–94.
- [4] Papanek V, 1985, *Design for the Real World: Human Ecology and Social Change*, Academy Chicago, Chicago.
- [5] Hilpinen R, 2008, On Artifacts and Works of Art. *Theoria*, 58: 58–82.

- [6] Norman D, 2013, *The Design of Everyday Things*, Basic Books, New York.
- [7] Rowe P, 1991, *Design Thinking*, MIT Press, Cambridge.
- [8] Moggridge B, 2007, *Designing Interactions*, MIT Press, Cambridge.
- [9] ReadyMag, 2019, Rams Dieter: 10 Principles for Good Design, visited August 20, 2019, <https://readymag.com/shuffle/dieter-rams/>
- [10] Pankina M, 2020, Axiology and Praxeology of Design Thinking. *KnE Social Sciences*, 4(11): 284–293.
- [11] Papanek V, 1977, *Design for the Real World: Human Ecology and Social Change*, Paladin, St. Albans.
- [12] Ulasan U, Turan A, 2016, Investigating Conceptual Foundations of Design Ability: An Analysis Through the Expressions of the Experiencing Mind. *Systems & Design: Beyond Processes and Thinking*, Valencia.
- [13] Baha E, Koch M, Sturkenboom N, et al., 2020, Why Am I Studying Design? DRS Biennial Conference Series, Design Research Society, United Kingdom.
- [14] Corazzo J, 2016, Graphic Design Students' Conceptions of the Discipline in an Era of Expanded Design. *Graphic Design Educators' Network Pedagogic Research Symposium*, Loughborough University.
- [15] Gray CM, 2013, Factors That Shape Design Thinking. *Design and Technology Education: An International Journal*, 18(3): 8–20.
- [16] Brunner L, 2007, Technology and Design Thinking: A Look at Interior Design Students' Conceptualizations. *Computer Science Education*.
- [17] Braun V, Clarke V, 2006, Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3(2): 77–101.
- [18] Attride-Stirling J, 2001, Thematic Networks: An Analytic Tool for Qualitative Research. *Qualitative Research*, 1(3): 385–405.
- [19] Thomas J, Harden A, 2008, Methods for the Thematic Synthesis of Qualitative Research in Systematic Reviews. *BMC Medical Research Methodology*, 8: 45.
- [20] Robson C, 2011, *Real World Research* (3rd ed.), Wiley, Chichester.
- [21] Wasserman L, 2013, *All of Statistics: A Concise Course in Statistical Inference*, Springer, New York.
- [22] Beyer A, 2021, *Introduction to Statistics for Psychology*, thesis, Chandler-Gilbert Community College.

**Publisher's note**

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

# A Study on the Cultivation of English Learning Interest of Art Students in Colleges and Universities

Bing Zhang\*

Nanning University, Nanning, Guangxi 530299, China

*\*Author to whom correspondence should be addressed.*

**Copyright:** © 2025 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

**Abstract:** With the development of globalization, people from all walks of life have higher and higher requirements for talents' English ability. College art students, as an important force for the communication of culture and art in the future, have good English ability to help them absorb the international frontier art concepts and promote Chinese culture and art to the world. Therefore, college art students need to learn English. As an important factor affecting students' learning quality, how to cultivate students' interest in English learning has become an important topic for English teachers of art majors to study. Based on this, this paper first analyzes the reasons for the lack of interest in English learning among art students in colleges and universities, and puts forward the corresponding training path, hoping to provide some reference.

**Keywords:** Universities; Art students; English; Interest in learning; Training path

**Online publication:** April 29, 2025

## 1. Introduction

In the tide of globalization, English as an international language, its importance is self-evident. However, in the learning process of college art students, English often becomes an insurmountable gap. The lack of interest in English learning among art students not only affects their academic performance but also may become a key factor restricting their international vision expansion and comprehensive quality improvement. Therefore, it is particularly important and urgent to explore ways to cultivate art students' interest in English learning.

## 2. An analysis of the reasons for the lack of interest in English learning among college art students

### 2.1. Weak English foundation

Before college art students enter college, due to the particularity of art major study, their time and energy are heavily invested in the training of artistic skills such as painting, music, and dance. Although this high-



intensity and specialized training mode lays a solid artistic foundation for them, it also sacrifices the learning of cultural courses, such as English, to a certain extent. In the growing process of art students, the status of cultural courses is often marginalized, especially in the high school stage, art students' English courses are often not systematic and in-depth, resulting in their English foundation being generally weak <sup>[1]</sup>. After entering the university, art students often feel powerless in the face of more complex and diversified English learning requirements. Their vocabulary is insufficient, which makes it difficult for them to cope with the extensive reading and deep understanding requirements in college English courses; Their lack of grammar knowledge makes it difficult for them to construct and interpret complex sentence structures. This weak foundation not only affects their learning efficiency in class, but also makes them easily frustrated and frustrated when facing new English knowledge and challenges, and then gradually lose their interest and confidence in English learning <sup>[2]</sup>.

## **2.2. Single teaching method**

At present, English teaching in many colleges and universities still follows the traditional teacher-centered teaching mode. In this mode, the teacher becomes the absolute protagonist of the class, while the students are in the passive position of receiving knowledge. This one-way way of imparting knowledge lacks the necessary interactivity and interest, which makes it difficult to attract the attention of art students, let alone stimulate their enthusiasm for learning. For art students with strong creativity and imagination, they are eager to have more participation rights and discourse rights in class. However, in the traditional teaching mode, their demand is often ignored. For example, in the teaching of English reading, teachers often simply explain the passage sentence by sentence, requiring students to memorize vocabulary and grammar rules, and lacking the exploration and discussion of the deep meaning of the passage. This mechanized way of learning not only fails to make art students gain the fun of learning, but may make them feel bored, and then have a mood of weariness <sup>[3-5]</sup>.

## **2.3. The teaching content is out of line with the profession**

The content design of college English teaching materials often attaches too much importance to the generality and universality of language, but ignores the relevance to the professional learning of art students. For art students, they want to see the actual connection with their major in English learning. However, the existing English teaching materials often lack the professional vocabulary in the field of art, the English introduction of artworks, and the relevant content of international art exchanges, which makes art students feel confused and helpless in the process of English learning. The lack of English learning content closely related to their major makes art students lack a clear sense of goal and motivation in English learning <sup>[6]</sup>. They are unable to integrate English learning with their artistic pursuits, and fail to see the direct help of English learning for their future development. This disconnect between content and majors not only reduces art students' interest in learning but may also lead to their misunderstanding and neglect of English learning.

## **2.4. The campus English atmosphere is weak**

The campus English learning atmosphere of colleges and universities is very important to stimulate students' interest and motivation in learning. However, the atmosphere of campus English in many colleges and universities is not strong, and there are few opportunities for English communication and practice. Activities such as English corners and English clubs are often not carried out frequently enough and the number of

participants is limited, which cannot meet the diversified needs of art students for English learning. In addition, signs and publicity boards on campus are mostly in Chinese and lack English signs and content. This makes art students less exposed to English in daily life and unable to feel the practicality and interest of English in daily life. This double lack of environment and opportunity not only limits the breadth and depth of art students' English learning, but also may lead to their neglect and rejection of English learning <sup>[7,8]</sup>.

### **3. The cultivation of interest in English learning for art students in colleges and universities**

#### **3.1. Understand the basis of students and implement stratified teaching**

There are differences in the English basis of each art student, which requires teachers to fully understand the actual situation of students in the teaching process and implement stratified teaching. In this regard, first of all, teachers should fully understand students' English foundation through various ways. On the one hand, students' vocabulary, grammar mastery, listening, speaking, reading, and writing ability can be comprehensively assessed through entrance tests, classroom performance and homework completion <sup>[9]</sup>. On the other hand, we can have in-depth communication with students to understand their difficulties in English learning and the learning goals they expect to achieve. After fully understanding the basis of students, teachers should classify students into different levels according to their English level, learning ability and learning goals. For students with weak English foundation and relatively weak learning ability, the focus of teaching at this level should be on the consolidation of basic knowledge and the training of basic skills. Teachers should slow down the teaching process, adopt more detailed and patient teaching methods, help students consolidate the foundation of vocabulary and grammar, and gradually improve their listening, speaking, reading and writing ability. For students with a good English foundation and strong learning ability, besides consolidating basic knowledge, they should also pay attention to expanding their scope of knowledge and cultivating their comprehensive language application ability. They can be provided with more challenging learning tasks, such as English academic paper reading, English writing competitions, etc., to stimulate their learning potential. In the teaching process, teachers should formulate personalized teaching objectives and teaching content according to the characteristics and needs of students at different levels. For example, for students with a weak foundation, the teaching goal may be to master basic English vocabulary and grammar knowledge, to be able to carry out simple daily communication, and to read short English articles. The teaching content focuses on the explanation and practice of basic vocabulary and simple sentence patterns. For students with a good foundation, the teaching goal may be to have a strong, comprehensive English application ability, be able to communicate fluently in English, and read and write complex English articles. The teaching content can add some depth and breadth of English knowledge, such as an appreciation of English literary works, English business writing, etc. Stratified teaching is not static, but should be dynamically adjusted according to students' learning progress and actual performance. Therefore, teachers are expected to assess students on a regular basis to understand their progress and shortcomings in the learning process. For students who have made significant progress in the learning process, they can be adjusted to higher-level classes and given more challenging learning tasks to further stimulate their learning motivation. For students who have difficulties in learning, timely help and guidance should be given, and they should be adjusted to lower-level classes when necessary to ensure that they can keep up with the teaching progress and gradually improve their English level

<sup>[10]</sup>.

### **3.2. Enrich teaching methods and make learning more interesting**

Traditional teacher-centered teaching methods are difficult to stimulate art students' interest in learning. Therefore, teachers need to constantly enrich teaching methods to make English classes livelier and more interesting. First of all, as a kind of teaching method favored by students, the game teaching method can effectively activate the classroom and enhance students' learning interest. In English class, teachers can design a variety of English games, such as English word solitaire, English riddles, English role playing and so on. For example, in the English word solitaire, students need to say a new word according to the last letter of the word spoken by the previous student, which can not only help students consolidate their vocabulary, but also increase the interest of learning; In the English role playing game, students can simulate various real scenes, such as shopping, traveling, interviewing, etc., and improve their oral expression and practical use of English through role playing. Secondly, the situational teaching method can create a real language environment for students, so that students can learn and use English in situations. Teachers can make use of multimedia technology, such as pictures, videos, audio, etc., to present students with various vivid situations. When explaining the English knowledge related to tourism, the teacher can play a video of a beautiful tourist spot to make the students feel as if they were there. Then, the teacher can guide the students to describe the spot in English and discuss the experience and feelings of traveling. In this way, the students can feel the charm of English more directly and improve their interest in learning <sup>[11]</sup>. In addition, the group cooperative learning method can cultivate students' teamwork spirit and independent learning ability. Teachers can divide students into groups and let them work together to complete a learning task, such as English project planning, English drama performance, etc. In the process of group cooperative learning, students need to communicate with each other and cooperate to solve problems together. In the English project planning, team members need to work together to collect data, design plans, and write reports, etc. Through this process, students can not only improve their English level but also cultivate the ability of teamwork and innovative thinking.

### **3.3. Optimize the teaching content and highlight the professional characteristics**

In order to improve art students' interest in English learning, the content of English teaching should be closely combined with their major and highlight their professional characteristics. First of all, for students of different art majors, teachers should have a deep understanding of their professional characteristics and needs, and organically integrate English teaching content with professional knowledge. For example, for students majoring in music, the teaching content can add professional vocabulary in the field of music, such as instrument names, music genres, music terms, etc. The English introduction and appreciation of classical music works can be introduced, so that students can understand foreign music culture and improve their English level. For students majoring in fine arts, the teaching content can include English knowledge of art history and art criticism, so that students can express their understanding and appreciation of artworks in English. Secondly, teachers can invite experts or foreign teachers in the field of art to give special lectures, so that students can understand the cutting-edge trends and development trends of international art. Experts or foreign teachers can bring the latest artistic ideas and works, and explain and analyze them in English, so that students can broaden their artistic horizons while learning English. Experts can introduce the latest art exhibitions and art activities in the world, so that students can understand the needs and development direction of the international art market. Foreign teachers can improve students' oral English expression ability and cross-cultural communication ability through interaction with students. In addition, teachers can also organize students to carry out English art practice activities, such as English drama performance and English art

creation <sup>[12-14]</sup>. In English drama performance, students can choose classic English drama works for rehearsal and performance, and improve their English listening and speaking ability and artistic expression through performance. In the creation of English artistic works, students can create poetry, painting, photography, and other works in English, combining English learning with artistic creation to cultivate their innovative ability and comprehensive literacy.

### **3.4. Carry out campus activities to create an English atmosphere**

A good campus English atmosphere can stimulate art students' interest in English learning. Schools should actively carry out various campus English activities to provide students with more opportunities to practice and use English. First of all, schools can hold English culture festivals regularly, during which they can organize various English activities, such as English speech contests, English singing contests, English movie dubbing contests, and so on. These activities can not only improve students' English level, but also enrich students' cultural life on campus. In the English speech competition, students need to express their opinions and ideas in English, and exercise their oral expression ability and thinking ability. In the English movie dubbing competition, students need to imitate the characters in the movie to do dubbing, improve their listening and speaking skills, and feel the charm of English movies <sup>[15]</sup>. Secondly, schools and teachers should actively encourage the establishment of English corners and English clubs to provide a platform for students to communicate and learn freely. On the one hand. In the English corner, students can communicate with foreign teachers, English teachers, and other students and share their learning experience and life experience. On the other hand, teachers can use English clubs to organize various English learning activities, such as English reading clubs, English writing groups, etc., so that students can learn and make progress together in interest groups. In addition, schools should set up English signs and publicity boards on campus, such as English signs in teaching buildings, libraries, canteens and other places; Display English learning materials and English cultural knowledge in the publicity column, and regularly update English learning methods, English stories, English song recommendations, etc., to attract students' attention and interest; In the corridor of the teaching building, you can also post some English aphorisms to encourage students to learn English so that students can contact English anytime and anywhere in daily life, to create a good English learning environment.

## **4. Conclusion**

To sum up, art students in colleges and universities, as a group of students with unique learning needs and interest preferences, generally have a low interest in English learning. Therefore, cultivating their interest in English learning is a systematic project, which needs the joint efforts of teachers, schools, and students. By understanding the basis of students, implementing stratified teaching, enriching teaching methods to increase learning interest, optimizing teaching content to highlight professional characteristics, and carrying out campus activities to create an English atmosphere, we can effectively stimulate art students' interest in English learning, improve their English level, and lay a solid foundation for their future development.

## **Disclosure statement**

The author declares no conflict of interest.



## Reference

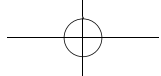
- [1] Fang N, Chen Z, Liu G, et al., 2023, A Study on the Emotional Engagement in English Learning Among University Students with Different Academic Backgrounds. *Journal of Shaoguan College*, 44(11): 21–25.
- [2] Cheng L, 2023, Reform of English Teaching for Art Majors in Colleges and Universities From the Perspective of ESP. *Journal of Sichuan Provincial Cadres Correspondence College*, 2023(3): 93–97.
- [3] Deng T, 2023, Research on the Blended Teaching Model of College English for Art Students in Colleges and Universities. *Proceedings of the Sixth Teaching Seminar of Guangdong Teachers' Continuing Education Association (V)*, Guangdong Teachers' Continuing Education Society: 3.
- [4] Ji L, 2022, Discussion on English Teaching Model for Art Majors in Colleges and Universities. *College English*, 2022(11): 37–39.
- [5] Liu S, 2021, Strategies for Cultivating College Students' Interest in English Learning. *Heilongjiang Science*, 12(21): 80–81.
- [6] Li F, 2021, Dynamic Process Reconstruction of College Art Students' English Learning Based on Ability Cultivation. *College English*, 2021(15): 20–21.
- [7] Guo N, 2020, The Application Effect of Multi-Dimensional Interactive Teaching Model in College English Teaching. *Curriculum Education Research*, 2020(40): 63–64.
- [8] Zhou C, 2019, The Main Strategies to Improve the Interest of Art Students in English Learning in Secondary Vocational Schools. *English Plaza*, 2019(12): 149–150.
- [9] Ma H, 2019, An Analysis on the Implementation Methods of College Teachers' Cultivation of College Students' Interest in English Learning. *Reading and Writing. Journal of Education and Teaching*, 16(10): 5–6.
- [10] Wei M, 2019, On Stimulating High School Art Students' Interest in English Learning. *New Wisdom*, 2019(1): 69 + 141.
- [11] Ren H, 2018, On the Innovation of English Teaching Methods for Art Students in Universities. *New West*, 2018(26): 152 + 164.
- [12] Zhu Y, 2017, Exploring Effective Approaches to Cultivate English Learning Interest Among High School Art Students. *Curriculum Education Research*, 2017(51): 146.
- [13] Gao P, 2017, Existing Problems and Countermeasures in English Teaching of Art Majors in Colleges and Universities. *Western Quality Education*, 3(22): 141.
- [14] He L, 2017, Discussion on the Strategies of English Interest Cultivation for Art Students. *College English*, 2017(47): 41.
- [15] Huang C, 2008, Strategies to Stimulate the Interest of Art Majors in English Learning. *Science and Education Journal (XXIV)*, 2008(36): 125.

### Publisher's note

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.







## Integrated Services Platform of International Scientific Cooperation

Innoscience Research (Malaysia), which is global market oriented, was founded in 2016. Innoscience Research focuses on services based on scientific research. By cooperating with universities and scientific institutes all over the world, it performs medical researches to benefit human beings and promotes the interdisciplinary and international exchanges among researchers.

Innoscience Research covers biology, chemistry, physics and many other disciplines. It mainly focuses on the improvement of human health. It aims to promote the cooperation, exploration and exchange among researchers from different countries. By establishing platforms, Innoscience integrates the demands from different fields to realize the combination of clinical research and basic research and to accelerate and deepen the international scientific cooperation.

### Cooperation Mode



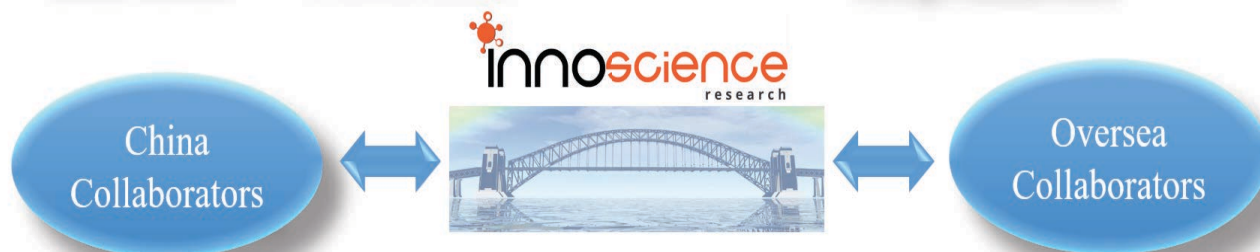
Clinical Workers



In-service Doctors



Foreign Researchers



Hospital



University



Scientific institutions

# OUR JOURNALS



The *Journal of Architectural Research and Development* is an international peer-reviewed and open access journal which is devoted to establish a bridge between theory and practice in the fields of architectural and design research, urban planning and built environment research.

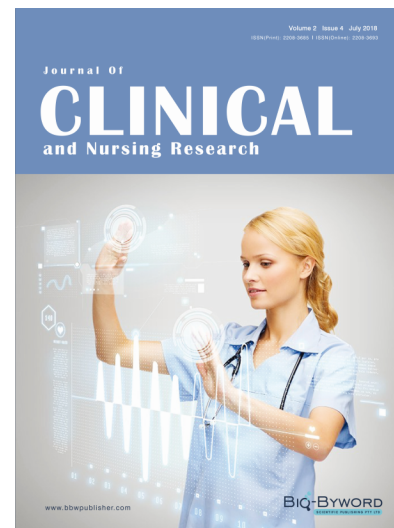
Topics covered but not limited to:

- Architectural design
- Architectural technology, including new technologies and energy saving technologies
- Architectural practice
- Urban planning
- Impacts of architecture on environment

*Journal of Clinical and Nursing Research (JCNR)* is an international, peer reviewed and open access journal that seeks to promote the development and exchange of knowledge which is directly relevant to all clinical and nursing research and practice. Articles which explore the meaning, prevention, treatment, outcome and impact of a high standard clinical and nursing practice and discipline are encouraged to be submitted as original article, review, case report, short communication and letters.

Topics covered by not limited to:

- Development of clinical and nursing research, evaluation, evidence-based practice and scientific enquiry
- Patients and family experiences of health care
- Clinical and nursing research to enhance patient safety and reduce harm to patients
- Ethics
- Clinical and Nursing history
- Medicine



*Journal of Electronic Research and Application* is an international, peer-reviewed and open access journal which publishes original articles, reviews, short communications, case studies and letters in the field of electronic research and application.

Topics covered but not limited to:

- Automation
- Circuit Analysis and Application
- Electric and Electronic Measurement Systems
- Electrical Engineering
- Electronic Materials
- Electronics and Communications Engineering
- Power Systems and Power Electronics
- Signal Processing
- Telecommunications Engineering
- Wireless and Mobile Communication

