Title	Authors	Description	Pros	Cons	Learnings/Insights
Augmented Reality in Education: A Review of the Literature	Chen, N. S., & Tseng, S. L. (2018)	A comprehensive review of AR in education, covering various subjects and applications.	Provides a holistic view of AR across disciplines. Highlights key AR tools.	Focuses on general applications without diving deep into specific subjects.	AR shows promise, but its effectiveness depends on content design and user experience.
Augmented Reality for Learning: A Meta-Analysis	Kaur, S., & Singh, P. (2021)	Meta-analysis of studies on AR for learning, focusing on academic outcomes.	Demonstrates positive learning outcomes with AR tools. Quantitative results on effectiveness.	Some studies show inconsistent improvements in retention.	AR improves student engagement and learning outcomes, but proper instructional design is essential.
Augmented Reality in Science Education: A Systematic Review	Sánchez-Prieto, J. M., & Domínguez-Calvo, J. (2019)	Focuses on the impact of AR in science education across different levels.	Highlights the potential of AR to enhance complex scientific concepts.	Limited focus on real-world applications outside labs.	AR bridges the gap in understanding abstract concepts but needs better teacher training.
Using Augmented Reality to Teach the Structure of the Human Brain	D'Mello, S. K., & D'Mello, J. K. (2019)	Explores how AR can help students understand brain anatomy interactively.	High engagement with immersive content. Better comprehension of anatomical structures.	AR models may distract students if not well integrated with pedagogy.	AR is effective for teaching anatomy but needs guided learning strategies.
Visualizing Atomic Structure with Augmented Reality: A Pilot Study	Barnett, M., & O'Malley, C. (2018)	Examines AR's potential to teach atomic structures to students.	Improves understanding of abstract atomic models. Promotes interactive learning.	Small sample size; difficult to generalize.	AR helps visualize microscopic concepts effectively, but scalability is a challenge.
Augmented Reality in Humanities Education: A Case Study of Art History	Kowalczyk, D., & Hargadon, A. (2021)	Analyzes how AR supports the teaching of art history with virtual exhibits.	Makes abstract art concepts more accessible. Encourages self-paced learning.	Limited relevance to non-visual subjects.	AR can enhance humanities education but is most effective for visual disciplines.
Engaging Students in Literature with Augmented Reality	Gallo, S. (2020)	Focuses on using AR to bring literary content to life for better engagement.	Increases motivation and immersion in storytelling.	AR can lead to cognitive overload.	AR enhances literature comprehension, but moderation is key to avoid distractions.

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Designing Effective AR Educational Experiences: A Framework	Bell, S. S., & McCrindle, A. R. (2022)	Proposes a framework for designing AR experiences for education.	Provides guidelines for creating meaningful AR content.	Does not provide specific use cases.	Well-designed AR content is crucial for maximizing learning impact.
A User-Centered Approach to Developing AR Educational Apps	Kaur, H., & Singh, P. (2021)	Discusses how to involve users in developing AR educational tools.	Ensures AR tools meet student and teacher needs.	Time-consuming development process.	User feedback is essential for effective AR app development.
The Effects of AR on Student Engagement and Learning Outcomes in a College Biology Course	Liu, T.-C., & Chang, C.-M. (2020)	Analyzes how AR influences learning outcomes in a biology course.	Improved student engagement and comprehension.	AR implementation can be costly.	AR increases engagement but requires careful cost-benefit analysis.
AR and Student Motivation: A Study of the Relationship	Chen, C. H., & Wu, P. H. (2019)	Investigates the link between AR and student motivation.	Positive correlation between AR use and motivation.	Motivation gains may not always translate into performance.	AR boosts motivation, but it should be part of a broader learning strategy.
The Role of AR in Promoting Deep Learning	Mayer, R. E. (2018)	Explores AR's impact on fostering deep learning processes.	Promotes active learning and critical thinking.	Requires careful instructional alignment.	AR can support deep learning when integrated with pedagogy.
Assessing the Impact of AR on Student Performance and Satisfaction	Lee, S.-J., & Chang, H.-J. (2017)	Measures the impact of AR on student performance in higher education.	Positive student feedback and improved scores.	Results may vary across different student groups.	AR improves satisfaction and performance, but individual differences matter.
AR for Anatomy Education: A Review	Anatomical Sciences Education (2020)	Reviews the use of AR for teaching anatomy across various settings.	Effective for visualizing complex body structures.	May require technical infrastructure in classrooms.	AR enhances anatomy education but needs appropriate tools.
AR for Teaching Chemistry: A Case Study	Journal of Chemical Education (2021)	Examines AR's application in chemistry education through hands-on activities.	Enhances conceptual understanding of chemical processes.	Technical challenges in setting up AR experiments.	AR makes abstract chemical processes more understandable.

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Augmented Reality in Education: A Review of the Literature	Chen, N. S., & Tseng, S. L. (2018)	A comprehensive review of AR applications in education	- Provides an overview of AR in various educational contexts - Identifies trends and challenges in AR implementation	- May not focus specifically on scientific concept visualization - Could be slightly outdated (2018)	- Understanding the broader context of AR in education - Identifying potential challenges in AR implementation
Augmented Reality for Learning: A Meta-Analysis	Kaur, S., & Singh, P. (2021)	A meta-analysis of studies on AR's effectiveness in learning	- Quantitative evidence of AR's impact on learning outcomes - Recent study (2021) providing up-to-date insights	- May not specifically address non-engineering majors - Might not focus on specific scientific concepts	- Evidence-based insights into AR's effectiveness in learning - Potential metrics for measuring your project's impact
Augmented Reality in Science Education: A Systematic Review	Sánchez-Prieto, J. M., & Domínguez-Calvo, J. (2019)	A systematic review focusing on AR in science education	- Directly relevant to your project's focus on scientific concepts - Provides insights into AR's application in various scientific fields	- May not cover very recent developments (post-2019) - Might not address non-engineering majors specifically	- Understanding AR's current use in science education - Identifying gaps in AR application for scientific concepts
Using Augmented Reality to Teach the Structure of the Human Brain	D'Mello, S. K., & D'Mello, J. K. (2019)	A study on using AR to teach brain structure	- Directly relevant to your project's aim of visualizing complex structures - Focuses on a specific application in neuroscience	- Limited to one specific topic (brain structure) - May not generalize to other scientific concepts	- Insights into designing AR for complex biological structures - Potential challenges and solutions in implementing AR for anatomy education

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Visualizing Atomic Structure with Augmented Reality: A Pilot Study	Barnett, M., & O'Malley, C. (2018)	A pilot study on using AR to visualize atomic structures	- Highly relevant to your project's focus on atomic visualization - Provides practical insights from implementation	- Small-scale pilot study - May not provide extensive quantitative data	- Specific insights into AR for atomic structure visualization - Potential design considerations for your AR application
Augmented Reality in Humanities Education: A Case Study of Art History	Kowalczyk, D., & Hargadon, A. (2021)	A case study on AR use in art history education	- Provides insights into AR use in non-STEM fields - Recent study (2021)	- Not directly related to scientific concept visualization - May have limited applicability to your project	- Understanding AR's potential in diverse educational contexts - Possible interdisciplinary applications of your AR tool
Engaging Students in Literature with Augmented Reality	Gallo, S. (2020)	A study on using AR to engage students in literature	- Focuses on student engagement, a key aspect of your project - Provides insights into AR's motivational effects	- Not directly related to scientific concepts - May not address learning outcomes in depth	- Strategies for enhancing student engagement through AR - Potential for applying AR engagement techniques to scientific content
Designing Effective Augmented Reality Educational Experiences: A Framework	Bell, S. S., & McCrindle, A. R. (2022)	A framework for designing effective AR educational experiences	- Recent study (2022) providing up-to-date design principles - Focuses on effectiveness, aligning with your project goals	- May not be specific to scientific concept visualization - Theoretical framework might require adaptation for your project	- Guidelines for designing effective AR educational experiences - Framework for evaluating your AR application's design
A User-Centered Approach to Developing Augmented Reality Educational Apps	Kaur, H., & Singh, P. (2021)	A study on user-centered design for AR educational apps	- Focuses on app development, directly relevant to your project - Emphasizes user-centered design	- May not specifically address scientific concept visualization - Might not provide detailed technical implementation guidance	- User-centered design principles for your AR application - Strategies for involving students in the development process

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The Effects of Augmented Reality on Student Engagement and Learning Outcomes in a College Biology Course	Liu, T.-C., & Chang, C.-M. (2020)	A study on AR's impact on engagement and learning in college biology	- Directly relevant to your focus on complex scientific concepts - Addresses both engagement and learning outcomes	- Limited to biology, may not generalize to all scientific concepts - College-level focus might not apply to all educational levels	- Insights into AR's effectiveness in teaching complex biological concepts - Potential metrics for measuring engagement and learning outcomes
Augmented Reality and Student Motivation: A Study of the Relationship	Chen, C. H., & Wu, P. H. (2019)	A study examining the relationship between AR and student motivation	- Focuses on motivation, a key aspect of student engagement - Provides insights into AR's psychological effects	- May not address learning outcomes or comprehension directly - Might not be specific to scientific concept visualization	- Understanding AR's impact on student motivation - Strategies for designing motivational elements in your AR application
The Role of Augmented Reality in Promoting Deep Learning	Mayer, R. E. (2018)	An exploration of AR's potential in promoting deep learning	- Focuses on deep learning, aligning with your goal of improving comprehension - Written by a renowned educational psychologist	- Might be more theoretical than practical - Could be slightly outdated (2018)	- Theoretical foundation for promoting deep learning through AR - Strategies for designing AR experiences that facilitate deep understanding
Assessing the Impact of Augmented Reality on Student Performance and Satisfaction	Lee, S.-J., & Chang, H.-J. (2017)	A study on AR's impact on student performance and satisfaction	- Addresses both performance and satisfaction, key outcomes for your project - Provides insights into assessment methods	- Older study (2017), may not reflect recent AR advancements - Might not be specific to scientific concept visualization	- Methods for assessing AR's impact on student performance and satisfaction - Potential metrics for evaluating your AR application's effectiveness

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Augmented Reality for Anatomy Education: A Review	(Anatomical Sciences Education, 2020)	A review of AR applications in anatomy education	- Directly relevant to visualizing complex biological structures - Recent review (2020) providing up-to-date insights	- Limited to anatomy, may not generalize to all scientific concepts - Might not address non-medical educational contexts	- Specific insights into AR for anatomical visualization - Potential challenges and solutions in implementing AR for complex biological structures
Augmented Reality for Teaching Chemistry: A Case Study	(Journal of Chemical Education, 2021)	A case study on using AR to teach chemistry	- Directly relevant to visualizing abstract scientific concepts like atomic structure - Recent study (2021) providing current insights	- Limited to chemistry, may not generalize to all scientific fields - Case study format might limit generalizability	- Specific insights into AR for chemistry education - Potential approaches for visualizing abstract scientific concepts