AI Tools and Tips for Education

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Your AI Experience

Where does AI already play a role in your daily life?

1. What are some repetitive tasks you wish you could automate?

2. Where do you sometimes get blocked or overwhelmed in your creativity and thinking?

3. What are some things it is nice to “bounce off” of others’ ideas?

4. Where would exploring or integrating large or diverse data sets, resources, or ideas be useful?

5. What are your questions or concerns about AI?

Create Projects to Train AI as a Personal Assistant

What Project Clusters Might You Want to Create for Your Area?

Project #1

Objective:

Data & Inputs:

Tools & Methods:

Expected Output:

Action Plan

Project #2

Objective:

Data & Inputs:

Tools & Methods:

Expected Output:

Action Plan

Project #3

Objective:

Data & Inputs:

Tools & Methods:

Expected Output:

Action Plan

Project #4

Objective:

Data & Inputs:

Tools & Methods:

Expected Output:

Action Plan

Prompts: Generative Pre-Trained Transformer

Prompt Engineering Checklist

Step 1: Determine the Goal

☐ Ask Yourself: What is the exact outcome I need from the AI?

☐ Write It Down: Start with a simple sentence describing the task; refine to make it specific

☐ Clearly state the task (e.g., “Summarize,” “Analyze,” “Create a report”)

☐ Avoid vague words; specify what you’re asking ("Summarize 2Q sales by product category")

Step 2: Provide Context

☐ Ask Yourself: What background information will help the AI give a better answer?

☐ Add Context: Include any relevant information about the project, audience, or purpose

☐ Mention the audience if relevant (e.g., "Summarize for an executive report")

☐ Include any project names, specific departments, or other identifiers

☐ Describe the desired output type (e.g., “Summarize in bullet points for a client briefing”)

Step 3: Be Specific and Detailed

☐ Ask: Have I included all necessary details, such as data range or focus areas?

☐ Add Specifics: Define the scope or particular points for AI to cover

☐ Include dates or timeframes if relevant (e.g., “last quarter,” “since project start”)

☐ Specify any data focus (e.g., "Focus on training and travel expenses")

☐ Describe length or format, if applicable (e.g., “One paragraph,” “3-5 bullet points”)

Step 4: Structure the Request for Complex Tasks

☐ Ask Yourself: Should I break down the prompt into sequential parts?

☐ Divide Tasks: For multi-step tasks, prompt AI to address each part in order

☐ Use a sequence for detailed or complex responses ("First, summarize the main points; then highlight challenges")

☐ Group related information in the prompt if you need multiple pieces of data

Step 5: Specify Format and Tone (if needed)

☐ Ask Yourself: Is there a specific way I want this response structured?

☐ Describe the Format: If you need lists, tables, or a formal tone, mention it explicitly

☐ State formatting preferences (e.g., “Provide in bullet points”)

☐ Mention tone preferences (e.g., “Use formal language for a report”)

☐ Specify any additional formatting, such as labels or headings

Step 6: Experiment with Prompt Length and Simplicity

☐ Ask Yourself: Is my prompt too detailed or not detailed enough?

☐ Adjust Prompt Length: Rephrase if it’s too lengthy or oversimplified, aiming for a balance

☐ Keep prompts concise and avoid unnecessary words

☐ Ensure every part of the prompt contributes to clarity

☐ Re-evaluate if a shorter prompt works just as effectively

Step 7: Test and Refine

☐ Ask Yourself: Does the AI’s response meet my expectations? If not, what’s missing?

☐ Review and Adjust: Use feedback from AI’s initial response to improve your prompt

☐ Identify missing or incorrect information in the AI response

☐ Add or adjust details based on the response

☐ Try rephrasing if results aren’t accurate (e.g., “Rephrase to focus more on cost trends”)

Prompt Engineering Practice Using the Checklist:

Advanced Prompting Techniques

1. **Megaprompt:** Comprehensive message includes all details and instructions for a complex task

   Use Case: When generating reports with multiple sections or layers of detail (e.g., an executive summary, project updates, and next steps)

   Example: “Summarize Project Delta’s quarterly progress, listing completed milestones, current blockers, and next quarter’s action items. Present in bullet points for clarity.”

2. **Prompt Chaining**: Breaking down complex tasks into a series of smaller prompts

   Use Case: For multi-step processes, i.e., data analysis followed by interpretation and presentation

   Step 1: “Analyze last quarter’s expenses in training and travel.”

   Step 2: “Summarize the analysis findings in two sentences.”

   Step 3: “Present suggestions for cost-saving measures.”

3. **Frameworks for Structuring Prompts**:

   RTF/CTF (Role/Context, Task, Format): Ensures prompts are detailed and focused - “Act as a financial analyst, generate a cost analysis report for transportation services.”

   RASCEF (Role, Action, Steps, Context, Examples, Format): Covers all aspects of a task - “As a compliance officer, review the school’s data privacy policies and suggest improvements.”

   Expense Report RASCEF Prompt:

   Role: "Act as a financial analyst."
   Action: "Generate a quarterly expense report."
   Steps: "Break down expenses by category, summarize trends, and suggest adjustments."
   Context: "Use data from HR and Marketing budgets."
   Examples: "Refer to last quarter’s budget as an example."
   Format: "Present in a two-paragraph summary."

4. **Roles, Modes, and Tones**

   Roles: Asking AI to adopt a role for specialized tasks, like acting as a financial analyst, project manager, or HR specialist.

   Modes: Directing the AI’s approach or "mode" based on the task. (Intern, Idea Generator, Thought Partner, Critic, Teacher, Editor)

   Tones: Specifying the tone for a response to match a target audience or style. You can paste in reference material to establish tone patterns or designate a tone:
   (Academic, Confident, Conversational, Descriptive, Empathetic, Enthusiastic, Firm, Firm, Formal, Friendly, Humorous, Informal, Informational, Inspirational, Instructional, Lighthearted, Narrative, Persuasive, Poetic, Professional, Spartan Format: Blog, Bullets, Code, Email, Essay, Guide,

Keywords, Outline, Poem, Post, Presentation, Recipe, Recommendation, Report, Research, Song, Table, Training, Tweet)

5. **Formats and Commands**

   Formats: Specify the structure of the response (e.g., bulleted list, email format, table).

   "Summarize the main points of today's project meeting in bullet points."

   "Create a table comparing actual expenses vs. budgeted costs for Q1."

   Commands:

   Act as: Direct the AI to assume a specific role

   Brainstorm: Engage in creative exploration of ideas

   In Simple Terms: Simplify complex concepts for clarity

   List: Organize output as a list, ideal for task steps or itemized budgets

Checklist for Framework Application

1. **Choose a Prompt Type or Framework**: Megaprompt, Prompt Chain, RTF/CTF, RASCEF, TREF, etc.

   ☐ Does the prompt follow the structure?

   ☐ Are all elements (Role, Action, Steps, Context, Examples, Format) included?

2. **Select a Mode**:

   ☐ Is the AI acting as a Thought Partner, Intern, Editor, etc.?

   ☐ Does the mode fit the desired output type?

3. **Define Role, Tone, and Format**:

   ☐ Is the Role (e.g., financial analyst) relevant to the task?

   ☐ Is the Tone appropriate for the audience (e.g., professional for executive reports)?

   ☐ Is the Format (e.g., table, bullets) suitable for presenting the information?

Prompt Engineering Practice Using a Framework:

Graphics and Multimedia

What would work better as an image or video? How about music or narration?

- Infographics for school policies and funding allocations
- Visual dashboards for student performance and attendance tracking
- Automated reports for compliance and audit purposes
- Illustrations for district-wide newsletters and presentations

- Social media and website visuals
- Product illustrations & advertisements
- Visuals for proposals and pitch decks
- Before-and-after images for product demonstrations
- Product mockups for potential customers
- Infographics explaining construction chemical applications
- Diagrams for troubleshooting guides
- illustrations for training manuals
- AI-generated explainer videos for onboarding
- Scenario images for safety training
- Process flow diagrams for manufacturing
- Equipment maintenance visual guides
- AI-enhanced dashboards & reports for leadership
- Visual FAQs for customer education
- Product application simulations for online support

Graphics and Video Prompt Checklist

Be Specific and Detailed: Create a high-resolution image of a school principal reviewing a performance report on a tablet, with a team of administrators discussing student achievement data in the background

Specify the Style and Mood: Generate a professional, photorealistic image of a school board meeting, where officials are engaged in a discussion about funding allocations, with charts and financial reports on display

Use Composition and Perspective: Generate a wide-angle view of a well-organized school cafeteria during lunchtime, showcasing efficient food service operations and a digital AI-powered attendance tracking system at the entrance

Set the Environment and Lighting: Create a realistic 3D-rendered image of a brightly lit school office where staff members are using AI tools to manage student enrollment, attendance, and compliance documentation

Use Action Language for Video: Generate a 15-second slow-motion video showing a school administrator walking through a bustling hallway, using a mobile device to monitor real-time attendance and safety updates

Image or Multimedia Prompt: Create an animated infographic that visually explains how AI-driven data analytics can help school districts optimize resource allocation and track student performance trends

Use Cases

In Education and Administration

Attendance & Student Data Management

- AI-generated attendance trend analysis and interventions.
- Automated notifications for chronic absenteeism.

Budgeting & Procurement

- AI-generated cost analysis for school funding allocations.
- Automated purchase order tracking and financial forecasting.

Compliance & Policy Management

- AI-assisted monitoring of policy adherence and regulatory updates.
- Automated documentation audits for accreditation.

School Leadership & Decision Support

- AI-driven scenario modeling for school growth planning.
- Sentiment analysis of parent and staff feedback.

Staffing & HR Automation

- AI-assisted scheduling for staff and substitutes.
- Performance analysis and professional development recommendations.

Task Automation

- **Automating Routine Tasks**: AI can schedule meetings, track deadlines, and send automated reminders, freeing up time for more strategic tasks.
- **Workflow Automation**: Automates processes like sending status updates, tracking project progress, and managing routine approvals.
- **Use Case**: Automate weekly project status updates by integrating ChatGPT with a scheduling tool to generate and send emails summarizing project progress.

Repetitive Tasks:

Scheduling and Resource Allocation

- **Intelligent Scheduling**: AI tools optimize team schedules by analyzing availability and project deadlines, reducing conflicts.
- **Resource Planning**: Allocates resources efficiently based on past project data and resource availability, optimizing use, and minimizing bottlenecks.

- **Use Case**: Use AI to analyze team availability, task urgency, and deadlines, then automatically schedule resources based on priority.

Scenario: "You're managing a team with varying availability over the next quarter. You need to schedule overlapping tasks efficiently without overloading anyone."

Data Analysis and Visualization

- **Predictive Analytics**: Forecasts budget needs, resource requirements, and project timelines based on historical data.
- **Data Visualization**: Converts complex data into visuals, making it easier to analyze project metrics and progress.
- **Use Case**: Use AI integrations to analyze monthly project spending, comparing budget vs. actuals in a visual format in real time.
- **Write a Prompt**: Get a budget analysis with graphic

Decision Support and Scenario Analysis

- **Program Assessment**: Diverse data can be combined and analyzed with options and branches that enhance decision making.
- **Scenario Modeling**: Allows you to simulate project scenarios, helping to test strategies and predict potential outcomes.
- **Use Case**: AI models possible project risks (e.g., budget cuts, delays) and predicts their impact, suggesting mitigation strategies.
- **Write a Prompt**: Explore a hypothetical "What if" scenario – You are trying to determine why project timelines are being missed. By analyzing feedback (qualitative data) and task completion times (quantitative data), you can identify issues with workflow efficiency.

Stakeholder Engagement and Sentiment Analysis

- **Sentiment Analysis**: Analyzes feedback from stakeholders, helping tailor communication to stakeholder preferences and concerns.
- **Personalized Communication**: Creates customized responses or updates for stakeholders based on AI insights, fostering better engagement.
- **Use Case**: AI analyzes stakeholder feedback from surveys, summarizing sentiment and identifying key concerns.
- **Write a Prompt**: You have stakeholders with differing concerns. Have AI draft emails tailored to each group.

Content Creation and Summarization

- **Report Generation**: AI drafts project reports, summaries, and updates, reducing the time spent on routine documentation.
- **Text Summarization**: Summarizes long documents, such as project reports or stakeholder feedback, making information more manageable.
- **Use Case**: Use ChatGPT to summarize meeting transcripts or notes, creating concise action items and key points for distribution.
- **Write a Prompt**: Automate AI to summarize meetings.

Document Processing and Compliance Checks

- **Document Review**: Scans and validates document formats, compliance requirements, and completeness of submissions.
- **Quality Assurance**: Checks documents for compliance with internal guidelines and external regulations.
- **Use Case**: AI scans project documents for compliance with internal and external guidelines, flagging missing elements or errors.
- **Discussion**: How can you use AI in compliance monitoring:

Research and Knowledge Management

- **Literature Review Assistance**: Helps you find and summarize relevant articles, reports, or case studies for project research.
- **Knowledge Database Creation**: Organizes data and insights from past projects, allowing for easy reference in future planning.
- **Use Case**: AI finds and summarizes relevant articles and reports, helping you build background knowledge for new projects.
- **Discussion**: What data could you assimilate and transform using AI?

Virtual Assistance for Administrative Tasks

- **Meeting Support**: AI assistants can help schedule meetings, generate agendas, and even transcribe notes, saving time on preparation.
- **Email Management**: Drafts responses, prioritizes incoming messages, and even automates routine responses to frequent inquiries.
- **Use Case**: ChatGPT drafts responses to routine emails (e.g., meeting confirmations, stakeholder updates), reducing time spent on email management.
- **Write a Prompt**: Generate a response to common emails.

Project Estimation and Budgeting

- **Cost Prediction**: AI tools predict costs based on similar past projects, helping you budget more accurately.
- **Timeline Estimation**: Uses historical data to estimate project timelines, considering factors like resource availability and task dependencies.
- **Use Case**: AI uses past project budgets to predict costs for new projects, offering recommendations for budget allocation.
- **Discussion**: What is the value of predictive budgeting? What are examples of projects where accurate forecasting could have improved financial outcomes?

Personalized Training and Support

- **Customized Learning Content**: AI generates training modules, quizzes, and materials tailored to individual learning needs and progress.
- **Performance Analytics**: Analyzes team progress on training and development, identifying areas for improvement.
- **Use Case**: AI tailors training content based on a learner's progress, helping you with skill development at their own pace.
- **Write a Prompt**: Create a training outline.

Virtual and Conversational AI for Training Simulations

- **Scenario-Based Training**: AI-driven simulations for training on crisis management, decision-making, and resource allocation.
- **Interactive AI Assistants**: Virtual trainers can answer questions, provide explanations, and guide learners through complex training scenarios.
- **Use Case**: AI-driven simulation guides you through crisis scenarios, offering choices and real-time feedback.
- **Discussion**: In what areas do you need a critical thinking talking partner?

Enhanced Accessibility for Teams

- **Text-to-Speech**: Provides spoken versions of documents, reports, and meeting notes, aiding accessibility for team members with visual impairments.
- **Language Translation**: Translates documents or communication into multiple languages, facilitating collaboration with international teams.
- **Use Case**: AI translates reports or communications, helping collaborate with international teams.
- **Translate**: Evaluate the quality of the translation.

Regulation and Ethical Considerations in AI

Privacy Concerns

- Consent and Informed Decisions
- Surveillance and Data

Data Protection

- Ethical Handling and Use of Personal Data in AI Applications

Misinformation and Manipulation

- Deepfakes and Manipulated Media
- Social and Emotional Manipulation

Security and Cyberattacks

Transparency and Explainability

- Model-Agnostic Methods
- Interpretable Models

Bias and Discrimination

- Identifying Bias
- Ensuring Fairness

Legal and Regulatory Challenges

- Accountability and Responsibility
- Data Ownership and Control

Economic Inequality

- Concentration of Power
- Job Displacement

Existential Risks

- Mental Health Implications
- Environmental Impact
- Ethical Dilemmas

AI Hallucinations

Dependence and Addiction

AI Arms Race – Autonomous Weapons

Loss of Human Connection

Other Unintended Consequences

Responsible AI Adoption

Existing frameworks, guidelines, and best practices

Codes of conduct and operational ethics

Evaluation benchmarks and metrics

Technical standards

Experimentation sandboxes

Human-AI collaboration and diverse oversight

AI awareness action plan

Consider and Discuss:

- What will your AI policies be?

- What personal practices will you adopt?

- What are you excited to start doing?

- What are you still concerned about?

- What do you need to address first?

AI Tools

Most AI tools operate similarly at their core – they use a prompt window where you input requests, often leveraging the same underlying AI Model, such as OpenAI's 03 and GPT4o or Anthropic's Claude 3.5. The primary differences among tools lie in the features they add around that core technology and the functions they were programmed to perform.

Text-Based AI Assistants

- **ChatGPT, Microsoft CoPilot, Google Gemini, Claude, Jasper, Perplexity**: Useful for generating prompts, summarizing information, drafting content, and brainstorming ideas.
- **Otter.ai**: Real-time transcription for meetings and audio recordings with automatic summaries.

Graphics and Media

- **Canva**: An easy-to-use tool for designing graphics, presentations, and documents.
- **DALL-E (ChatGPT), Davinci, Clipdrop**: For generating custom images based on text prompts, provides an easy way to create illustrations and concept visuals.
- **Descript, Adobe Premiere Pro**: Text-based video and audio editing, with AI features for transcriptions and media enhancements.
- **Sora (ChatGPT), Runway, Synthesia**: Video creation tool that transforms text into video using AI-driven avatars. Great for producing polished video content without filming quickly.
- **ElevenLabs**: An advanced text-to-speech platform known for lifelike, expressive audio generation. Ideal for creating natural-sounding voiceovers and other narrated content.

Data Analysis and Automation

- **Microsoft Automate Studio and Power BI, Google Data Studio, Rows.com AI:** Connect with sources to create dynamic dashboards and reports, integrating AI-based suggestions for data visualization, making it easy to analyze trends and metrics.
- **Zapier**: Automation tool connects various apps (Google Sheets, Slack) to create automated workflows to streamline repetitive tasks like data entry, report notifications, and reminders.
- **Github Copilot**: AI-powered coding assistant that provides real-time code suggestions, autocompletions, and explanations, helping developers code faster and more efficiently.

Customer Service

- **Tidio, Chatfuel, Drift, Intercom**: Code-free chatbots
- **Google Analytics, HubSpot**: Customer insights
- **Gmail AI Smart Reply, Mailchimp AI suggestions**: Automated Emails
- **MonkeyLearn, Azure AI, Google AI, IBM Watson**: Sentiment Analysis, Predictive Analytics

Appendix A: ISO/IEC 42001

Information technology — Artificial intelligence — Management system

Context of the organization

- Understanding the organization and its context
- Understanding the needs and expectations of interested parties
- Determining the scope of the AI management system
- AI management system

Leadership

- Leadership and commitment
- AI policy
- Roles, responsibilities, and authorities

Planning

- Actions to address risks and opportunities
    - General
    - AI risk assessment – AI risk treatment
    - AI system impact assessment
- AI objectives and planning to achieve them
- Planning of changes

Support

- Resources
- Competence
- Awareness
- Communication
- Documented information
    - General
    - Creating and updating documented information
    - Control of documented information

Operation

- Operational planning and control
- AI risk assessment – AI risk treatment
- AI system impact assessment

Performance evaluation

- Monitoring, measurement, analysis, and evaluation
- Internal audit
    - General
    - Internal audit program
- Management review
    - General
    - Management review inputs – Management review results

Improvement

- Continual improvement
- Nonconformity and corrective action

Appendix B: Overall Ways to Use AI

Coding: Write scripts and small programs.

Extracting: Finding patterns and data from messy text.

Customer Service: AI-powered service through chatbots, helping to answer common questions and providing basic product information.

Content Creation: Generating content for businesses, including articles, social media posts, and product descriptions.

Language Translation: Translation – enabling businesses to communicate with customers or partners in different countries.

Sentiment Analysis: Analyze text and determine the sentiment or emotion behind it, helping businesses to understand how customers feel about their products or services.

Text Summarization: Summarize long documents or articles into shorter, more manageable summaries, enabling businesses to quickly understand the main points of a document.

Text Completion: Suggest text completion options based on the context of the text, streamlining the writing process for businesses.

Personalized Marketing: Personalize marketing messages by analyzing customer data and using natural language processing to understand customer preferences and behaviors.

Virtual Assistants: Create virtual assistants that can help with tasks such as scheduling appointments, managing email, and conducting research.

Data Analysis: Analyze data to uncover insights and trends, enabling businesses to make data-driven decisions.

Education and Training: Create educational content, such as quizzes, flashcards, and study guides, for students and professionals.

Personal Therapy: Provide virtual therapy services for individuals dealing with mental health issues, such as anxiety and depression.

Creative Writing: Generate creative writing prompts and ideas for writers and authors.

Legal and Financial Advice: Using natural language processing to understand complex legal and financial language.

Healthcare: Provide medical advice and assistance, answering questions about symptoms and providing information about medical conditions.

Recruitment and HR: Automate candidate screening and scheduling interviews, to provide answers to frequently asked questions about the organization and its culture. It can also be used in human resources to assist employees with HR-related questions and requests.

Chatbots for E-commerce: Integrate with e-commerce platforms to create chatbots that can assist customers with their online purchases, providing product recommendations, answering questions about pricing and availability, and processing orders.

Social Media Management: Manage social media accounts, giving automated responses to customer inquiries, monitoring mentions and interactions, and analyzing social media data to improve engagement and reach.

Speech Recognition: Transcribe spoken audio into text, enabling businesses to create closed captions for videos, transcribe meetings, and provide accessibility for hearing-impaired users.

Virtual Reality: Provide realistic and immersive conversations with virtual characters, enhancing the user experience.

Fraud Detection: Detect fraudulent activities such as phishing scams and identity theft, analyzing patterns in text to identify suspicious behavior and alerting businesses to potential threats.

News Aggregation: Curate and summarize news articles from diverse sources, providing users with a concise and informative overview of current events.

Gaming: Used in gaming applications to provide conversational AI characters that can interact with players, enhancing the player experience and creating more engaging games.

Research and Development: Analyze data and generate insights that can inform product development and innovation.

Disaster Response: Provide information and resources to affected individuals, connecting them with emergency services and providing updates on the situation.

Uses with Writing

Brainstorming, Writing, Summarizing, Synthesizing, and Reformatting Text

Document Processing: AI can automatically scan and extract relevant information from grant applications, ensuring that all required documents are complete and in the correct format.

Initial Screening: AI algorithms can perform an initial review of grant proposals, identifying those that meet basic eligibility criteria and flagging them for further consideration.

Content Summarization: AI-powered tools can generate concise summaries of grant proposals, making it easier for reviewers to quickly grasp the key points and objectives.

Data Analysis: AI can analyze data provided in grant applications, such as financial information or research data, to identify trends, outliers, or potential issues.

Language Translation: For international grant applications, AI can facilitate translation and language support to ensure reviewers can understand proposals in different languages.

Reviewer Matching: AI can match grant applications with reviewers who have expertise in the relevant field, ensuring a more appropriate and efficient review process.

Peer Review Assistance: AI can assist panel reviewers by providing relevant background information about applicants, their previous work, and their impact in the field.

Content Generation: AI can help generate sections of grant proposals, reports, or evaluations, improving the quality and consistency of written documents.

Data Visualization: AI can create visual representations of data, making it easier for reviewers to comprehend complex information.

Suggesting Reviewer Comments: AI can offer suggestions for reviewer comments based on the content of grant applications, streamlining the feedback process.

Predictive Analytics: AI algorithms can predict the likelihood of a grant's success based on historical data, helping agencies allocate resources more effectively.

Compliance Checks: AI can check grant applications for compliance with regulations and guidelines, ensuring that all required information and documentation are included.

Monitoring and Reporting: AI can provide ongoing monitoring of grant projects, flagging potential issues or deviations from the approved project plan.

Decision Support: AI can assist in making funding decisions by providing data-driven insights and recommendations based on the evaluation of grant applications.

Workflow Automation: AI can streamline the grant administration process by automating routine tasks, such as sending notifications, scheduling meetings, and tracking progress.

Natural Language Understanding (NLU): AI-powered NLU systems can understand and respond to inquiries from grant applicants and reviewers, improving communication and user experience.

Quality Control: AI can perform quality checks on grant applications, ensuring that they adhere to formatting and content guidelines.

Accessibility Features: AI can help ensure that grant application materials are accessible to individuals with disabilities by providing text-to-speech or alternative formats.

Report Generation: AI can automatically generate reports summarizing the outcomes of grant review processes, making it easier for decision-makers to understand the results.

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