

THE BOOK

Artificial intelligence in library management explores the latest trends, challenges, and opportunities in technology and knowledge management in library settings. It covers topics such as ai-driven educational tools, deepfake challenges, reimagining library management with ai, data visualization, sustainable urban development, cybersecurity threats, open government data initiatives, ai initiatives in india, digital collection access, mobile-based library services, ai-driven literature review tools, augmented reality in library services, and iot integration in library development.

The book provides step-by-step techniques for creating compelling data visualizations, empowering librarians to communicate insights effectively and engage users visually. It also discusses the evolving cybersecurity threats facing digital collections in academic libraries, the role of mobile technology in delivering library services, and innovative approaches to promoting reading habits through ai and chatbot tools. It also explores the potential of iot applications in library operations and services, library 2.0 principles shaping library services for the 4g generation, and gamification strategies for lifelong learning in modern libraries. Finally, "Artificial intelligence in library management provides a transdisciplinary examination of the constantly evolving relationship between technology, knowledge management, and community involvement in library environments, providing technologists, educators, legislators, and librarians the skills and understanding they require to effectively navigate the changing landscape of library services in the digital age.

The Editor



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Edited by
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Chalk to Click : Enhancing Teaching with AI Tools

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1. INTRODUCTION

The typical classroom is changing. Gone are the days of rote memorization and blackboards. Chalk to Click" represents this exciting new direction in education, where AI tools have the potential to revolutionise the field. With the help of this strategy, teachers may better utilize technology to give their pupils an engaging and productive learning environment. We will examine the numerous tools and applications that are assisting instructors and enhancing the learning experience as we go deeper into how artificial intelligence is changing education in the parts that follow. We'll also talk about the possible advantages and things to think about when integrating technology into the classroom.

2. REVIEW OF RELATED LITERATURE

Umang Dhuria & Nilakshi Jainb (2020) found that the study explores the ineffectiveness of school diaries as a method for parent-teacher communication, highlighting the need for a shift to digital methods. It examines the GuideNGrow Android app, suggesting that schools can enhance parent-teacher communication by providing regular updates and high-level performance acceptance.

Vinay S B (2023) wrote a article that the integration of artificial intelligence (AI) in education offers personalized, engaging, and productive learning experiences. Technologies like chatbots, adaptive tests, and virtual reality can be used to cater to individual student needs. However, ethical application is crucial to promote student wellbeing and academic progress.



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Davy Tsz Kit Ng and et.al (2023) explained the article about the pandemic has accelerated the adoption of online and hybrid learning, requiring educators to adapt to the use of artificial intelligence (AI) in classrooms. However, many teachers lack the technical expertise to effectively use AI tools. This study examines the benefits and drawbacks of AI systems, modifying the DigCompEdu and P21 frameworks to incorporate AI while adhering to digital competency frameworks. Recommendations are provided to help educators and researchers advance AI education.

3. TEACHING METHODS

Teaching techniques are methods used to help students understand and remember material in a classroom setting. Some of the best teaching strategies ensure long-term retention while enabling educators to provide knowledge to students in an understandable, concise manner. If students can comprehend the content thoroughly and practise it effectively, they may apply the knowledge and skills they learn in the classroom to both their personal and professional lives. Using effective teaching tactics can help students find learning engaging, inspiring, and pleasurable. They assist teachers in doing their job of guiding children's social and emotional development. By using successful teaching strategies, educators may instill in their students a sense of respect, empathy, and cultural sensitivity. Additionally, they use instructional methodologies to prepare students for exams that are standardised. Your personal tastes, your school's mission statement, the subjects you teach, and other factors may all influence your teaching philosophy.

4. TYPES OF TEACHING METHODS

There are many kinds of procedures a teacher can use in a classroom. Many of them are similar in purpose and teachers can use a blend of instruction methods to best fit the needs of the students. Here are some typical approaches to consider:

4.1. Differentiated instruction

The concept of differentiated instruction involves developing individualised lesson plans for each student according to their unique needs. This could have to do with how the students access the material, what they do, how the teacher assesses them, or even how the classroom is set up physically. Since everyone has different skills and aptitudes, it is advantageous for teachers to modify their pedagogical approaches for each individual student. In order to support children with disabilities in the classroom and make sure they feel comfortable and welcomed in academic settings, this is also a crucial step.

4.2. Lecture – based Learning

The lecture format is a conventional method of organising instruction in the classroom, where lecturers present material while students listen. Instructors guide a class by discussing, illustrating, and modeling a subject. Students are able to observe, listen,

take notes, and replicate the teacher's demonstrations while the teacher is speaking. Although this is a well-known and beneficial strategy, educators can modify it to fit various learning contexts.

4.3. Technology-based Learning

Technology can be used by teachers in the classroom to improve student learning and streamline the teaching process. Students can read books, do research, or play instructional games on gadgets like computers and iPads. Additionally, kids can access documents or other resources from home or at school thanks to cloud computing capabilities. Video conferencing software-based virtual classrooms can be an excellent tool for remote learning. For kids with disabilities who would find it difficult to concentrate in a traditional classroom setting, this might be extremely beneficial.

4.4. Group learning

One way to educate pupils collaborative skills is to divide them into groups. They can have discussions about many topics and discover other people's viewpoints. In order for students to communicate with one another, ask and answer questions, and share knowledge with the class, it is critical to support their listening comprehension as well as their involvement in class.

4.5. Individual Learning

Students may find group projects to be stimulating, but in order to prepare them for working independently, it's also critical to support individual learning. Giving kids journal entry assignments is a great approach to allow them to reflect on subjects and formulate ideas and analyses. This is especially useful so that students have ideas for what to say before leading a class discussion. Instructors can offer writing projects to pupils who are unable to speak up during class in order to award them with points.

4.6. Inquiry-based learning

The concept of learning by investigation is supported by inquiry-based learning, where students work independently to complete assignments, pose questions, and discover solutions. These days, teachers serve as resources, but the intention is for students to solve issues and find knowledge on their own. Once they have mastered a subject, they can further cement it in their memory by presenting and explaining it in their own terms. After this, pupils can go at their own speed to higher levels. Students can participate actively in the learning process in this way.

4.7. Kinesthetic Learning

The idea of learning through movement is known as kinesthetic learning. During a presentation, teachers can move around the classroom and make hand gestures to engage students both viscerally and kinesthetically. Additionally, they can inspire kids to engage

in physical activities that allow them to express themselves creatively and freely. Here are some suggestions: constructing, playing, acting, and drawing.

4.8. Game-based Learning

Develop and execute educational games or challenges, whether in-person or online, to help children get more passionate about learning and to refresh your teaching methods. These can excite kids and help them stay focused on the teachings, especially kinesthetic learners, by encouraging them to participate more fully in the learning process. It may also provide them the chance to address issues and accomplish a goal.

5. EVOLUTION OF TEACHING METHODS

With the correct teaching strategies, teachers can make the classroom a fun and effective place where students may acquire critical intellectual and social skills that will benefit them for the rest of their lives. A teacher can serve students with diverse interests, skill levels, and learning styles using a variety of frameworks. To increase the likelihood that pupils will succeed in the classroom, the instructor may find it helpful to learn about innovative instructional practices in the industry. In recent years, the system has undergone a significant evolution. These days, technology is a helpful tool for improving learning and teaching abilities. Technology makes it simple to provide audio-visual education. In every aspect of teaching and learning, computers are a helpful tool. In order to facilitate idea exchange between students and teachers, multimedia technologies are used in schools and universities. Universities in wealthy nations can now offer technology-based education. At all educational levels, there is a clear evolution in the way that technology is integrated into teaching and learning. The integration of technology and education has altered both the responsibilities of instructors and students in the classroom. The traditional technique of instruction in a classroom with four walls is no longer used by teachers.

6. ROLE OF AI TOOLS IN EDUCATION

The field of education has been revolutionized by AI, with a complete transformation in how knowledge is acquired by students and how their learning experiences are enhanced. Through the utilization of machine learning algorithms, individual student needs can be catered to, leading to personalized learning experiences. Furthermore, education has been made more accessible than ever before, courtesy of AI tools. Students with disabilities or varying learning styles can now avail themselves of AI-powered assistive technology, which offers tailored support and accommodations. This equalizes the playing field, ensuring that every student is provided with equal opportunities to succeed. For instance, students with speech impairments can actively participate in classroom discussions with the assistance of AI-powered speech recognition software.

Furthermore, the potential for enhancing student engagement and motivation lies

within AI. AI-driven virtual tutors have the capability to interact with students, delivering personalized feedback and guidance. It is imperative to recognize that while AI holds tremendous promise in education, it must not supplant human teachers. The role of educators remains paramount in guiding and mentoring students, nurturing critical thinking skills, and offering emotional support. AI ought to be regarded as a valuable tool that supplements and enriches the teaching and learning process, rather than a replacement for human interaction. The landscape of education has been revolutionized by AI tools, offering tailored learning experiences, increasing accessibility to education, and fostering student engagement. With ongoing advancements in AI technology, the future of education is brimming with potential, poised to evolve and adapt to the ever-changing needs of students.

7. AI TOOLS FOR STUDENTS

The targeted approach to teaching facilitated by AI is one of its key advantages in education. In traditional classroom settings, catering to the diverse learning needs of students often poses challenges. However, with AI, complex concepts can now be grasped more effectively and at the individual pace of each student. The adaptive nature of AI algorithms ensures that students receive tailored instruction, guaranteeing full comprehension of the material before progressing. This personalized approach has been demonstrated to significantly enhance academic performance and retention rates. Moreover, AI has the potential to elevate student engagement and motivation. Virtual tutors powered by AI can interact with students, offering personalized feedback and guidance. An AI-powered tutoring tool for students can adjust its teaching methods to accommodate individual learning styles and preferences, thereby making the learning process more engaging and enjoyable. By incorporating interactive elements such as gamification and virtual reality, AI can create immersive learning experiences that capture students' attention and cultivate a passion for learning.

8. TYPES OF AI TOOLS

In the realm of educational journeys, a plethora of AI tools tailored for students is now at their disposal. These tools, meticulously crafted, serve not only to augment the learning process but also to furnish invaluable insights and individualized assistance. Delve into some of the foremost types of AI tools for students, thereby enabling you to discern the optimal ones suited to your requirements.

- AI based Learning Management Systems (LMS)
- AI powered Tutoring Tools for Students
- AI Tools for Language Learning

9. AI BASED LEARNING MANAGEMENT SYSTEMS (LMS)

The way students interact with course materials and assessments has been completely revolutionized by AI-based Learning Management Systems. Through the

utilization of advanced AI algorithms, student performance data is analyzed and actionable insights are provided. Personalized learning resources are recommended, areas needing additional practice are highlighted, and progress is tracked over time, all thanks to machine learning algorithms. This results in a highly customized and effective learning experience for students.

10. AI POWERED TUTORING TOOLS FOR STUDENTS

The popularity of AI-powered virtual tutors has surged among students. These tutoring tools, driven by AI, serve as personalized mentors, delivering customized lessons, explanations, and feedback. Through analysis of student responses and progress, areas requiring additional support can be identified and targeted assistance provided by AI tutors. This tailored approach guarantees that students receive the necessary help to excel, irrespective of their learning pace or style.

11. AI TOOLS FOR LANGUAGE LEARNING

The challenges of learning a new language are now made more accessible and engaging through the use of AI tools. Interactive language learning experiences are being developed with the help of AI technologies. These tools have the capability to:

- Simulate real-life conversations
- Analyze pronunciation
- Adapt lessons based on individual progress.

By harnessing the power of AI, students can immerse themselves in a dynamic environment where they can practice and improve their language skills, thereby enhancing their fluency and confidence.

11.1. Grammarly

Utilize Grammarly, an AI-powered writing assistant, to enhance your writing skills. Mistakes in grammar, spelling, punctuation, and style can be detected and corrected in real-time by Grammarly. This tool proves invaluable for students tackling essays, term papers, and other academic assignments.

Features

- Transform your writing from email threads to comment threads, from texts to theses, ensuring that your best work is showcased to the world. Let Grammarly be your guide, providing instant writing guidance that is both intelligent and accessible whenever you need it.
- Errors such as typos, missing punctuation, or commonly confused words can be caught before they detract from your reader's experience.
- Receive valuable guidance on adjusting the mood and attitude of your writing without altering your intended meaning.

- Utilize clarity suggestions to ensure that your writing is easily comprehensible to your audience.
- Harness the power of Grammarly's generative AI to assist you in writing, rewriting, ideating, and responding with simple prompts or at the click of a button. With a Grammarly plan, you'll receive a monthly allowance of prompts to kickstart your writing process with AI assistance, and you'll be amazed at the results.
- Maintain your unique voice while leveraging generative AI with customizable profile options for tone, formality, and professional relevance.
- Promote consistency within your team's communication by applying shared guidelines that encourage the use of language and tones unique to your brand.
- Discover new ways to enhance your writing with Grammarly's generative AI, which not only identifies ways to improve but also provides alternative versions for your consideration.

12. NOTION

Access to the powerful set of AI features known as Notion AI is available within any Notion account. To grasp the capabilities of the new Notion AI tools, understanding Notion itself is essential. Introduced in 2013, Notion serves as a customizable online workspace solution. Its true value lies in its versatility, offering valuable features suitable for students, individuals, teams, or businesses alike. Rather than using multiple tools like Google Docs, Trello, and Hootsuite, you can turn to Notion, where you'll find the same functions in one dashboard.

Notion's user-friendly functionality enables the accomplishment of multiple tasks effortlessly, including:

- Personal project, work, or school goal tracking.
- Utilizing templates for creating various items such as lists, budgets, project management dashboards, and content calendars.
- Utilizing built-in note-taking and scheduling tools.
- Journaling or tracking processes.
- Importing data from other programs like Word, HTML, or Google Docs.
- Collaborating with teammates.
- Integrating dozens of other tools like Slack, Zoom, Asana, and Dropbox.

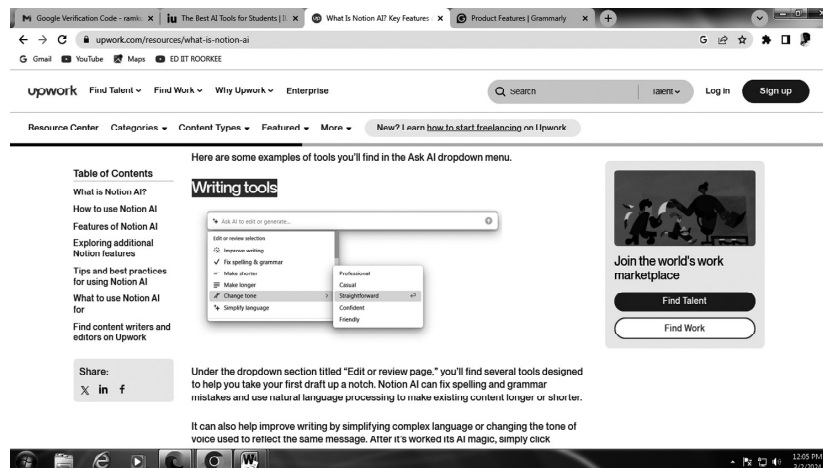
The features of Notion AI can streamline your workflow by creating summaries, answering questions, and automating tedious tasks. Next, a closer examination of Notion AI's features and accessing them will be conducted.

Notion can be utilized by students to:

- Create to-do lists.
- Take class notes.

- Collaborate with classmates.
- Maintain organization throughout their studies.

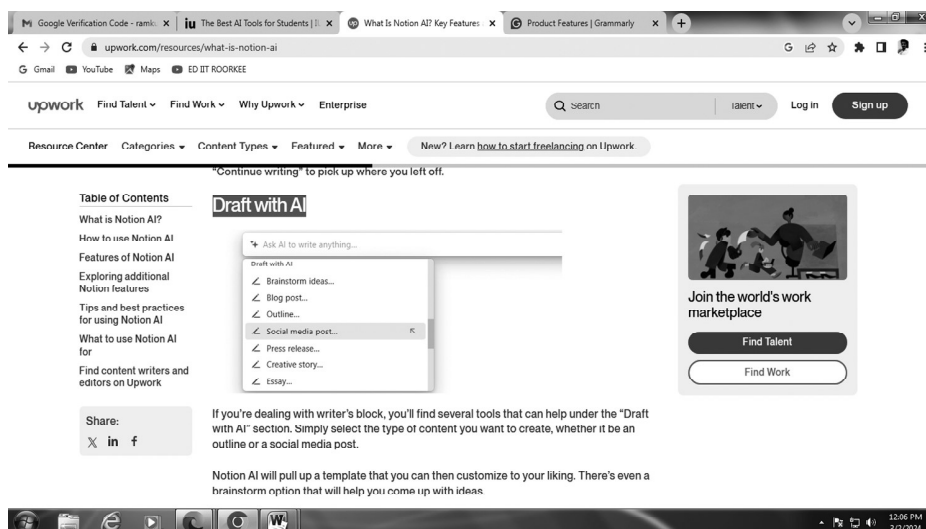
13. WRITING TOOLS



In the “Edit or review page” dropdown section, you will discover a plethora of tools meticulously crafted to elevate your initial draft. Spelling and grammar errors are effortlessly rectified by Notion AI, while natural language processing seamlessly adjusts content length as needed.

Additionally, complex language is simplified and tone of voice can be modified to maintain the message’s integrity. Once the AI completes its enhancements, simply proceed by clicking “Continue writing” to seamlessly resume your work.

14. DRAFT WITH AI



If writer's block is something you're grappling with, you'll discover numerous tools that can assist you in the "Draft with AI" section. Various types of content can be selected, whether it's an outline or a social media post. A template will be presented by Notion AI, which can then be tailored to your preferences. Additionally, there is a brainstorming feature available to help generate ideas.

15. COLLABORATE WITH TEAM MEMBERS

The screenshot shows the Upwork website interface. The main content area is titled "Collaborate with team members" and includes the following text: "Notion also offers an excellent set of collaboration tools for teams and businesses. You can invite new owners to join your workspace by clicking on the 'Members' tool in the left-hand main menu." Below this text is a form for adding members, with fields for "Invite link" and "Add members". To the right of the form is a call to action: "Join the world's work marketplace" with buttons for "Find Talent" and "Find Work".

Notion also provides an outstanding array of collaboration tools for teams and businesses. New owners can be invited to join your workspace by clicking on the "Members" tool in the left-hand main menu.

From there, an invite link can be emailed to new members or a domain can be created for users with allowed email addresses to automatically join. Ensure that Notion's billing structure is reviewed and understand how adding members affects your subscription price.

After members have been added, the option on the main menu titled "Create a team space" should be clicked. This will enable the creation of a space where each team member can organize their own work and access shared documents.

16. COPYSCAPE

Copyscape, a widely used online service, is employed by numerous businesses, professionals, writers, and others to verify the originality of their content. Its primary function is to detect plagiarism and ensure the authenticity of online material. This tool, among the many AI writing software options available, has gained significant recognition within the digital marketing sphere.

The internet is scanned by Copyscape to identify fraudulent, stolen, or plagiarized

content. Depending on the plan purchased, users may receive daily reports to monitor any new instances of their material being detected by Copyscape. Rest assured; you will always remain informed if your content is being utilized without permission.

17. FREE DOWNLOAD FOR A COPYSCAPE WEBSITE BANNER

- Free website banners are provided by Copyscape for customers to download and post on their site.
- Upon encountering this banner, individuals seeking to plagiarize and republish content may be dissuaded.
- Furthermore, a level of credibility is bestowed upon your material in the eyes of customers.
- It communicates that thorough research has been conducted and original content has been authored.

18. USES GOOGLE AS A SEARCH PROVIDER

- Copyscape utilizes Google as its search provider.
- Under the agreed terms, Google is scanned by Copyscape for any content similar to or directly matching yours.
- Given that Google receives billions of visitors per day searching the site, it is inevitable that your material will surface somewhere.
- By employing Copyscape, you can effectively halt plagiarism in its tracks before it reaches unsuspecting internet surfers.

19. ONLINE FORUM FOR TROUBLESHOOTING

- Copyscape provides a convenient online platform for Copyscape users to discuss issues, share tips, or engage in any other topic related to the service.
- This forum is ideal for individuals seeking quick resolutions to simple issues and who do not require assistance from customer service.

20. OTTER.AI

Transforming spoken language into written text, this convenient transcription tool is indispensable. Students seeking to transcribe lectures, interviews, or class discussions will find it especially beneficial. With Otter.ai, recorded audio files can be effortlessly reviewed and searched, facilitating study and reference of crucial information.

21. OTTER PILOT

Automatically join your Zoom, Google Meet, or Microsoft Teams meetings with Otter Pilot and have the meetings transcribed in real-time. Maximize efficiency during and after your meeting by leveraging the features of Otter Pilot. Otter AI Chat offers a seamless platform for participants to ask questions and engage in real-time collaboration

with the transcription, without disrupting the flow of the meeting. Otter Chat is suitable for use both during and after meetings. Utilize Otter Chat to gain deeper insights into your discussions and produce content to enhance your workflows. The essence of Otter lies in its conversations. Your conversations can be edited, collaborated on, and interacted with. Teams and organizations, Otter Workspaces have been meticulously crafted to offer an intuitive interface that optimizes collaboration, team management, and administrative controls.

22. CONCLUSION

The main purpose of this chapter has been to enable you as a teacher to identify the classroom teaching methods that are most likely to support the development of the knowledge and skills that students or learners will need in a digital age. We still have a way to go before we have all the information and tools needed to make this decision, but we can at least have a stab at it from here, while recognising that such decisions will depend on a wide variety of factors, such as the nature of the learners and their prior knowledge and experience, the demands of particular subject areas, the institutional context in which teachers and learners find themselves, and the likely employment context for learners. We can also identify that in terms of content, we need teaching methods that enable students to manage information or knowledge, rather than methods that merely transmit information to students.

REFERENCES

1. Goel, A. K., & Joyner, D. A. (2017). Using AI to Teach AI: Lessons from an Online AI Class. *AI Magazine*, 38(2), 48-58. <https://doi.org/10.1609/aimag.v38i2.2732>
2. Sabina Jeschke, Lars Knipping, & Olivier Pfeiffer. (2007). *Potential of Teaching with Intelligent Digital Chalkboards: Recent developments of the eChalk System*. In *2nd International Conference on Interactive Mobile and Computer Aided Learning (IMCL2007)* (pp. 1-11). International Federation of Engineering Education Societies (IFEES). <https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=3cb0e1d28ef7800f30fba29bac62e60be153c525>
3. Umang Dhuria, & Nilakshi Jainb. (2020). Teaching Assessment Tool: Using AI and Secure Techniques. *I.J. Education and Management Engineering*, 3, 12-21. <https://doi.org/10.5815/ijeme.2020.03.02>
4. Vinay, S. B. (2023). Application of Artificial Intelligence (AI) in School Teaching and Learning Process - Review and Analysis. *International Journal of Information Technology and Management Information Systems (IJITMIS)*, 1(1), 1-5. <https://doi.org/10.17605/OSF.IO/AERNV>
5. Davy Tsz Kit Ng, Jac Ka Lok Leung, Jiahong Su, & Ross Chi Wui Ng1. (2023). Teachers' AI digital competencies and twenty first century skills in the post pandemic world. *Education Tech Research Dev*, 71, 137-161. <https://doi.org/10.1007/s11423-023-10203-6>
6. Smith, J. The Impact of Artificial Intelligence on Education: A Comprehensive Review. *Journal of Educational Technology*, 10(2), 45-62.
7. Johnson, A. B. Integrating AI Tools in the Classroom: Opportunities and Challenges. *Educational Psychology Review*, 15(3), 201-218.
8. Wang, C., & Lee, S. Personalized Learning through AI: A Case Study of Implementation in Secondary Education. *International Journal of Artificial Intelligence in Education*, 8(4), 301-315.

9. Engagement with AI-Powered Virtual Tutors. *Educational Technology Research and Development*, 25(1), 87-102.
10. *The best AI tools for students | IU international*. (2023, September 11). IU International University of Applied Sciences. Retrieved March 6, 2024, from <https://www.iu.org/en-in/blog/ai-and-education/best-ai-tools-for-students>
11. *Teaching Methods*. (2023). Best Online teachers, Home tutors, Assignment help | TeacherOn. Retrieved March 6, 2024, from <https://www.teacheron.com/tutor-profile/6kLu>
12. *Teaching Methods*. (2023). Best Online teachers, Home tutors, Assignment help | TeacherOn. Retrieved March 6, 2024, from <https://www.teacheron.com/tutor-profile/7Rdd>
13. *Teaching Methods*. (2023). Best Online teachers, Home tutors, Assignment help | TeacherOn. Retrieved March 6, 2024, from <https://www.findtutors.co.uk/tutor/sana-hasan-hasan.htm>
14. *AI- Powered Writing Assistant*. (2009). Grammarly. Retrieved February 20, 2024, from <https://grammarly.com>
15. *AI in decision making: Best AI tool for student*. (2023, December 9). LinkedIn. Retrieved March 5, 2024, from <https://www.linkedin.com/pulse/best-ai-tool-student-varshini-b-r8nac/>
16. *Teaching Methods*. (2023). Applied Nova Academy. Retrieved March 2, 2024, from <https://www.appliednovaacademy.org>
17. *Lecture Based Learning*. (2023). Superprof. Retrieved March 2, 2024, from <https://www.superprof.com.my/graduate-and-teaching-english-and-logical-reasoning-for-all-level-easy-method.html>
18. *What is a method that most lecturers and teachers use?* (2023). Spain Exchange. Retrieved March 4, 2024, from <https://www.spainexchange.com/faq/what-is-a-method-that-most-lecturers-and-teachers-use>
19. *Ask AI Q&A*. (2023). Notion. Retrieved March 3, 2024, from <https://notion.com>
20. *AI Meeting Note Taker & Real-time AI Transcription*. (2023, November 10). Otter.ai-. Retrieved February 28, 2024, from <https://otter.ai>
21. Craig. (2023, November 20). *Grammarly AI: Revolutionize your writing experience*. MyPlaceIsHome.com. Retrieved March 5, 2024, from <https://myplaceishome.com/grammarly-ai-revolutionize-your-writing-experience>
22. *About Copyscape*. (2023). Copyscape Plagiarism Checker - Duplicate Content Detection Software. Retrieved March 1, 2024, from <https://copyscape.com>