

Research Chat Export

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Q1: Summarize this paper in 5 lines

This paper presents a systematic literature review aimed at analyzing and interpreting findings related to technology adoption in education across various subjects and educational levels. It outlines predefined research foci including research purpose, learning subject, educational level, research approach, and effects. The review was conducted in three stages: planning, performing, and reporting. It highlights the significance of theoretical research in educational technology. The findings are presented in a table categorizing articles by research questions, technology adoption, and other criteria.

Sources: {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0101', 'similarity': '27.1%', 'content_preview': 'Multidisciplines\\nSubjects\\nHumanities\\nand\\nsocial sciences\\n(b)\\nFigure 2: *e number of reviewed studies by educational level and subjects.\\n14\\nComplexity\\n8503, 2021, 1, Downloaded from https://onlinelibrary...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020', 'section': 'references', 'source': 'unknown'}}, {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0014', 'similarity': '26.9%', 'content_preview': '2. Method\\nis study is a systematic literature review. *e objectives of\\nthe review were to analyze and interpret ndings based on\\npredeneed research questions (see above) and criteria which\\nserve to p...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020', 'section': 'methodology', 'source': 'unknown'}}, {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0080', 'similarity': '26.4%', 'content_preview': 'group-oriented. *erefore, we believe that the early the-\\noretical research has played a signcant supporting role.\\nIn 2019, researchers attached more emphasis on the...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020', 'section': 'results', 'source': 'unknown'}}}

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Q2: Explain this paper like I'm a beginner

This paper reviews how artificial intelligence (AI) is used in education. It looks at different ways AI can help with learning, such as classifying problems, matching information to learning goals, and making recommendations based on student feedback. The study involved analyzing existing research to understand how AI has evolved from theory to practice in education. It also discusses the importance of big data for improving AI algorithms. The review process included selecting relevant studies and categorizing them based on how AI is applied in educational settings.

Sources: {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0050', 'similarity': '30.5%', 'content_preview': 'could be categorized according to varied characteristics.\\nClassification demarcates knowledge content, which con-\\ntributes to the accuracy of text analysis [3]. For example,\\nsome researchers developed ...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020', 'section': 'results', 'source': 'unknown'}}, {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0037', 'similarity': '27.2%', 'content_preview': 'ADP\\nSquirrel AI learning\\nMath\\n200 eighth grade students\\nEXP\\nOUT\\n100\\nRybinski and\\nKopciuszewska\\n[117]\\nAFF\\nNatural language\\nprocessing (NLP)\\nmodels\\nHigher education\\n640,349 reviews of 132\\nuniversities\\n...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020', 'section': 'methodology', 'source': 'unknown'}}, {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0079', 'similarity': '26.8%', 'content_preview': '3.4. :e Results from Qualitative Research. According to\\nselected qualitative research (as shown in Table 3),'}

the exploration of AI in education experienced a process from theoretical research to a spe...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020', 'section': 'results', 'source': 'unknown'}}

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Q3: What is the main contribution of this paper?

The main contribution of this paper is the systematic literature review that analyzes and interprets findings related to the exploration of AI in education, highlighting the evolution from theoretical research to practical application and the support of qualitative research for quantitative research development.

Sources: {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0080', 'similarity': '31.7%', 'content_preview': 'group-oriented. *erefore, we believe that the early the-noretical research has played a significant supporting role.\nIn 2019, researchers attached more emphasis on the...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020', 'section': 'results', 'source': 'unknown'}}, {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0109', 'similarity': '28.3%', 'content_preview': '[33] B. Williamson, J. Pykett, and S. Nemorin, "Biosocial spaces\nand\nneurocomputational\ngovernance:\nbrain-based\nand\nbrain-targeted technologies in education," Discourse: Studies\nin the Cultural Politi...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020', 'section': 'references', 'source': 'unknown'}}, {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0014', 'similarity': '25.8%', 'content_preview': '2. Method\nis study is a systematic literature review. *e objectives of\nthe review were to analyze and interpret ndings based on\npredened research questions (see above) and criteria which\nserve to p...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020', 'section': 'methodology', 'source': 'unknown'}}}

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Q4: What problem does this paper solve?

The paper explores the application of AI in education, specifically focusing on the development and effectiveness of various technologies and methodologies in enhancing learning outcomes.

Sources: {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0108', 'similarity': '32.7%', 'content_preview': 'glu, H. Karal, A. K. Er\nnumit, and\nA. ebi, "Application of graph theory in an intelligent\nntutoring system for solving mathematical word problems,"\nEurasia Journal of Mathematics, Science & Technology...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020', 'section': 'references', 'source': 'unknown'}}, {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0019', 'similarity': '32.4%', 'content_preview': 'Table 1: *e articles coded by research question, technology adoption, learning subject, educational level, research approach, and eects.\nID\nAuthors\nResearch\nQuestion\nTechnology adoption\nLearning Subj...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020', 'section': 'methodology', 'source': 'unknown'}}, {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0037', 'similarity': '31.7%', 'content_preview': 'ADP\nSquirrel\nAI\nlearning\nMath\n200\neighth\ngrade\nstudents\nEXP\nOUT\n100\nRybinski\nand\nKopciuszewska\n[117]\nAFF\nNatural language\nprocessing (NLP)\nmodels\nHigher education\n640,349 reviews of\n132\nuniversities\n...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020', 'section': 'methodology', 'source': 'unknown'}}}

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Q5: What are the key findings/results?

The key findings/results are not explicitly provided in the given context.

Sources: {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0014', 'similarity': '42.9%', 'content_preview': '2. Method\nis study is a systematic literature review. *e objectives of\nthe review were to analyze and interpret ndings based on\npredened research questions (see above) and criteria which\nserve to p...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020'}, 'section': 'methodology', 'source': 'unknown'}}, {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0080', 'similarity': '33.0%', 'content_preview': 'group-oriented. *erefore, we believe that the early the-\noretical research has played a signicant supporting role.\nIn 2019, researchers attached more emphasis on the...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020'}, 'section': 'results', 'source': 'unknown'}}, {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0132', 'similarity': '26.2%', 'content_preview': 'social-emotional and intellectual learning outcomes: an in-\ntegrated analytical framework," British Journal of Educa-\nnational Technology, vol. 51, no. 5, pp. 1808-1825, 2020.\n[112] T. Yldz, "\ne most ...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020'}, 'section': 'methodology', 'source': 'unknown'}}}

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Q6: What methodology is used in this paper?

The methodology used in this paper is a systematic literature review.

Sources: {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0014', 'similarity': '32.2%', 'content_preview': '2. Method\nis study is a systematic literature review. *e objectives of\nthe review were to analyze and interpret ndings based on\npredened research questions (see above) and criteria which\nserve to p...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020'}, 'section': 'methodology', 'source': 'unknown'}}, {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0080', 'similarity': '30.2%', 'content_preview': 'group-oriented. *erefore, we believe that the early the-\noretical research has played a signicant supporting role.\nIn 2019, researchers attached more emphasis on the...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020'}, 'section': 'results', 'source': 'unknown'}}, {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0101', 'similarity': '29.8%', 'content_preview': 'Multidisciplines\nSubjects\nHumanities\nand\nsocial sciences\n(b)\nFigure 2: \ne number of reviewed studies by educational level and subjects.\n14\nComplexity\n8503, 2021, 1, Downloaded from\nhttps://onlinelibrary...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020'}, 'section': 'references', 'source': 'unknown'}}}

Confia

Q7: What model/algorithm is used?

Bayesian networks, association rules, clustering, fuzzy C-means, and genetic algorithms.

Sources: {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0062', 'similarity': '39.4%', 'content_preview': 'automatically. *erefore, the requirements of dealing with\nincreasingly large and diverse data demand self-adaptive\nalternatives [9]....', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020'}, 'section': 'results', 'source': 'unknown'}}, {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0045', 'similarity': '34.0%', 'content_preview': 'gorithms were well-accepted algorithms for the modelling of\nindividual properties of the student. *ese techniques\nprovide potential indications for the investigation of\ninforming homogeneous and heterog...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020'}, 'section': 'results', 'source': 'unknown'}}, {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0043', 'similarity': '32.4%', 'content_preview': '3.1. Dimension of Development. As shown in Table 2, 16\nempirical studies were found focusing on the\ndevelopment\nof education systems such as intelligent tutoring system\n(ITS) and electronic assessment...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020'}, 'section': 'results', 'source': 'unknown'}}}

Q8: Explain the architecture/workflow in simple steps

The architecture/workflow consists of the following simple steps:

1. Analyze prior experiments and data.
2. Predict variables based on the analysis.
3. Conduct algorithm testing.
4. Develop the educational system with three components: presentations, logical modeling, and data dimension.
5. Utilize intelligent systems for visualization and reasoning support.
6. Implement complex algorithms considering human factors.
7. Optimize the learning context with hierarchical structures and multiple approaches.

Sources: `{'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0043', 'similarity': '32.6%', 'content_preview': '3.1. Dimension of Development. As shown in Table 2, 16\nempirical studies were found focusing on the development\nof education systems such as intelligent tutoring system\n(ITS) and electronic assessment...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020', 'section': 'results', 'source': 'unknown'}}, {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0059', 'similarity': '31.9%', 'content_preview': 'have been studied. For the graph structure, intelligent sys\n-items could be developed to make thinking visible. In a sense,\nthe simulation approach of the AI technique was employed\ninto mimic thoughts tr...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020', 'section': 'results', 'source': 'unknown'}}, {'id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020_chunk_0045', 'similarity': '29.0%', 'content_preview': 'gorithms were well-accepted algorithms for the modelling of\nindividual properties of the student. ese techniques\nprovide potential indications for the investigation of\nforming homogeneous and heterog...', 'metadata': {'chunk_type': 'content', 'paper_id': 'Complexity - 2021 - Zhai - A Review of Artificial Intelligence AI in Education from 2010 to 2020', 'section': 'results', 'source': 'unknown'}}}`