



Module 2

ARTIFICIAL INTELLIGENCE (AI)

February 2025



Table of content

Document summary	3
1 AI fundamentals	4
1.1 What is Ai?	4
1.2 How it started	5
2 How does Artificial Intelligence work?	6
2.1 Types of AI	6
2.2 AI Subfields	6
Machine Learning	7
Neural Networks	7
Deep Learning	7
3 Use of AI	7
3.1 Where is AI used?	7
3.2 How is AI helping in our life?	7
3.3 Areas where AI is mostly used	8
4 Advantages of AI	9
5 AI tools for EDOs	10
5.1 Technical writing aids	10
5.2 Available tools	10
5.3 Choosing the right tool	11
6 AI Governance	13
6.1 Ethical considerations and authorship	13
6.2 Governance principles in implementing AI	13
6.3 Legal and regulatory frameworks	14
7 The future of AI	15
7.1 The power behind writing tools: Features and capabilities	15
7.2 Future of writing: AI writing Tools' impact and evolution	16
9 Conclusion	17



Document summary

Artificial Intelligence (AI) has revolutionized the way we approach writing, offering tools that can enhance productivity, creativity, and accuracy. This document provides guidance on how to leverage AI for various writing tasks, including documents, Requests for Proposals (RFPs), emails, and government funding requests. It also includes practical examples to help you navigate these processes seamlessly.

Machine Learning (ML), a subset of AI enables computers to learn from data and improve performance over time without explicit programming. In writing tools, ML helps refine grammar suggestions, detect writing patterns, and enhance predictive text capabilities.

Natural Language Processing (NLP) is a branch of AI that helps machines understand, interpret, and generate human language. In writing, NLP powers tools that:

- Detect grammar and spelling errors.
- Suggest sentence structure improvements.
- Offer better word choices through a thesaurus.
- Summarize long texts into concise formats.

AI-powered writing tools enhance productivity and improve the quality of written content. Selecting the best AI tool depends on your specific writing needs. Grammar, style, creativity, brainstorming, summarization, paraphrasing, readability improvement should be considered.

While AI writing tools are beneficial, they should be used ethically. using them responsibly ensures that your content remains original, unbiased, and of quality. Important considerations include plagiarism, bias, privacy, security and human oversight.

For EDOs who spent a lot of time in documentation, AI writing tools enhance efficiency, accuracy, and creativity. By understanding AI, NLP, and data governance, EDOs can make informed decisions about integrating AI tools into their daily workload.



1 AI fundamentals

1.1 What is Ai?

Artificial intelligence (AI) is technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision making, creativity and autonomy.

Applications and devices equipped with AI can see and identify objects. They can understand and respond to human language. They can learn from new information and experience. They can make detailed recommendations to users and experts. They can act independently, replacing the need for human intelligence or intervention (a classic example being a self-driving car).

AI encompasses a broad spectrum of capabilities, from solving complex problems to mimicking human-like thinking processes. Artificial Intelligence Software enables machines to reason, perceive, and adapt in ways that make them not just powerful tools but also potential partners in various aspects of life. Artificial Intelligence is efficient in learning from experience, understanding natural language, recognising patterns, and making data-based decisions.

You can think of AI as being a form of intelligence that is used to solve problems, come up with solutions, answer questions, make predictions, or offer strategic suggestions.

Because AI can do all these things, it's become incredibly important to modern businesses and other types of organizations.

According to StatsCan, the adoption rate of Ai in professional, scientific, and technical services, which the EDOs job falls in, is 13.7% in 2024. That means 13 businesses out of 100 trained, tried or regularly use AI

Use of artificial intelligence (AI) by selected industries in producing goods or delivering services over the last 12 months, second quarter of 2024

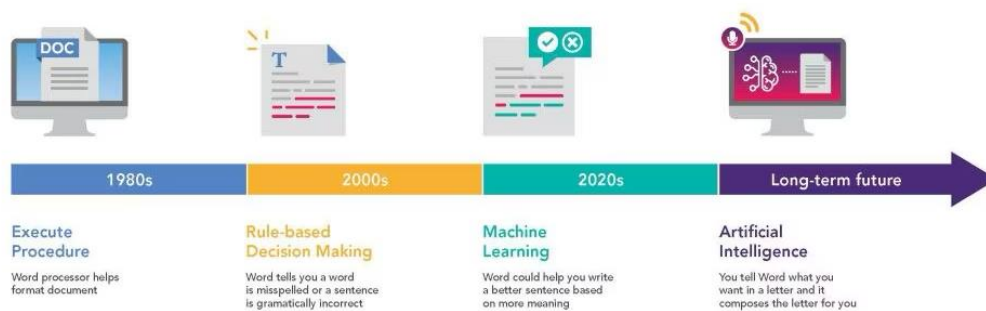
Type of AI application used	All industries	Information and cultural industries	Professional, scientific and technical services	Finance and insurance
	percent of businesses			
AI used in producing goods or delivering services	6.1	20.9	13.7	10.9



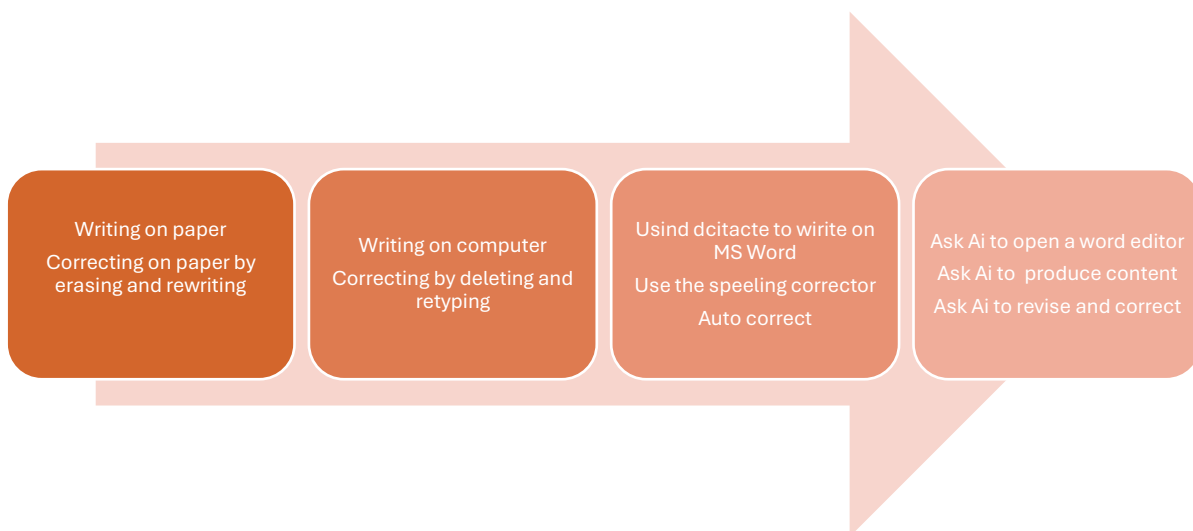
1.2 How it started

AI, which was introduced as an area of science in the mid 1950s, has evolved rapidly in recent years. It has become a valuable and essential tool for orchestrating digital technologies and managing business operations. Particularly useful are AI advances such machine learning and deep learning. Its important to recognize that AI is a constantly moving target. Things that were once considered within the domain of artificial intelligence – optical character recognition and computer chess, for example – are now considered routine computing. Today, robotics, image recognition, natural language processing, real-time analytics tools and various connected systems within the Internet of Things (IoT) all tap AI to deliver more advanced features and capabilities.

History of artificial intelligence



The diagram above shows how artificial intelligence has evolved. Below you can see an evolution example for document writing.



2 How does Artificial Intelligence work?

AI systems work by combining large sets of data with intelligent, iterative processing algorithms to learn from patterns and features in the data that they analyze. Each time an AI system runs a round of data processing; it tests and measures its own performance and develops additional expertise. Because AI never needs a break, it can run through hundreds, thousands, or even millions of tasks extremely quickly, learning a great deal in very little time, and becoming extremely capable at whatever it's being trained to accomplish.

But the trick to understanding how AI truly works is understanding the idea that AI isn't just a single computer program or application, but an entire discipline, or a science. The goal of AI science is to build a computer system that is capable of modeling human behavior so that it can use human-like thinking processes to solve complex problems.

To accomplish this objective, AI systems utilize a whole series of techniques and processes, as well as a vast array of different technologies. By looking at these techniques and technologies, we can begin to really understand what AI does, and thus, how it works, so let's look at these types of AI.

2.1 Types of AI

The three types of AI are:

1. Artificial Narrow Intelligence (ANI): Also known as Weak AI, it specializes in performing specific tasks and lacks general cognitive abilities.
2. Artificial General Intelligence (AGI): Refers to Strong AI capable of understanding, learning, and applying knowledge across various domains, like human intelligence.
3. Artificial Superintelligence (ASI): Hypothetical AI surpassing human intelligence in all aspects, potentially capable of solving complex problems and making advancements beyond human comprehension.

2.2 AI Subfields

AI works by combining large amounts of data with fast, iterative processing and intelligent algorithms, allowing the software to learn automatically from patterns or features in the data. AI is a broad field of study that includes many theories, methods and technologies, as well as the following major subfields:



Machine Learning

Machine learning automates analytical model building. It uses methods from neural networks, statistics, operations research and physics to find hidden insights in data without explicitly being programmed for where to look or what to conclude.

Neural Networks

A neural network is a type of machine learning that is made up of interconnected units (like neurons) that processes information by responding to external inputs, relaying information between each unit. The process requires multiple passes at the data to find connections and derive meaning from undefined data.

Deep Learning

Deep learning uses huge neural networks with many layers of processing units, taking advantage of advances in computing power and improved training techniques to learn complex patterns in large amounts of data. Common applications include image and speech recognition.

3 Use of AI

3.1 Where is AI used?

Artificial intelligence is frequently utilized to present individuals with personalized suggestions based on their prior searches and purchases and other online behavior. AI is extremely crucial in commerce, such as product optimization, inventory planning, and logistics. Machine learning, cybersecurity, customer relationship management, internet searches, and personal assistants are some of the most common applications of AI. Voice assistants, picture recognition for face unlocking in cellphones, and ML-based financial fraud detection are all examples of AI software that is now in use.

3.2 How is AI helping in our life?

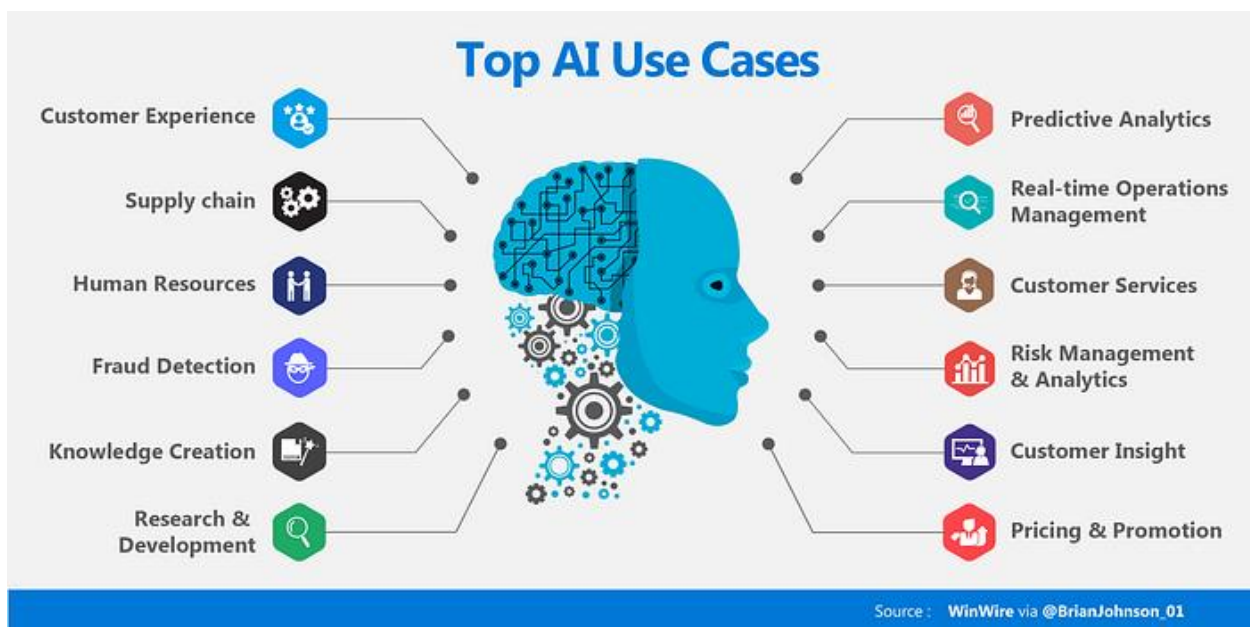
AI (Artificial Intelligence) and Machine Learning -powered software and gadgets mimic human brain processes to assist society in advancing with the digital revolution. AI systems perceive their environment, deal with what they observe, resolve difficulties, and take action to help with duties to make daily living easier. People check their social media accounts on a frequent basis, including Facebook, Twitter, Instagram, and other sites. AI is not only customizing your feeds behind the scenes, but it is also recognizing and deleting bogus news. So, AI is assisting you in your daily life.



3.3 Areas where AI is mostly used

The main seven areas of AI are:

1. Machine Learning: Involves algorithms that enable machines to learn from data and improve their performance without explicit programming.
2. Natural Language Processing (NLP): Focuses on enabling computers to understand, interpret, and generate human language.
3. Computer Vision: Deals with giving machines the ability to interpret and understand visual information from images or videos.
4. Robotics: Combines AI and mechanical engineering to create intelligent machines capable of performing tasks autonomously.
5. Expert Systems: Utilizes knowledge and reasoning to solve complex problems in specific domains, mimicking human expertise.
6. Speech Recognition: Involves converting spoken language into text or commands, enabling machines to interact with users through speech.
7. Planning and Decision Making: Focuses on algorithms that allow AI systems to make choices and optimize actions to achieve specific goals



4 Advantages of AI

The advantages of AI include reducing the time it takes to complete a task, reducing the cost of previously done activities, continuously and without interruption, with no downtime, and improving the capacities of people with disabilities. AI offers numerous benefits across various industries and applications. Some of the most known benefits are presented in this table:

Benefit	Description
Automation of repetitive tasks	AI can automate routine, repetitive, and often tedious tasks, including digital tasks such as data collection, entering, and preprocessing, and physical tasks such as warehouse stock-picking and manufacturing processes. This automation frees workers to focus on higher value, more creative work.
Enhanced decision-making	AI enables faster, more accurate predictions and reliable, data-driven decisions. Whether used for decision support or fully automated decision-making, AI helps businesses to act on opportunities and respond to crises in real time and without human intervention.
Fewer human errors	AI can reduce human errors by guiding people through the proper steps of a process, flagging potential errors before they occur, and fully automating processes without human intervention. Machine learning algorithms improve accuracy as they are exposed to more data and "learn" from experience.
24x7 availability	AI is always on, available around the clock, and delivers consistent performance every time. AI chatbots or virtual assistants lighten staffing demands for customer service or support, while AI can maintain consistent work quality and output levels in other applications.
Reduced physical risks	By automating dangerous work such as animal control, handling explosives, and performing tasks in hazardous environments, AI eliminates the need to put human workers at risk. Self-driving cars and other vehicles offer the potential to reduce the risk of injury to passengers.



5 AI tools for EDOs

5.1 Technical writing aids

As EDOs produce a lot of documentation, aids for brainstorming, writing assistants, grammar, spellcheck, and thesaurus, can be helpful. AI tools can assist in various aspects of writing, making the writing more efficient and effective. Some popular AI writing tools include:

- **Brainstorming:** Tools like GPT-3 can generate ideas and suggestions for writing topics. ChatGPT and Jasper AI work well.
- **Writing Assistants:** Tools such as Jasper and Writesonic can help draft and refine content. For condensing content, QuillBot is a good choice.
- **Grammar and Spellcheck:** Grammarly offers real-time grammar, punctuation, and spellcheck services. Grammarly and ProWritingAid are ideal for grammar focus.
- **Thesaurus:** Tools like Thesaurus.com provide synonyms and antonyms to diversify vocabulary. Hemingway helps make complex writing clearer

5.2 Available tools

Obviously, there are more editors and assistants than the ones previously listed. These tools can streamline the writing process, enhance creativity, and ensure high-quality outputs.

Let's dive into the most common uses cases.

Tool Name	Description	Main Usages	Example Use Case
Grammarly	AI-powered grammar and spell checker with style and clarity suggestions.	Grammar correction, spell check, tone adjustments, and clarity improvements.	A writer uses Grammarly to proofread an RFP before submission, ensuring professional and error-free writing.
Hemingway Editor	Highlights complex sentences and suggests simpler alternatives to improve readability.	Improving clarity, conciseness, and readability of technical writing.	A grant writer uses Hemingway to simplify a dense project description, making it easier for funders to understand.



QuillBot	AI-based paraphrasing tool that rewrites content while preserving meaning.	Rewording text, summarizing, and enhancing vocabulary.	A content writer uses QuillBot to paraphrase a government briefing into a simplified summary for internal use.
ChatGPT	Conversational AI model that assists with writing, idea generation, and content creation.	Brainstorming, drafting, and refining text across various formats.	A project manager uses ChatGPT to generate a first draft of a technical proposal outline.
Jasper AI	AI writing assistant for marketing, sales, and technical content.	Creating structured content, generating marketing copy, and automating reports.	A team uses Jasper AI to generate an executive summary for a technical report.
ProWritingAid	A comprehensive editing tool providing grammar, style, and structure feedback.	Style improvement, plagiarism detection, and readability enhancement.	A business analyst uses ProWritingAid to refine a government briefing document.
Notion AI	AI-powered tool within Notion for summarizing, brainstorming, and organizing notes.	Idea organization, summarization, and content structuring.	A researcher uses Notion AI to summarize meeting notes into key takeaways.
Scrivener	A word processor designed for long-form writing, with organizational tools.	Drafting books, research papers, and complex documents.	A technical writer uses Scrivener to manage multiple sections of a grant proposal.

5.3 Choosing the right tool

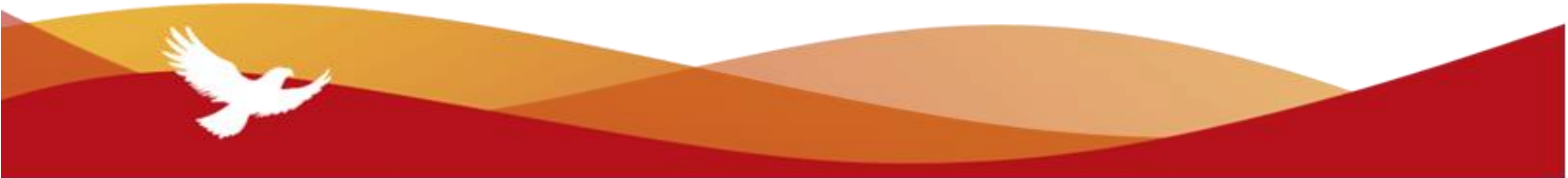
Selecting an AI writing tool can significantly enhance your writing process, whether it's marketing content creation, academic articles, or creative fiction writing. But selecting which tool best meets your needs takes careful consideration of several key factors. Consider your needs (grammar checking, idea generation, summarization, etc.) when selecting a tool.



Many tools integrate with Microsoft Word, Google Docs, and other writing platforms for seamless editing. Basic versions of most tools offer fundamental editing, while premium versions provide advanced AI-powered insights.

Here are the essential criteria to help select an effective AI writing tool:

Consideration	Details
Functionality	Determine specific writing tasks: brainstorming ideas, grammar checks, SEO optimization. Choose a tool that meets primary requirements.
Ease of Use	Tool should have an intuitive interface. Look for clear instructions and accessible support services.
Integration Capabilities	Check if the tool integrates with programs like word processors or content management systems.
Cost and Benefit Analysis	Investigate pricing models: subscription-based, one-time purchase, pay-per-use. Compare costs and features.
Free Trials and Demos	Check for free trials or demo versions to test capabilities without financial commitment.
User Experience and Support	Read customer reviews and feedback. Ensure adequate customer support is available.
Scalability	Determine if the tool can scale with increasing demands without performance degradation.
Updates and Improvements	Choose tools with regular updates for bug fixes and feature enhancements.
Security and Privacy	Check security features, data storage, access, and precautionary measures. Ensure compliance with data protection laws.



6 AI Governance

6.1 Ethical considerations and authorship

As AI tools become capable of producing large volumes of high-quality content, questions about authorship and originality will become more pressing. They also rely on data to learn and make decisions. Ensuring these tools are free from biases present in their training data is crucial to avoid perpetuating stereotypes or inaccuracies in AI-generated content. When we look at published content on many platforms, including social media platforms, AI is obviously overused. Therefore, there is a need for greater transparency regarding the extent of AI involvement in published content. This could involve disclosures about how much content is AI-generated versus human-edited, maintaining trust and integrity in professional writing.

6.2 Governance principles in implementing AI

Once you decide to adopt AI, whether it is rarely or regularly used, it is important to apply these principles throughout the use of AI tools.

Fairness and inclusion

Although machine learning, by its very nature, is a form of statistical discrimination, the discrimination becomes objectionable when it places privileged groups at systematic advantage and certain unprivileged groups at systematic disadvantage, potentially causing varied harms. To encourage fairness, practitioners can try to minimize algorithmic bias across data collection and model design, and to build more diverse and inclusive teams.

For example, some AI answers may not be suitable for EDOs report as they can apply mostly for a white population and not consider aboriginal people, which can lead a biased answer.

Robustness and security

Robust AI effectively handles exceptional conditions, such as abnormalities in input or malicious attacks, without causing unintentional harm. It is also built to withstand intentional and unintentional interference by protecting against exposed vulnerabilities.

Accountability and transparency



Organizations should implement clear responsibilities and governance structures for the development, deployment and outcomes of AI systems. In addition, users should be able to see how an AI service works, evaluate its functionality, and comprehend its strengths and limitations. Increased transparency provides information for AI consumers to better understand how the AI model or service was created.

Privacy and compliance

Many regulatory frameworks, including GDPR (Data protection), mandate that organizations abide by certain privacy principles when processing personal information. It is crucial to be able to protect AI models that might contain personal information, control what data goes into the model in the first place, and to build adaptable systems that can adjust to changes in regulation and attitudes around AI ethics.

Bias & Unintended outcomes

Machines are trained by humans, and human biases can be incorporated into algorithms.

If biased information, or data that reflects existing inequities, is fed to a machine learning program, the program will learn to replicate it and perpetuate forms of discrimination.

Ways to fight against bias in machine learning including carefully vetting training data and putting organizational support behind ethical artificial intelligence efforts, like making sure your organization embraces human-centered AI, the practice of seeking input from people of different backgrounds, experiences, and lifestyles when designing AI systems.

6.3 Legal and regulatory frameworks

Intellectual Property Rights

The rise of AI in writing will necessitate clear guidelines on intellectual property rights concerning AI-generated content. Who owns the content, how it can be used, and the rights of the AI versus the human operator will need to be legally defined.

Data Privacy Regulations

As AI writing tools handle more sensitive information, adherence to data privacy laws will be critical. Ensuring that AI tools comply with regulations like GDPR and CCPA will be essential for their widespread adoption.



7 The future of AI

AI writing tools are revolutionizing the way we write today. Artificial intelligence takes your mere ideas or thoughts and transforms them into polished content. Whether you're blogging, creating strategies for marketing content or creating complex narratives, these tools are created to eliminate writer's block and turn you into an overnight "wordsmith"

7.1 The power behind writing tools: Features and capabilities

AI writing tools are not just about replacing the traditional writing process; they will enhance and will transform it. These tools leverage advanced algorithms and machine learning techniques that are being perfected each day. AI will offer more and more features that can significantly improve any writing task's efficiency, creativity, and accuracy. Here's a closer look at the advanced capabilities of these powerful tools.

Feature	Description	Example Tools
Automation and Efficiency	Automate repetitive tasks, freeing up time for creativity. Produce draft articles within minutes.	Articoolo, Zyro
Enhanced Creativity	Suggest novel ideas, diverse vocabulary, and different writing styles.	Rytr
Accuracy and Polish	Improve accuracy and polish of content. Identify and correct errors, suggest stylistic improvements.	Ginger Software
Collaborative Writing	Facilitate collaboration among teams, allow multiple users to work on a document simultaneously.	Google Docs, Microsoft Editor
SEO Optimization	Ensure content is well-written and designed to perform well on search engines. Analyze keywords, suggest optimizations.	Clearscope, MarketMuse
Personalization and Adaptation	Learn from user interactions, adapt to writer's style and preferences over time.	ProwritingAid



AI writing tools have broad applications across various industries, revolutionizing how content is created, optimized, and delivered. These tools are not limited to traditional writers or content marketers but extend their utility to businesses, academics, and creative industries.

7.2 Future of writing: AI writing Tools' impact and evolution

The future of AI writing tools holds exciting possibilities for enhancing writing processes, improving content quality, and making writing more accessible to a broader audience. As we look to the future, the impact of these AI writing tools is expected to grow, bringing both advancements and challenges to the field of writing. Here's a glimpse into the AI writing tools potential future developments and innovations on the horizon:

Enhanced Natural Language

Understanding: Future AI writing tools are likely to exhibit a more sophisticated understanding of human language nuances, including regional dialects and industry-specific jargon. This will enable even more accurate and contextually appropriate content generation.

Voice-Activated Writing Assistance

As voice technology continues to advance, AI writing tools might evolve to offer more robust voice-command features, allowing users to dictate content and receive verbal feedback from the AI, enhancing accessibility and multitasking.

Interactive and Predictive Writing

AI tools could become more interactive, offering real-time suggestions and predictions based on the user's writing habits and preferences.



9 Conclusion

For EDOs the steps to successful AI use implies the followings steps



Embracing AI for Enhanced Writing

As we have explored the capabilities, applications, and future implications of AI writing tools, these technologies offer transformative potential for writers across all disciplines. By automating routine tasks, enhancing creativity, and ensuring high standards of grammatical precision, AI writing tools are redefining the boundaries of what is possible in the realm of writing.

In the competitive world of content creation, those who leverage AI effectively will find themselves at an advantage. By integrating AI writing tools, content creators can produce more relevant, engaging, and targeted writing in less time.

Impact on EDOs daily job

AI writing tools are likely to transform technical writing tasks rather than replace them. EDOs will have to develop new skills to work alongside AI effectively, such as data analysis and AI tool management. EDOs must quickly get educated on digital literacy and AI tool usage and even consider online or in-class courses on the subject. With AI handling more routine aspects of writing RFPs, SOW or briefing notes, EDOs could focus on tasks that require strategy and critical thinking, and emotional intelligence.

