

Identifying the Components of Design Thinking among Professors at Farhangian University of Tehran: A Student-Teacher Perspective

Maryam. Ebrahimpour ¹, Parvin. Samadi ^{2*}, Parvin. Ahmadi ³, Afsaneh. Naraghizadeh ⁴

¹ Ph.D. student of Curriculum of Department of Educational Administration and Planning, Faculty of Education and Psychology, Alzahra University, Tehran, Iran

² Professor of Department of Educational Administration and Planning, Faculty of Education and Psychology, Alzahra University, Tehran, Iran

³ Associate Professor of Department of Educational Administration and Planning, Faculty of Education and Psychology, Alzahra University, Tehran, Iran

⁴ Assistant Professor of Department of Educational Administration and Planning, Faculty of Education and Psychology, Alzahra University, Tehran, Iran

* Corresponding author email address: psamadi@alzahra.ac.ir

Article Info

Article type:

Original Research

How to cite this article:

Ebrahimpour, M., Samadi, P., Ahmadi, P., & Naraghizadeh, A. (2025). Identifying the Components of Design Thinking among Professors at Farhangian University of Tehran: A Student-Teacher Perspective. *Quarterly Journal of Research and Planning in Higher Education*, 31(3), 99-122.



© 2025 the authors. Published by Institute for Research and Planning in Higher Education (IRPHE), Tehran, Iran. This is an open access article under the terms of the Creative Commons Attribution 4.0 International (CC BY 4.0) License.

ABSTRACT

Professors are considered one of the inputs of the educational system and play a fundamental role in guiding vital teaching and learning processes. Therefore, the quality of the educational system is closely linked to the quality of its professors. Among the factors that seem to influence professors' ability to deliver high-quality teaching are the competencies of university professors. Hence, the present study aimed to identify the components of design thinking among professors at Farhangian University. This qualitative study employed a phenomenological approach. Participants in the research included student-teachers from Farhangian University in Tehran, selected using purposive sampling based on specific criteria. Data were collected through in-depth interviews, continuing until theoretical saturation was achieved. The findings were analyzed using qualitative content analysis. Through in-depth analysis of the interviews, 352 codes were extracted and categorized into 36 main categories. Finally, these main categories were grouped under 9 components: "Empathy and Human-Centricity," "Problem Definition," "Collaboration and Teamwork," "Risk-Taking," "Critical Questioning," "Creativity and Innovation," "Prototyping," "Optimism and Impact," and "Evaluation and Improvement." Based on the results, it is imperative for professors at Farhangian University, who play a significant role in enhancing the quality of education for our country's future teachers, and considering that teachers should be designers of learning experiences, to focus more on developing skills in empathy, participation and teamwork, creativity, problem-solving, fostering motivation and optimism, nurturing curiosity, and strengthening design thinking, which equips teachers with the ability to confront complex educational challenges.

Keywords: Professors, Design Thinking, Student-Teachers, Farhangian University.



Introduction

Faculty members constitute vital human capital for universities. Their professional competencies (Alipoor et al., 2024) critically contribute to institutional quality improvement. Attention to the educational quality of professors is crucial for achieving the goals of the higher education system, as they play a central role in the teaching-learning process (Kushi & Soltani, 2015). Since teaching and design are closely related, researchers emphasize that educational instructors should act as designers of learning experiences (Avsec & Ferksavec, 2022). In recent years, the higher education system has increasingly paid attention to the importance of design thinking. This attention stems from the need for instructors to develop flexibility skills and the ability to confront ambiguous situations in learners—skills that are considered essential for their future success (Lock & Scott, 2021). The competency of design thinking among faculty members represents an under-researched area in Iranian higher education that requires comprehensive study. The purpose of this study was to identify the components of design thinking among Professors at Farhangian University of Tehran from the perspective of student-teachers.

Methodology

The current research employs a qualitative phenomenological approach. The study's participants were student teachers from Farhangian University in Tehran, 23 of whom were selected through purposeful sampling using a criterion-based method. The selection criteria included: third and fourth-year undergraduate student teachers, diversity in fields of study (primary education, exceptional children, geography, history, physical education, and guidance and counseling), and willingness to participate in the research. Sampling continued until theoretical saturation was reached (with the 23rd person). Data were collected through in-depth interviews. The duration of the interviews ranged from 30 to 75 minutes. After obtaining participants' consent, the interviews were recorded, transcribed, and the data were analyzed using qualitative content analysis. To ensure the validity of the findings, researcher self-review, member checking, and peer review methods were used. Additionally, to assess the reliability of the findings, the retest reliability index (stability) was employed. The re-coding reliability coefficient obtained was 0.83, which indicates satisfactory reliability.

Findings

The analysis of the interviews led to the identification of 9 components, 36 main categories, and 74 sub-categories, by extracting 352 conceptual codes. The identified components included: empathy and human-centeredness, problem definition, collaboration and teamwork, risk-taking, critical questioning, creativity and innovation, prototyping, optimism and influence, and evaluation and improvement. Additionally, participants described concrete behavioral examples of professors in the teaching process, which led to the collection of positive and negative evidence related to each component.

Conclusion

The findings of this research, based on the opinions of student-teachers, indicate the need to strengthen design thinking components such as empathy, teamwork, and creativity in Farhangian University professors. Given the key role of these professors in training future teachers and the importance of designing learning experiences, it seems that the development of these skills can lead to a more effective confrontation with educational challenges. Although some research results indicate practical challenges in implementing these components, it is necessary for future research to investigate the professors' own views on the existing obstacles.

References

- Abbasi Kasani, H., Shams Mourkani, G., Seraji, F., & Rezaeizadeh, M. (2023). Pathology of formative assessment in the Iranian e-learning system: Phenomenological examination of professors' views. *Research in Teaching*, 11(2), 27-52. https://trj.uok.ac.ir/article_62814_en.html
- Abolhasani, Z., Dehghani, M., Javadipour, M., Salehi, K., & Mohamad Hasani, N. (2022). Design pattern for the implementation of work and technology curriculum based on design thinking in secondary school. *Training & Learning Researches*, 18(1), 33-52.

- https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://tlr.shahed.ac.ir/article_3537.html%3Fflang%3Den&ved=2ahUKEwiP-5LexaePAxWsj4kEHToaCQsQFnoECBkQAQ&usq=AOvVaw2aoXdbPCd06xUHOF7LrFTd
- Abolhasani, Z., Dehghani, M., Javadipour, M., Salehi, K., & Mohamad Hasani, N. (2022). An analysis of the role of design thinking in promoting the 21st-century skills: A systematic review, *Technology of Education Journal*, 16(1), 81-98. https://jte.sru.ac.ir/article_1647.html
- Abolhasani, Z., Dehghani, M., Javadipour, M., Salehi, K., & Mohamad Hasani, N. (2022). Analysis of Design Thinking Models and Identifying their Role and Dimensions: A Systematic Review, *Quarterly Journal of Educational Innovations*, 20(80), 7-34. https://noavaryedu.oerp.ir/article_142332.html?lang=en
- Ahmadi, S., Ahmadi, M. S., & Ramazani, A. (2021). Assessing the education quality of faculty members from students' viewpoint at Zanjan Farhangian University. *Educational Development of Jundishapur*, 11(4), 706-715. https://www.researchgate.net/profile/Abbas-Ramezani-3/publication/382336617_Assessing_the_Education_Quality_of_Faculty_Members_from_Students'_Viewpoint_at_Zanjan_Farhangian_University/links/67fb74dadf0e3f544f4107e4/Assessing-the-Education-Quality-of-Faculty-Members-from-Students-Viewpoint-at-Zanjan-Farhangian-University.pdf
- Akrami, Z. (2024). Designing and Validating the Model of Empowering Faculty Members to Encourage Students to Engage in Entrepreneurial Activities. *Quarterly Journal of Research and Planning in Higher Education*, 30(1), 58-77. <https://doi.org/10.61838/KMAN.IRPHE.30.1.4>
- Alipoor, F., Romiani, Y., & Yarahmadi, M. (2024). Developing and validating a recruitment model for faculty members at the University of Farhangian with emphasis on upstream documents: A mixed study. *Quarterly Journal of Research and Planning in Higher Education*, 29(4), 123-139. <https://doi.org/10.61838/KMAN.IRPHE.29.4.7>
- Arabi Juneghani, A. (2022). *Improving the performance and involvement of sixth grade students in mathematics and their attitude towards this lesson through collaborative prototyping of digital educational games with a design thinking approach*
- Avsec, S. (2021). *Design thinking to enhance transformative learning*. https://doi.org/10.1007/978-981-13-8759-3_16
- Avsec, S., & Ferik Savec, V. (2022). Mapping the relationships between self-directed learning and design thinking in pre-service science and technology teachers. *Sustainability*, 14(14), 8626. <https://doi.org/10.3390/su14148626>
- Beligatamulla, G. (2021). *Design thinking pedagogy: A phenomenographic study of design thinking teaching in the higher education context* https://eprints.qut.edu.au/210530/1/Gnanaharsha%20Beligatamulla_Beligatamulle%20Kankanamlage_Thesis.pdf
- Beligatamulla, G., Rieger, J., Franz, J., & Strickfaden, M. (2019). Making pedagogic sense of design thinking in the higher education context. *Open Education Studies*, 1(1), 91-105. <https://doi.org/10.1515/edu-2019-0026>
- Beverland, M. B., Wilner, S. J. S., & Micheli, P. (2015). Reconciling the tension between consistency and relevance: Design thinking as a mechanism for brand ambidexterity. *Journal of the Academy of Marketing Science*, 43(5), 589-609. <https://doi.org/10.1007/s11747-015-0443-8>
- Brown, T. (2008). Design thinking. *Harvard Business Review*, 86(6), 84-92. <https://designthinkingmeite.web.unc.edu/wp-content/uploads/sites/22337/2020/02/Tim-Brown-Design-Thinking.pdf>
- Carlgen, L., Rauth, I., & Elmquist, M. (2016). Framing design thinking: The concept in idea and enactment. *Creativity and Innovation Management*, 25(1), 38-57. <https://doi.org/10.1111/caim.12153>
- Carroll, M. P. (2014). Shoot for the moon! The mentors and the middle schoolers explore the intersection of design thinking and STEM. *Journal of Pre-College Engineering Education Research (J-PEER)*, 4(1). <https://doi.org/10.7771/2157-9288.1072>
- Creswell, J. W. (2014). *A concise introduction to mixed methods research*. SAGE publications. <https://us.sagepub.com/en-us/nam/a-concise-introduction-to-mixed-methods-research/book266037>
- Davis, B. M. (2010). Creativity & innovation in business 2010 teaching the application of design thinking to business. *Procedia - Social and Behavioral Sciences*, 2(4), 6532-6538. <https://doi.org/10.1016/j.sbspro.2010.04.062>
- Dosi, C., Rosati, F., & Vignoli, M. (2018). Measuring design thinking mindset. In *DS 92: Proceedings of the DESIGN 2018 15th International Design Conference*, 1991-2002. <https://doi.org/10.21278/idc.2018.0493>
- Drews, C. (2009). Unleashing the full potential of design thinking as a business method. *Design Management Review*, 20(3), 38-44. <https://doi.org/10.1111/j.1948-7169.2009.00020.x>
- Efeoglu, A., Møller, C., Sérié, M., & Boer, H. (2013). Design thinking: characteristics and promises. *14th International CINet Conference on Business Development and Co-creation*. https://vbn.aau.dk/files/176789431/cinet_2013_nijmegen_efeoglu_et_al_cinet_version.pdf
- Ericson, J. D. (2022). Mapping the relationship between critical thinking and design thinking. *Journal of the Knowledge Economy*, 13(1), 406-429. <https://doi.org/10.1007/s13132-021-00733-w>
- Farasatkah, M. (2012). What problems do Iranian universities face? Interview with Sala student Library of the Faculty of Engineering, University of Tehran.
- Gaulton, J., Crowe, B., & Sherman, J. (2023). How design thinking and quality improvement can be integrated into a "human-centered quality improvement" approach to solve problems in perinatology. *Clinics in Perinatology*, 50(2), 435-448. <https://doi.org/10.1016/j.clp.2023.01.006>
- Ghaderi, M., Jahani, J., Mohamadi, M., & Shafiei, M. (2019). Design and validation of design thinking ability evaluation scale in Farhangian University students. *Journal of Training in Police Sciences*, 7(4), 71-90.
- Greenwood, L., Knott, K., & DeVoss, D. (2019). Dissensus, resistance, and ideology: Design thinking as a rhetorical methodology. *Journal of Business and Technical Communication*, 33(4), 400-424. <https://doi.org/10.1177/1050651919854063>
- Guaman-Quintanilla, S., Everaert, P., Chiluliza, K., & Valcke, M. (2023). Impact of design thinking in higher education: a multi-actor perspective on problem solving and creativity. *International Journal of Technology and Design Education*, 33(1), 217-240. <https://doi.org/10.1007/s10798-021-09724-z>
- Hassi, L., & Laakso, M. (2011). Design thinking in the management discourse: Defining the elements of the concept.
- Hatami, J. (2016). The challenge of teaching humanities in Iranian universities: a qualitative study. *Quarterly Journal of Research in Educational Systems*, 10(32), 234.

- Jussila, J., Raitanen, J., Partanen, A., Tuomela, V., Siipola, V., & Kunnari, I. (2020). Rapid product development in university-industry collaboration: Case study of a smart design project. *Technology Innovation Management Review*, 10(3), 48-58. <https://doi.org/10.22215/timreview/1336>
- Kadkhodaie, A., Tafti, A. A., Khademi Ashkezari, P., & Ahmadi, R. (2017). *The necessity of rethinking university education models in humanities with an emphasis on social constructivism approach: A proposed model* <https://www.sid.ir/paper/262634/en>
- Keramati, E. (2013). *Explanation of hidden curriculum in the Iranian higher education: The roots, assumptions, experiences and outcomes* PhD thesis, Ferdowsi University of Mashhad]. Faculty of Education and Psychology.
- Khanifar, H., & Moslemi, N. (2018). *The principles and basics of qualitative research methods (a new and practical approach)*. Negahedanesh.
- Khastar, H. (2009). Presenting a method for calculating the reliability of the coding stage in research interviews. *Methodology of Social Science and Humanities*, 15(58), 161.
- Kimbell, L. (2011). Rethinking Design Thinking: Part I. *Design and Culture*, 3(3), 285-306. <https://doi.org/10.2752/175470811X13071166525216>
- Kushi, Z., & Soltani, A. (2015). Prediction of Professor's Teaching Quality Based on Their Philosophic Mindedness and Job Motivation. *Training & Learning Researches*, 12(2), 29-48. https://tlr.shahed.ac.ir/article_2446_en.html?lang=fa
- Lake, D., Flannery, K., & Kearns, M. (2021). A cross-disciplines and cross-sector mixed-methods examination of design thinking practices and outcomes. *Innovative Higher Education*, 46(3), 337-356. <https://doi.org/10.1007/s10755-020-09539-1>
- Lake, D., Guo, W., & Chen, E. (2024). Design Thinking in Higher Education: Opportunities and Challenges for Decolonized Learning. *Teaching and Learning Inquiry*, 12. <https://journalhosting.ucalgary.ca/index.php/TLI/article/view/72970>
- Liedtka, J. (2017). Evaluating the impact of design thinking in action. *In Academy of Management Proceedings*, 2017(1), 10264. <https://journals.aom.org/doi/abs/10.5465/AMBPP.2017.177>
- Lor, R. R. (2017). Design thinking in education: A critical review of literature.
- Luka, I. (2019). Design thinking in pedagogy: Frameworks and uses. *European Journal of Education*, 54(4), 499-512. <https://doi.org/10.1111/ejed.12367>
- Mahdavi, N., Niknam, Z., Attaran, M., & Mousapour, N. (2021). Unpredictable Curriculum; As a Consequence of the Corona and Post-Corona Eras. *Journal of Theory and Practice in Curriculum Studies*, 9(17), 155-186. https://www.jstpcpsa.ir/article_191848.html?lang=en
- Mathee, M., & Turpin, M. (2019). Teaching critical thinking, problem solving, and design thinking: Preparing IS students for the future. *Journal of Information Systems Education*, 30(4), 242-252. <https://aisel.aisnet.org/jise/vol30/iss4/5/>
- McKinsey, & Company. (2021). Defining the skills citizens will need in the future world of work. Retrieved from <https://www.mckinsey.com/industries/public-and-social-sector/ourinsights/defining-the-skills-citizens-will-need-in-the-future-world-of-work>. <https://emplea.ceu.es/wp-content/uploads/defining-the-skills-citizens-will-need-in-the-future-world-of-work.pdf>
- McLaughlin, J. E., Chen, E., Lake, D., Guo, W., Skywark, E. R., Chernik, A., & Liu, T. (2022). Design thinking teaching and learning in higher education: Experiences across four universities. *PLoS One*, 17(3), e0265902. <https://doi.org/10.1371/journal.pone.0265902>
- McLaughlin, J. E., Lake, D., Chen, E., Guo, W., Knock, M., & Knotek, S. (2023). Faculty experiences and motivations in design thinking teaching and learning.
- Mohebiamin, S. (2014). *Identifying the teaching culture and creative teaching requirements in the university*
- Naghshbandi, S. (2020). Exploring the impact of experiencing design thinking on teachers' conceptualizations and practices. *TechTrends*, 64(6), 868-877. <https://doi.org/10.1007/s11528-020-00517-0>
- Naugk, N., & Kofahl, P. (2023). Design thinking in teacher training using the example of multilingual didactics.
- Panke, S. (2019). Design thinking in education: Perspectives, opportunities and challenges. *Open Education Studies*, 1(1), 281-306. <https://doi.org/10.1515/edu-2019-0022>
- Roodi, M., & Jafari, E. (2024). Identifying Effective Teaching Behaviors from Students' Point of View: A Critical Incident Technique. *Journal of Higher Education Curriculum Studies*, 14(28), 325-356. <https://www.sid.ir/paper/1499145/en>
- Salehi Zadeh, M., Ghourchian, N., Mohammad Davoodi, A., & Ghavavandi, H. (2019). Providing a Model for Improving the Quality of Teaching Professionals at Farhangian University Professors. *Research in Teaching*, 7(2), 227-249. <https://www.sid.ir/paper/262626/en>
- SamKhanyān, M. R. (2009). *Creativity and innovation in educational organizations (concepts, theories, techniques, and measurement)*. [Media specialized]. Tehran.
- Schweitzer, J., Groeger, L., & Sobel, L. (2016). The design thinking mindset: An assessment of what we know and what we see in practice. *Journal of Design, Business & Society*, 2(1), 71-94. https://doi.org/10.1386/dbs.2.1.71_1
- Scott, D., & Lock, J. (2021). *Teacher as Designer*. Springer. <https://doi.org/10.1007/978-981-15-9789-3>
- Serrat, O. (2010). Design thinking. *Knowledge Solutions*, 78, 1-6.
- Shahmohammadi, A., Azizi, N., & Bahmani, M. (2023). Development of a Model to Improve the Teaching Quality of Faculty Members of the Distance Education System (Case Study Payam Noor University). *Research in Teaching*, 11(1), 116-138. https://journals.uok.ac.ir/article_62695_9123359c6855cb7099190645fe60ed60.pdf
- Shalley, C. E., & Gilson, L. L. (2004). What leaders need to know: A review of social and contextual factors that can foster or hinder creativity. *The Leadership Quarterly*, 15, 33-53. <https://doi.org/10.1016/j.leaqua.2003.12.004>
- Sohbatlo, A., & Taheriniya, A. (2023). The Analysis of the Lived Experiences of Farhangian University Instructors on Virtual Education Classes During the Covid Time. *Quarterly Journal of Research and Planning in Higher Education*, 29(1), 79-112. <https://doi.org/10.61838/irphe.29.1.4>
- Talebi, S., Nili Ahmadabadi, M. R., Fardanesh, H., & Delavar, A. (2023). Investigating the effectiveness of "Instructional Design Thinking" on the instructional design capability of educational technology students. *Technology of Education Journal*, 17(4), 709-728. https://jte.sru.ac.ir/article_1924_en.html
- Wrigley, C., & Mosely, G. (2022). *Design thinking pedagogy: Facilitating innovation and impact in tertiary education*. Routledge. <https://doi.org/10.4324/9781003006176>



- Yasbolaghi Sharahi, B., & Moradi, R. (2024). The effectiveness of the design thinking teaching strategy on the problem-solving ability of elementary school students in the course of thinking and research. *Research in Teaching*, 11(3), 114-129. https://trj.uok.ac.ir/article_62929_en.html?lang=en
- Zabor, A. (2021). Assessment of design thinking implementation possibilities in higher education. [Journal not provided].
- Zarei, M., Zainalipour, H., & Samavi, A. (2023). A STEAM-based educational package based on the design thinking model and its effectiveness on 6th grade elementary students. *Journal of Curriculum Studies*, 18(68), 223-246. https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.jcsicsa.ir/article_150163.html%3Flang%3Den&ved=2ahUKEwiMuP-yx6ePAxV1k4kEHUFNBIIQFnoECBgQAQ&usq=AOvVaw0bFk9Aoni8fBxdBKMAz4F3

