

Future Interior Design Teacher Composition of Artificial Intelligence Competence

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Abstract: This article systematically analyzes the scientific and pedagogical foundations of the formation of artificial intelligence (AI) competence of a future interior design teacher and its structural structure. The study reveals the integrative nature of AI competence through a chain of quaternary models - cognitive-knowledge, design-technological, creative-aesthetic and reflexive-ethical components. Author generative models, prompt-engineering and visual platforms (Midjourney, DALL-E, Stable Diffusion) capabilities traditional professional programs (3ds Max, AutoCAD) as well as national architecture elements with integration methodology based on gives. In the article this components each other dialectical dependency and them whole unity as to develop "SI-IDOM" (Generation – Curation – Integration – Reflection) methodology approach pedagogical importance illuminated.

Keywords: Future teacher, interior design, AI competence, cognitive-knowledge, project-technological, creative-aesthetic, reflexive-ethical component, prompt- engineering, national architecture, SI-IDOM methodology.

Introduction: 21st century third ten anniversary come, generative artificial intelligence (AI) architectures sharp jump all creative and working release sectors row interior design and his/her pedagogy absolutely in front of you new requirements Today 's on the day interior designer just technician drawings not the performing operator , but with AI intellectual and creative to communicate to enter capable , design process algorithmic systems using optimizing strategic to the curator is spinning .

High pedagogical education in the system future interior design teachers preparation process this technological from the revolution behind not to stay , on the contrary , to him suitable accordingly transformation to be done necessary . Future teacher's

artificial intellect competence his/her personal professional skills just to specify not , maybe in the future, he will study giving students ' visual and technological culture in formation foundation task However , pedagogical in research this competence structural parts of them mutual dialectical relevance and art education to oneself originality with dependency still enough not systematized .

Future interior design teacher's artificial intellect competence is complicated , many measurable and structural in terms of integrative to the feature has was professional-pedagogical is a quality. Our to our research according to this competence four mutual dialectical related from the component organization finds (Table 1).

Table 1: Components and functional description of the AI competency

Competence component	Central content and structural elements	Professional and pedagogical importance	Irregularity consequences (Risks)
Cognitive-knowledge	AI history , neuron networks , transformers and diffusion models , generative systems work principles .	AI is "magical" "box" is not algorithmic system as conscious perception to be	From technology blind , mechanical use , errors analysis do not getting
Project-technological	Prompt- engineering , Midjourney , DALL-E, with Stable Diffusion work , they are CAD/3D programs with synthesis to do	Real professional and didactic projects using AI optimization .	Instrumental skills theoretical without foundation little in the form mold to leave .
Creative-aesthetic	Stylistic thinking , artistic taste, national architecture AI solutions of elements with harmonization .	Student technician from the operator artistic and creative expert to the level lift	Design of his works one diversification (template) , national of identity loss
Reflexive-ethical	Authorship law , academic honesty , model " hallucinations " and mistakes critical correction .	Future to his students From AI boot use culture to teach	Conscientious without criteria and to plagiarism based technician activity

The cognitive-knowledge component covers the set of knowledge consciously mastered by the student on the theoretical foundations of artificial intelligence, stages of historical development, main algorithms and architectures - symbolic artificial intelligence, machine learning, neural networks, deep learning and transformers. This component also includes theoretical knowledge on the principles of operation of generative models, the capabilities and limitations of artificial intelligence tools in the field of interior design, the features of the application of artificial intelligence in pedagogical practice, and the ethical and legal aspects of the field. This component provides the student with the necessary cognitive foundation for the justified, critical and responsible use of artificial intelligence tools. In particular, understanding the mechanisms of operation of transformer architecture, diffusion models and large language models is of scientific importance - it is this knowledge that allows the student to perceive

artificial intelligence not as a "magic box", but as an algorithmic system, and when the output of the model is incorrect or inconsistent, to ask "why?" allows you to independently ask the question. In conditions where the cognitive-knowledge component is not sufficiently formed, the student uses artificial intelligence tools mechanically and without critical thinking, evaluates the results of the model without scientific criteria, and cannot come to pedagogically sound conclusions; in turn, this leads to the inability to provide the correct scientific and methodological direction to his students in the future.

The project-technological component includes a holistic system of practical skills and competencies that are directly based on cognitive-knowledge and are manifested in professional practice. The main structural elements of this component are: firstly, mastering the techniques for creating effective text-visual prompts and the principles of prompt engineering; secondly, the

ability to work with various artificial intelligence platforms at a practical level - Midjourney, DALL-E, Stable Diffusion, RoomGPT, ChatGPT, Claude, etc.; thirdly, the ability to critically evaluate and compare artificial intelligence results and reasonably choose the option that best suits professional and didactic requirements; fourthly, technological integration of artificial intelligence generations with traditional professional design programs (AutoCAD, 3ds Max, SketchUp, Adobe Photoshop); fifthly, the strategic and methodological use of artificial intelligence at all stages of the project - at the stage of initial idea formation, sectoral analysis, sketching, visualization and final presentation; Sixth, the ability to independently master AI tools through a strategy of continuous self-learning, in the face of constant innovation. It is this component that constitutes the "embodied" - that is, directly manifested in real professional activity - practical-instrumental dimension of AI competence.

The creative-aesthetic component represents the ability to create original design solutions, develop aesthetic criticism and stylistic thinking through creative cooperation with artificial intelligence. This component includes the following skills: a) redesign and develop the results offered by artificial intelligence in accordance with one's own creative concept; b) accurate application of artistic styles (classical, modern, art deco, minimalism, biophilic design, ethnic-national style, etc.) in artificial intelligence tools; c) preservation of artistic taste and aesthetic criteria when working with artificial intelligence; d) combination of national cultural elements (traditional elements of Uzbek architecture, ganch carving, nachshund, blue domes) with modern artificial intelligence solutions; d) perception of artificial intelligence not just as a technical tool, but as a creative partner. This component student not a technical operator , but an artistic and creative one expert as shapes .

Reflexive-ethical component — artificial from the intellect of use ethical and legal aspects , authorship problems , creative responsibility and professional self to evaluate circle valuable attitude and personal experiments set cover recipient leader is a structural element . This component central content-elements of the following consists of : first , artificial intellect generations related authorship and intellectual property of issues legal-moral importance deep

understanding ; secondly , academic and creative honesty principles loyalty (ChatGPT , Midjourney or similar tools using done the work his/her own independent creative product as presented not to do); thirdly , artificial intellect to the means typical restrictions and systematic errors — " hallucinations ", incorrect stylistic interpretations , cultural-contextual inconsistencies — in time determination and methodical in terms of correction skill ; fourth , in the future own students artificial from the intellect boot use to culture to teach according to pedagogical responsibility conscious accordingly understanding ; fifthly , self professional activity regular reflexive assessment and permanent professional self to develop tendency . Exactly this component future teacher's personal and professional maturity , valuable position and socio-ethical maturity with closely dialectical in connection will be .

This four component mutual deep dialectical in connection become , each other fills and strengthens ; their whole in unity artificial intellect competence integrative nature complete manifestation will be . From the components any of them enough unformedness whole competence system to inefficiency take For example , strong project-technological component cognitive-knowledge without component « to technology blindly to follow , reflexive-moral componentless and " conscientious" without criteria technician to use around remains . On the contrary , it is solid cognitive-knowledge component project-technological component with if not filled , theoretical little skill at the level preserved remains ; creative-aesthetic component and reflexive-moral from the component separate taken without personal aesthetic inclination to the level falls and pedagogical responsibility mean cannot . Pedagogical point of view from the point of view this is the methodology in design all four to the component balanced attention to focus on , from them one to another relatively " more important " or " later " " to be formed " mark and methodological mistake to be counted means . Exactly this four whole integrative unity as The four stages of the SI-IDOM methodology: “ Generation – Curation – Integration – Reflection ” step by step logical structure directed .

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