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AI Plagiarism: Process over Product

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Shilpa Duvoor

Head of Customer Success

shilpa@scribe.com

- History and Humanities teacher
- Principal of 6-12 public school
- Passionate about research, writing, and developing critical thinking skills in students
- Early adopter of Scribe
- My goal is to make sure you know how to use Scribe and love it!



Agenda

Why Scribe?

AI Plagiarism

Using AI Responsibly

Wrap up & Next Steps

Problem: Research and Writing Skills Crisis

60% of even high achieving and well-resourced secondary students struggle with research skills.¹



73% of 12th graders do not write proficiently.²



61% of high school educators said their students have never written a paper more than five pages.³

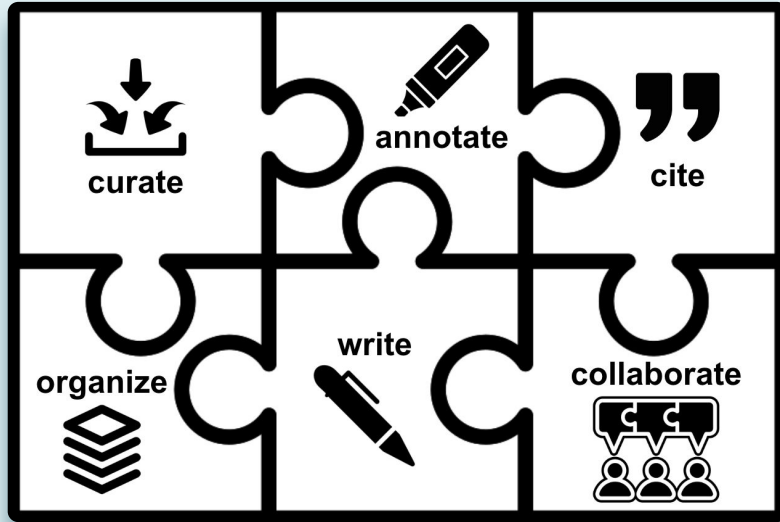
THE CHRONICLE OF HIGHER EDUCATION

1. Purcell, Kristen et al. "How teens do research in the digital world." Pew Research Center (2012).

2. National Center for Education Statistics (2012). *The Nation's Report Card: Writing 2011* (NCES 2012-470). Institute of Education Sciences, U.S. Department of Education, Washington, D.C.

3. Sanoff, Alvin P., *A Perception Gap Over Students' Preparation*, The Chronicle of Higher Education, March 10, 2006

Problem: Research and Writing is Complex



- Many tasks requiring multiple apps
- Process-intensive & time consuming
- Hard for students to stay organized
- Hard for educators to access, assess and give feedback on student work

Solution: Writing Platform for Students

ONE workspace vs. many apps to:

- Curate sources
- Annotate evidence
- Cite sources
- Organize work
- Build bibliography
- Create outline
- Write draft
- Get feedback

The screenshot displays the Scribble writing platform interface. At the top, a toolbar includes icons for user profile, status, navigation, editing (highlighter, eraser, text color, underline, undo, redo), viewing (eye, zoom), and sharing. The main workspace shows a document with text about Mars exploration, featuring pink and green highlights. A sidebar on the right contains a 'Comments' section with two entries from 'Tom Teacher' dated Oct 14, 2024. The bottom section shows a 'Mission to Mars Paper' workspace with tabs for SOURCES, ANNOTATIONS, BIBLIOGRAPHY, OUTLINE, PAPERS, and METRICS. A search bar is present above a list of sources. The source list includes:

- Why go to Mars?** (10/14/24 11:19 PM) - the search for life, understanding the surface and the planet's evolution, and preparing for future human exploration | the search for life, understanding the surface and the planet's evolution, and preparing for future human exploration | most similar...
- Is the Mars rover's rock collection worth \$11 billion?** (4/4/24 9:34 AM) - dge as they wait for NASA to answer two of the most consequential questions in Mars explorati | dge as they wait for NASA to answer two of the most consequential questions in Mars explorati | only getting better as we see what Perseverance keep... (2nd Argument)
- Rover Body - NASA** (4/4/24 9:34 AM) - rover relies on the successful design of the Mars Science Laboratory rover, Curiosity. However, Persevera | rover relies on the successful design of the Mars Science Laboratory rover, Curiosity. However, Persevera | operations | minerals | This is great... (rover)
- Curiosity: The Story of a Mars Rover** (4/4/24 9:29 AM) - In his debut picture book, Motum brings the story of NASA's beloved Mars rover Curiosity to life in vivid color. Full of eye-catching retro illustrations, this book is sure to fascinate budding space explorers and set inquisitive minds soaring. Full color....

Solution: Writing Process Platform for Students

Develop research, writing, close reading and critical thinking skills

Simplify mundane manual tasks

Shift to higher order cognitive work

Take account and data to college

The image displays the Scribble writing platform interface, which is designed to facilitate the writing process for students. The interface is divided into several key sections:

- Document Editor:** The top section shows a document titled "Mission to Mars Paper". The text in the editor includes: "Mars is an obvious target for exploration because it is close by in our Solar System, but there are many more reasons to explore the Red Planet. The scientific reasons for going to Mars can be summarised by the search for life, understanding the surface and the planet's evolution, and preparing for future human exploration." Below this, a sub-section titled "Searching for life on Mars" begins with "Understanding whether life existed elsewhere in the Universe beyond Earth is a fundamental question of humankind. Mars is an excellent place to investigate this question because it is the most similar planet to Earth in the Solar System. Evidence".
- Source Library:** The middle section shows a library of sources related to the "Mission to Mars Paper". It includes a search bar and a list of sources with their titles, dates, and authors. The sources listed are:
 - "Why go to Mars?" (10/14/24, 11:19 PM) by Me. Description: "the search for life, understanding the surface and the planet's evolution, and preparing for future human exploration | the search for life, understanding the surface and the planet's evolution, and preparing for future human exploration | most similar..."
 - "Is the Mars rover's rock collection worth \$11 billion?" (4/4/24, 9:34 AM) by Me. Description: "dge as they wait for NASA to answer two of the most consequential questions in Mars explorati | dge as they wait for NASA to answer two of the most consequential questions in Mars explorati | only getting better as we see what Perseverance keep..."
 - "Rover Body - NASA" (4/4/24, 9:34 AM) by Victor Karkar. Description: "rover relies on the successful design of the Mars Science Laboratory rover, Curiosity. However, Persevera | rover relies on the successful design of the Mars Science Laboratory rover, Curiosity. However, Persevera | operations | minerals | This is great..."
 - "Curiosity: The Story of a Mars Rover" (4/4/24, 9:29 AM) by Victor Karkar. Description: "In his debut picture book, Motum brings the story of NASA's beloved Mars rover Curiosity to life in vivid color. Full of eye-catching retro illustrations, this book is sure to fascinate budding space explorers and set inquisitive minds soaring. Full color..."
- Comments Sidebar:** The right side of the interface features a comments sidebar. It shows two comments from "Tom Teacher":
 - A pink comment from Oct 14, 2024 11:15 pm: "These are some of the main reasons to travel to Mars." (labeled as a Comment)
 - A green comment from Oct 14, 2024 11:17 pm: "Mars is a good planet to explore potential life because it is most similar to Earth in our solar system." (labeled as a 2nd Argument)

Solution: Writing Platform for Teachers

ONE workspace and dashboard to:

- Access all student work
- Give timely, specific feedback
- Monitor real time progress
- See the whole writing process

The screenshot shows the Scrible workspace interface. On the left, there is a 'Feedback' sidebar with a 'New Message' button and a list of messages. The main area displays a student's profile for 'Glen Washington' with 3 of 3 assignments. Below the profile, there are tabs for 'SOURCES', 'ANNOTATIONS', 'BIBLIOGRAPHY', 'OUTLINE', and 'PAPERS'. The 'SOURCES' tab is active, showing a search bar and a list of research sources related to mycelium and the mycelial network.

English 101 Research Paper

English 101 Period 1

Overview Student Progress Class Progress Proof of Process

Student Progress on Assignment Goals

Click column headers to sort.
Click pie charts to expand.

Student	5+ sources curated	Curated source categories	Curated source types	5+ sources cited	Cited source categories	Cited source types	750+ words written
Jimmy Doe	9			9			0
Sally Smith	9			0	No data	No data	0
Glen Washington	5			0	No data	No data	0
Julia Thompson	12			12			0
Tony Fohey	9			7			0
Sandy Student	18			18			636
Sandy Student Edu 1	13			13			1998
College Student	6			6			0
Ineda Degree	11			11			0



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AI Plagiarism Risk to Authentic Learning



AI plagiarism bypasses the **productive struggle** that develops **critical thinking** and **key cognitive skills** (evaluation, organization, prioritization, sequencing, synthesis, etc).

GenAI Risk to Skill Development

Research shows AI improves performance, but harms skill development as a crutch unless safeguards are used.

Generative AI Can Harm Learning

Hamsa Bastani,^{1*} Osbert Bastani,^{2*} Alp Sungu,^{1*†}
Haosen Ge,³ Özge Kabakcı,⁴ Rei Mariman

¹Operations, Information and Decisions, University of Pennsylvania

²Computer and Information Science, University of Pennsylvania

³Wharton AI & Analytics, University of Pennsylvania

⁴Budapest British International School

*These authors (H.B., O.B., A.S.) contributed equally.

†To whom correspondence should be addressed; E-mail: alpsungu@wharton.upenn.edu.

Generative artificial intelligence (AI) is poised to revolutionize how humans work, and has already demonstrated promise in significantly improving human productivity. However, a key remaining question is how generative AI affects *learning*, namely, how humans acquire new skills as they perform tasks. This kind of skill learning is critical to long-term productivity gains, especially in domains where generative AI is fallible and human experts must check its outputs. We study the impact of generative AI, specifically OpenAI's GPT-4, on human learning in the context of math classes at a high school. In a field experiment involving nearly a thousand students, we have deployed and evaluated two GPT based tutors, one that mimics a standard ChatGPT interface (called GPT Base) and one with prompts designed to safeguard learning (called GPT Tutor). The results show that 15% of the experimental

Human Detection Problems

Research shows that most teachers can't reliably detect AI text and are overconfident in their ability to do so.

Computers and Education: Artificial Intelligence 6 (2024) 100209

Contents lists available at ScienceDirect

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ELSEVIER journal homepage: www.sciencedirect.com/journal/computers-and-education-artificial-intelligence

ARTIFICIAL INTELLIGENCE

Check for updates

Do teachers spot AI? Evaluating the detectability of AI-generated texts among student essays

Johanna Fleckenstein^{a,b,*}, Jennifer Meyer^b, Thorben Jansen^b, Stefan D. Keller^c, Olaf Köller^b, Jens Möller^d

^a University of Hildesheim, Germany
^b Leibniz Institute for Science and Mathematics Education, Kiel, Germany
^c Zurich University of Teacher Education, Switzerland
^d Kiel University, Germany

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ChatGPT

ABSTRACT

The potential application of generative artificial intelligence (AI) in schools and universities poses great challenges, especially for the assessment of students' texts. Previous research has shown that people generally have difficulty distinguishing AI-generated from human-written texts; however, the ability of teachers to identify an AI-generated text among student essays has not yet been investigated. Here we show in two experimental studies that novice ($N = 89$) and experienced teachers ($N = 200$) could not identify texts generated by ChatGPT among student-written texts. However, there are some indications that more experienced teachers made more differentiated and more accurate judgments. Furthermore, both groups were overconfident in their judgments. Effects of real and assumed source on quality assessment were heterogeneous. Our findings demonstrate that with relatively little prompting, current AI can generate texts that are not detectable for teachers, which poses a challenge to schools and universities in grading student essays. Our study provides empirical evidence for the current debate regarding exam strategies in schools and universities in light of the latest technological developments.

1. Introduction

Generative AI is a broad term for any type of artificial intelligence (AI) that can produce new texts, images, videos, or computer code. Based on massive amounts of training data, generative AI can use prompts written in natural language to generate new output. Large language models (LLM), such as the Generative Pre-trained Transformer 3 (GPT-3), can generate human-like text and complete other language-related tasks such as translation, question answering, and coding. The use of LLM like GPT-3 in educational contexts has been a recent matter of discussion (Cotton et al., 2023; Kasneeci et al., 2023).

As a variant of the GPT-3 model, the chatbot application ChatGPT is optimized for conversation modeling, which makes it a user-friendly tool. With the growing distribution of ChatGPT, the public has become aware of the impact that automated writing will have on schools and universities. On the one hand, educators see great potential in optimizing teaching and learning processes (Cotton et al., 2023; Sailer et al., 2023). AI is in particular helpful in schools to give feedback to student achievements which is process-oriented and available in real-time to high numbers of students. In their experimental study, Sailer et al. (2023) showed that AI-generated adaptive feedback facilitates pre-service teachers' quality of justifications in written assignments as a part of their diagnostic competence. Jansen et al. (2024) showed that automatic feedback including goal-setting support is in particular helpful when students had to revise their texts. In one of the first experimental studies on the use of LLMs for feedback generation, Meyer et al. (2024) showed that AI-generated feedback increased students' revisions, motivation, and positive emotions. On the other hand, there are certain caveats regarding the role of generative AI. Cotton et al. (2023) discussed the challenges concerning the use of ChatGPT in higher education. These include cheating and deception, causing issues for assessment and learning. Students who use tools like ChatGPT in written assignments have an unfair advantage when it comes to assessment and grading. At the same time, they might miss out on learning

* Corresponding author. University of Hildesheim, Universitätsplatz 1, 31141, Hildesheim, Germany.
E-mail addresses: fleckenstein@uni-hildesheim.de (J. Fleckenstein), meyer@leibniz-ipn.de (J. Meyer), tjansen@leibniz-ipn.de (T. Jansen), stefandaniel.keller@leibniz-ipn.de (S. D. Keller), moller@leibniz-ipn.de (J. Möller).

AI Detectors are not reliable

- Research shows AI detectors are unreliable & manipulable.
- AI detectors fail because they only assess the paper

“...detection tools are neither accurate nor reliable and have a main bias towards classifying the output as human-written rather than detecting AI-generated text.”

“...the tools exhibited inconsistencies, producing false positives and uncertain classifications.”

Solution: Show Your Work

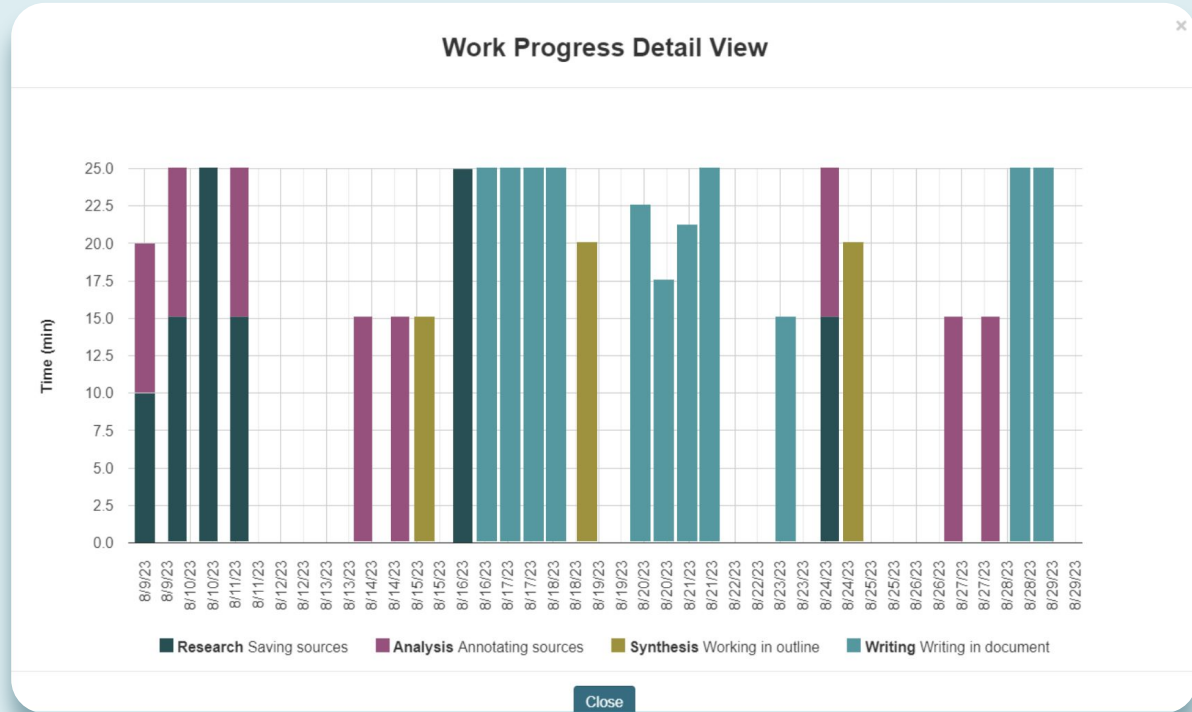
- Focus on writing as a process, not just the end product
- “Process > Product” is best practice for assessment
- Scribe makes the writing process visible to instructors.
- We do for writing what’s done in math: *Show Your Work*



"I really recommend Scribe because it allows me to see my students' work as they are crafting an essay. So, I know it's their authentic work. By the time they're done, I saw the process be built and I know that that work is their own."

Scribe Mitigates the Downside Risk of AI

- Shifts assessment from paper to process
- Provides details on time spent throughout the research and writing process
- Easier for student to be ethical
- Instructive vs. punitive
- Teachers can focus on the ethical use of AI





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NEW

Introducing Rese by Scribe

- New genAI research assistant chatbot
- Embedded in your Scribe library
- Enables conversation about your sources
- Solves problems with consumer chatbots
- Best practices built in for responsible AI use

The screenshot displays the Scribe web application interface. At the top, the navigation bar includes 'Classes', 'Assignments', 'Libraries', 'Explore', and 'Help'. The main content area is titled 'Mars Paper (Rese Demo)' and features a search bar and tabs for 'SOURCES', 'ANNOTATIONS', 'BIBLIOGRAPHY', 'OUTLINE', 'PAPERS', and 'METRICS'. A list of sources is shown, including 'Mars Facts | Temperature, Surface, Information, History & Definition', 'History of Mars observation', 'Life on Mars', and 'Mars Exploration: Science Goals - NASA Science'. On the left sidebar, the 'Rese' chatbot is highlighted with a yellow box and a tooltip that reads 'Library AI chatbot'. The chatbot interface shows a message: 'I am Rese, an AI-powered research assistant who can help you get the most out of your Scribe library!' and an input field labeled 'Ask your library'.

Why RESE is Unique

- Save and cite Rese responses
- Trace Rese answers to the source
- You control who uses Rese
- Built in accessibility features
- Audit your students' use of Rese

The screenshot displays the Scribe web application interface. At the top, the navigation bar includes the Scribe logo, 'Classes', 'Assignments' (with a notification badge), 'Libraries', 'Explore', and 'Help'. The main content area is titled 'Conversations:' and shows a search query: 'what are 3 reasons we should go to mars?'. Below the query, a timestamp 'Jan 15, 12:47 PM' and the same query are displayed. The 'References:' section lists three search results:

- [Why we explore Mars—and what decades of...](#)
- [1] Over the last century, everything we've learned about Mars suggests that the planet was once quit... [more](#)
- [2] Exploring Mars helps scientists learn about momentous shifts in climate that can fundamentall... [more](#)
- [Mars Exploration: Science Goals - NASA...](#)
- [3] Studies are underway to determine how humans might safely journey to Mars and back to Earth. Thi... [more](#)

Below the references is a row of social sharing icons (copy, like, share, add, print, refresh). A note states 'Generated by AI. Review accuracy.' Below this is an 'Ask Rese...' input field with a plus icon. At the bottom, it says 'Rese will query: all sources' and a link 'what's this?'.

On the right side, the 'Mars Paper (Rese Demo)' interface is shown. It has tabs for 'SOURCES', 'ANNOTATI...', 'BIBLIOGRA...', and 'OUTL...'. A search bar is labeled 'Search in library'. Below the search bar, there are search results for '2,000 Days on Mars With the Curiosity Rover' and 'Artificial Intelligence In Education: Teachers' Opinions O...'. Each result includes a checkbox, a globe icon, a title, a snippet, and a 'Me' label with a 'policy' button.



Scribe Demo

Rese: Smarter research
management



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More Scrible at URSA!

Thursday,

July 10th

Scrible 101: Free
Research and
Writing Platform for
Newbies, 11:10am

Scrible 102:
Scaffolding Research
and Writing in ELA and
Social Studies, 1:40
pm

Friday,

July 11th

How to Solve the AI
Plagiarism Problem:
Process over
Product, 9:45am

Scrible: Elevate
Student Research
and Writing in Your K-
12 Classroom,
11:00am

Wrap Up & Next Steps

What we did today

- AI plagiarism: process over product
- Rese: AI Research assistant

Do Now

- [Feedback survey](#)

