

How to Drive Research Ethics Education Through Whiteboard Animation

By

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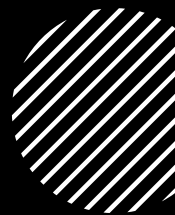
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Presentation Objectives



Discuss the rationale for using whiteboard animation in research ethics education



Discuss key principles in research ethics that could be animated using WB animation techniques



Share personal experience on using WB animation in teaching ethics and research integrity



Demonstrate practical steps towards an inclusive WB animation

Pattern of Presentation

- **PART One**
- The basics of teaching complex topics such as ethics
- Challenges in research ethics education
- Consequences of poor teaching methods

Pattern of Presentation

- **PART Two- Practical Session**
- Basics and rationale for using of Whiteboard Animation
- Crafting Ethical and Inclusive Animated Contents
- Practical Steps in Developing Video Animations for Ethics Training
- Implementing Animated Ethics Messaging in Academic and Institutional Settings

Problem Statement

1. Teaching **complex** scientific **concepts** in an engaging manner is one of the major challenges of educators. (Liu and Elms, 2019)

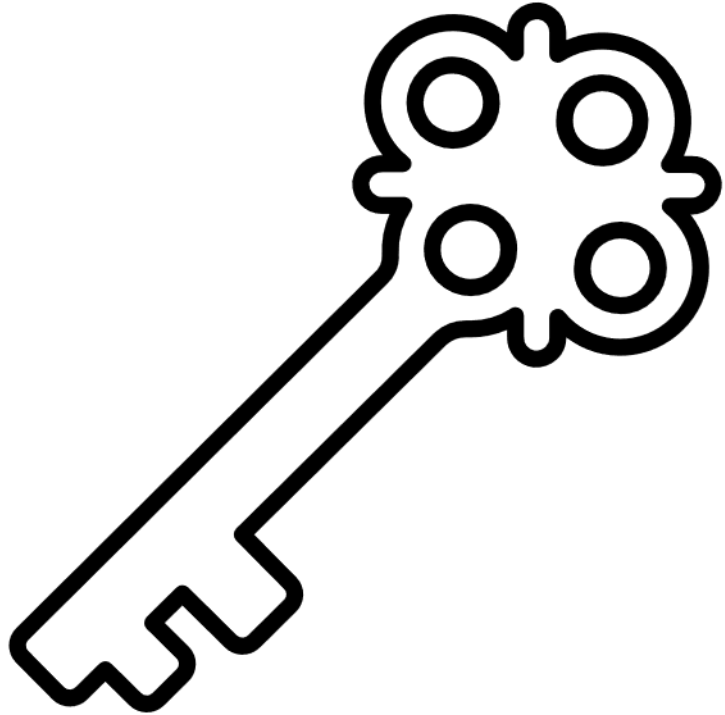
Problem Statement

2. Science education delivered solely by lecturing is less effective and a leading cause of loss of interest in science among students at the undergraduate level (Wood, 2009; Seymour et al, 2019)
3. Research integrity education could be boring (Tricky Goose)



Key Features of Complex Concepts- AI Generated

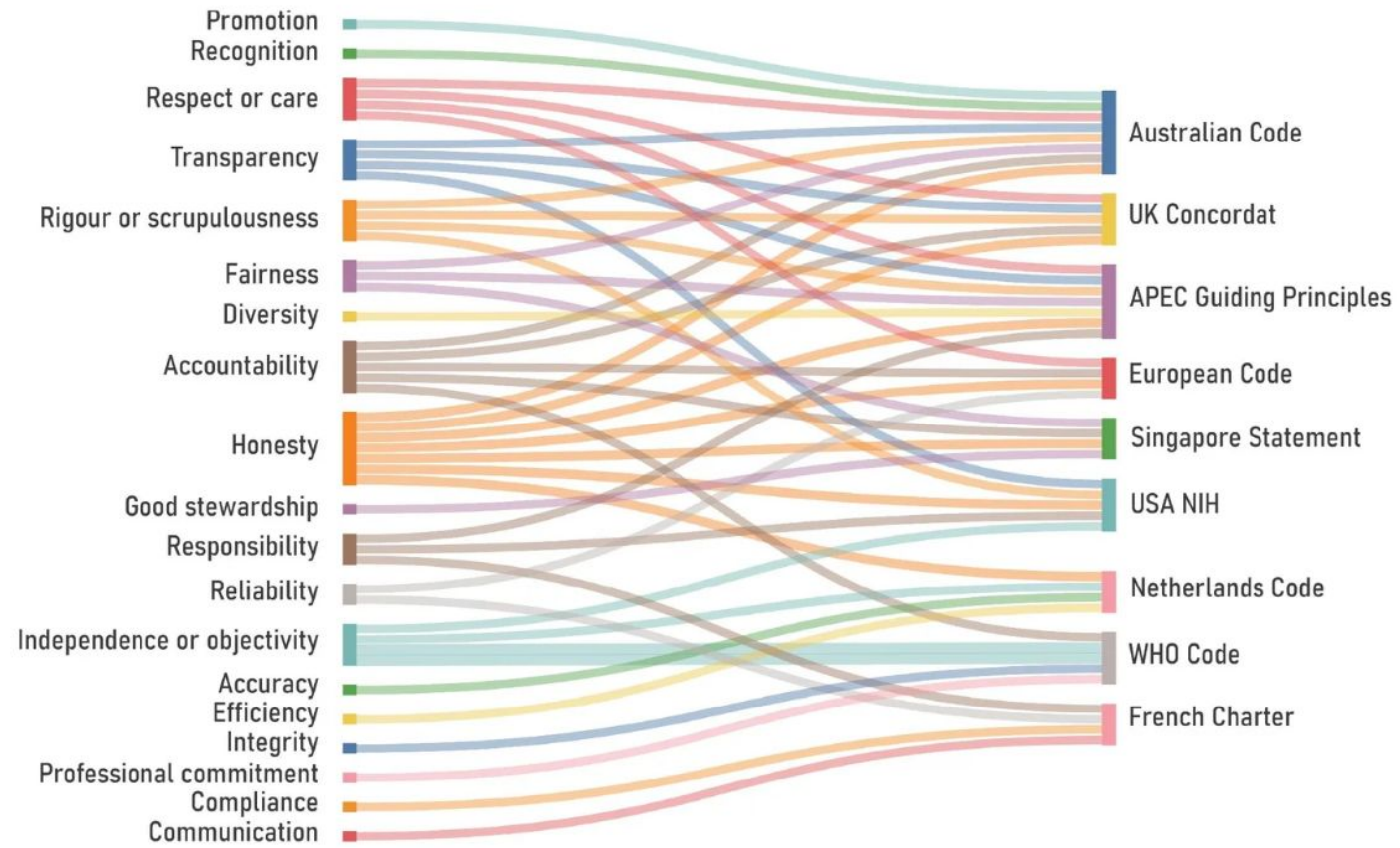
- Ambiguity and partial knowability
- Unpredictability and non-linear relationships
- Need for deep analysis and specialised knowledge
- Dynamic and Continuous changing nature
- Heterogeneity of components



Key Features of Complex Concepts- AI Generated

- Abstract and theoretical nature
- Cognitive overload potential
- Cross-disciplinary connections
- Requirement for active engagement

Research Ethics and Integrity as complex concepts



[Introduction to Research Integrity — Tricky Goose Training](#)

Research Ethics and Integrity as complex concepts-Heterogeneity of components

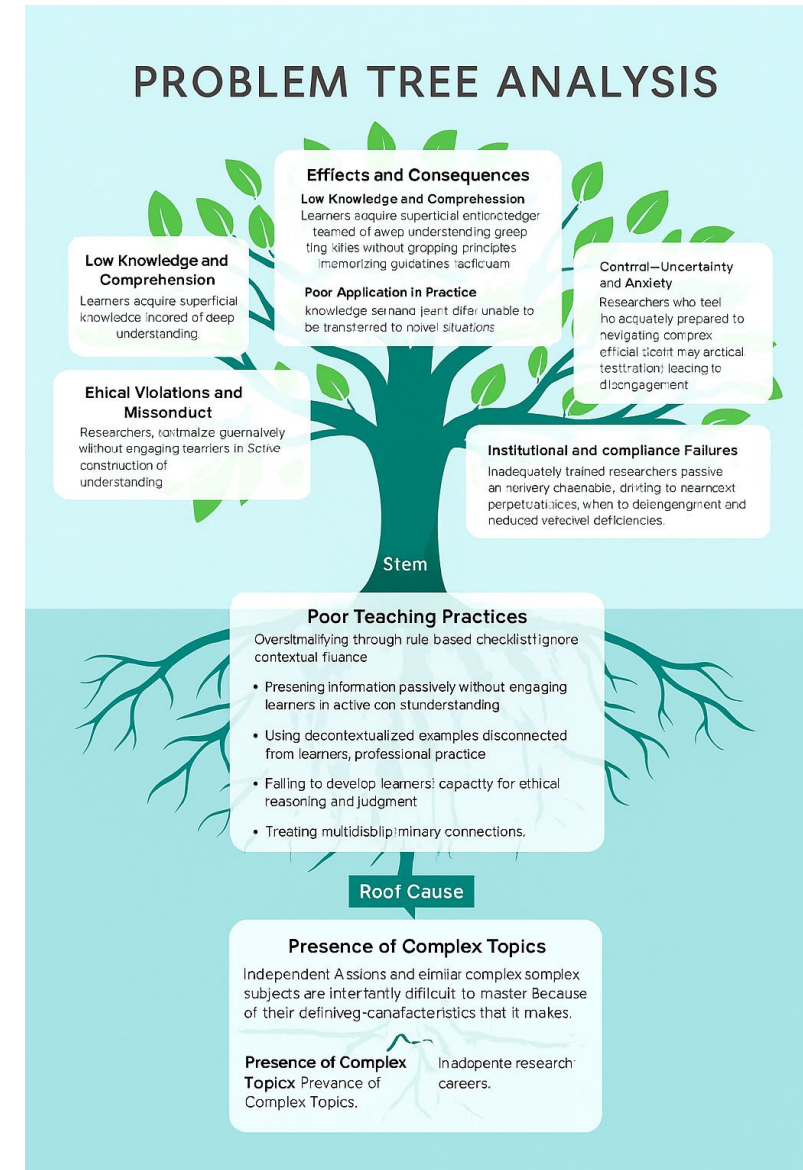
Fig. 1. Key elements responsible for scientific misconduct.



Zhaksylyk, et al, 2023

Ethics as a complex concept- The Root Cause of Research Misconduct

- Root-cause- There is the presence of a complex concept
- The stem- the teaching approach is inadequate
- The branches- poor ethical practice



Ways of teaching research ethics and integrity

- No uniform way of teaching
- All traditional and novel methods including hybrid methods
- Common methods-classroom lecture method, online, hybrid
- Researcher-focused
- Usually a one-of event

Challenges in research integrity and ethics education

- Heterogeneity of concepts
- Not inclusive
- Educators are not trained (**researchers**)
- Teaching methods-not evidence –based
- A one-size fits all approach
- Narrow focus



The screenshot shows the top navigation bar of the University of Helsinki website. The navigation menu includes 'Home', 'Persons', 'Publications' (which is underlined), 'Projects', and 'Research Infrastructures'. Below the navigation bar, the main content area features a large heading: 'Seven challenges for research integrity education: current status and recommendations'. The authors listed are Mariette van den Hoven, Muhammad Asaduzzaman, Nathalie Evans, Chiedozie Ike, Michael Kalichman, Silke Kniffert, Erika Löfström, Miriam van Loon, Ruth Moran, Gustav Nilsson, Dorien van der Schot, Anna van 't Veer, and Julia Priess-Buchheit. The affiliation is given as 'Department of Education, Faculty Common Matters (Faculty of Education)'.

UNIVERSITY OF HELSINKI

Home Persons **Publications** Projects Research Infrastructures ...

Seven challenges for research integrity education: current status and recommendations

Mariette van den Hoven, Muhammad Asaduzzaman, Nathalie Evans, Chiedozie Ike, Michael Kalichman, Silke Kniffert, [Erika Löfström](#), Miriam van Loon, Ruth Moran, Gustav Nilsson, Dorien van der Schot, Anna van 't Veer, Julia Priess-Buchheit

[Department of Education, Faculty Common Matters \(Faculty of Education\)](#)

Challenges in research integrity and ethics education

- **So much in such a short time**
- **Engagement not the focus**
- Impact not measured
- Oversimplistic approach
- Taught using unassessed method
- Classroom opportunity ignored/lost/ abused



The screenshot shows the top navigation bar of the University of Helsinki website, with the university logo and name. Below the navigation bar, the 'Publications' menu item is highlighted. The main content area displays the title of a publication: 'Seven challenges for research integrity education: current status and recommendations'. Below the title, the authors are listed: Mariette van den Hoven, Muhammad Asaduzzaman, Nathalie Evans, Chiedozie Ike, Michael Kalichman, Silke Kniffert, Erika Löfström, Miriam van Loon, Ruth Moran, Gustav Nilsson, Dorien van der Schot, Anna van 't Veer, and Julia Priess-Buchheit. At the bottom, the affiliation is given as 'Department of Education, Faculty Common Matters (Faculty of Education)'.

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Home Persons **Publications** Projects Research Infrastructures ...

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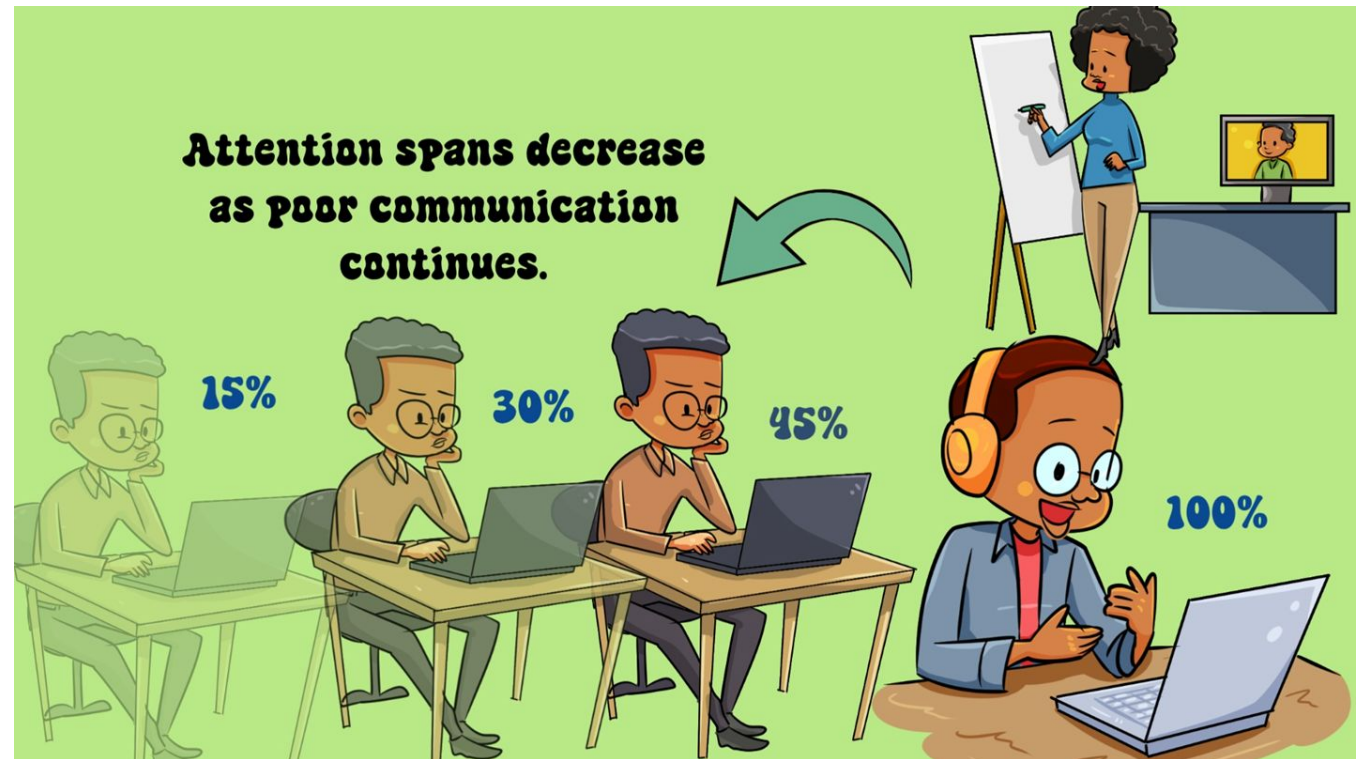
Consequences of poor education approach

- Gradual Loss of attention spans (varied by age, clinical and environmental conditions)
- disengagement



Consequences of poor education approach

- Gradual Loss of attention spans (varied by age, clinical and environmental conditions)
- disengagement



Factors Responsible for Poor attention/engagement

- Teacher factor
- Environmental factor
- **Technological factor**
- Topic/content factor
- **Learner factor**

HOW (NOT TO) PRESENT COMPLEX SUBJECTS

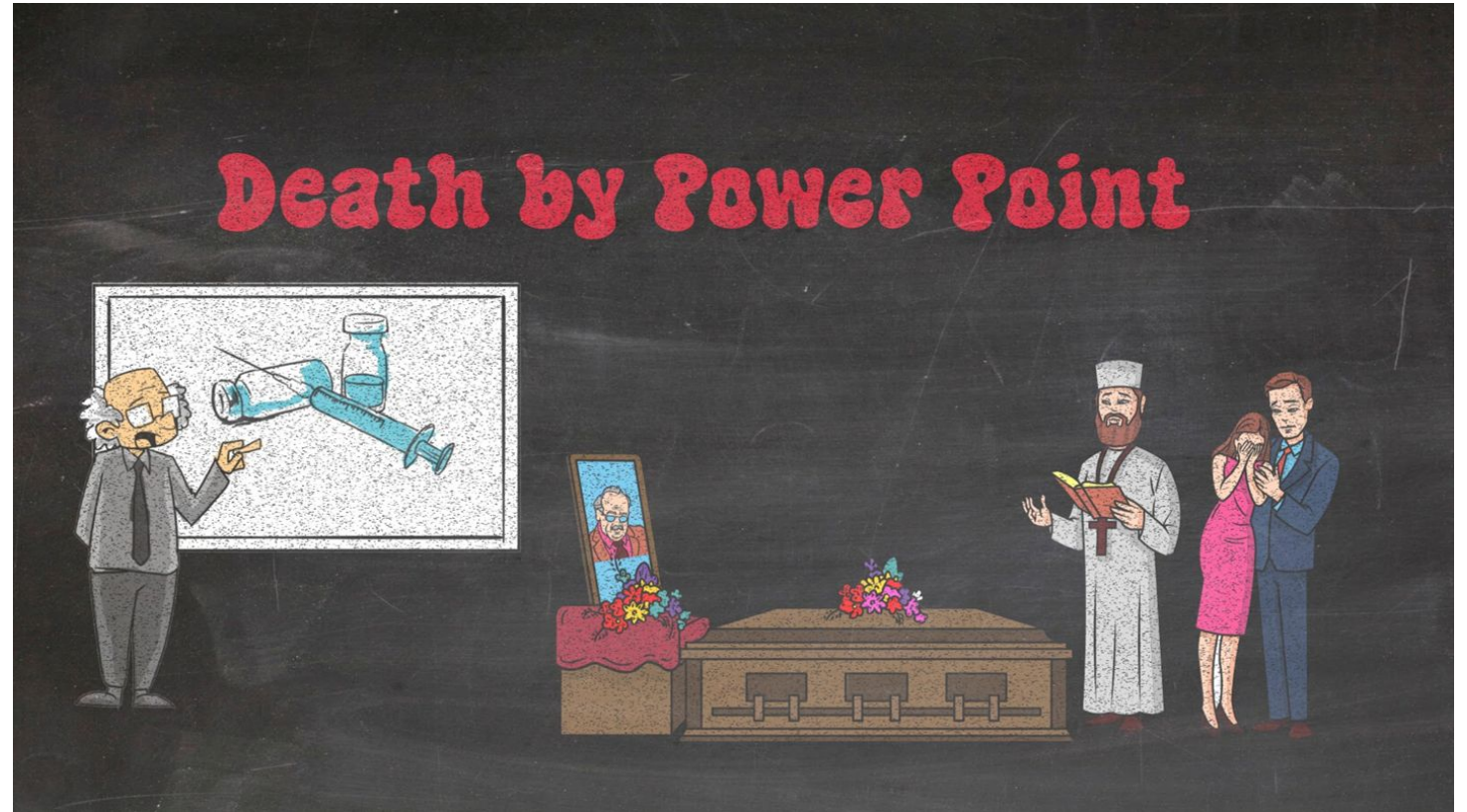


11/19/2025

6

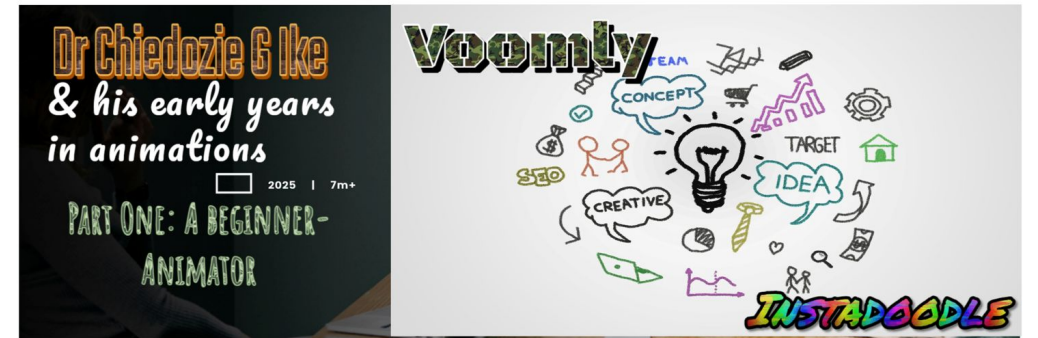
Death-The Consequences of Loss of A-span/ Engagement

- Death by 'Power Point.'
1. Slides not following 1-5-5/1-6-6/1-7-7 rule.
 2. So many information
 3. Poor use of animations
 4. Monotonous 'reading'



Part Two- Whiteboard Explainer Video Animation

- Definition and features of WB animation
- Rationale for using WB
- Experience using WB
- Creating an inclusive WB
- Implementation Considerations
- Practical demo- Instadoodle/ Doodly!



Sample Footer Text

Whiteboard Animation basics

A subtype of animation videos that show the PROCESS OF (progressively and segmentally) DRAWING A FINISHED PICTURE

Digital drawing usually on a whiteboard or something resembling a whiteboard.

Now, different board varieties exist for different purposes



My Videos



Standard Membership



Chiedozie Ike

Recent Videos

+

CREATE NEW VIDEO



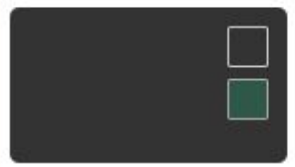
A-Span

Create new video

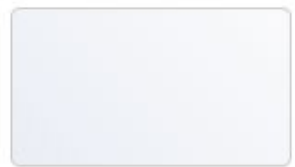
Style:



Whiteboard



Chalkboard



Glassboard



Custom

Title:

No title

Resolution:

480p - (854x480)

Width:

854

Height:

480

Constrain aspect ratio

Cancel

Create

A Doodly Whiteboard Software project page

Watch the FREE Doodly video

Need help with Doodly?

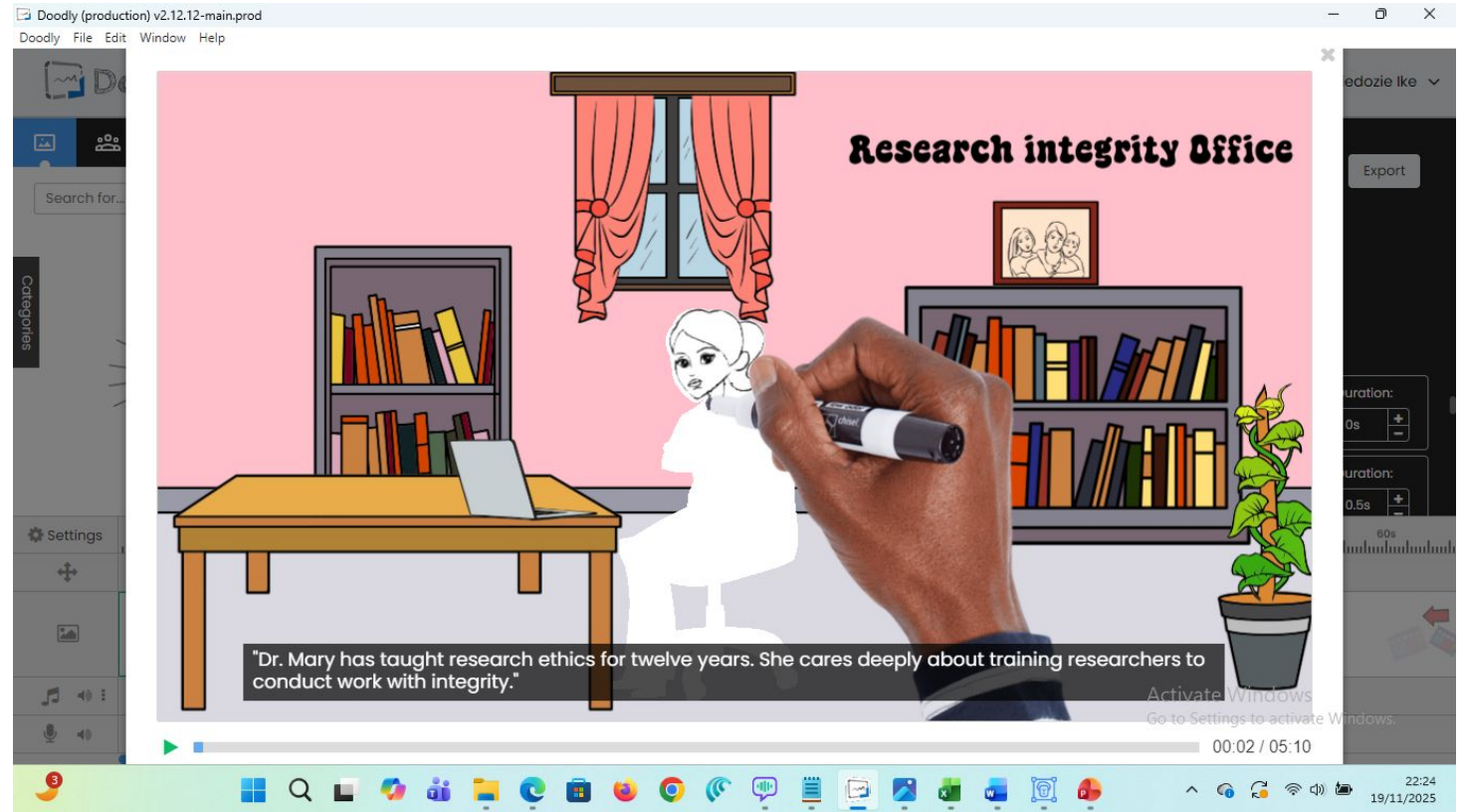


An Instadoodle Whiteboard Project Page

The screenshot shows the Instadoodle interface for a whiteboard project. The main slide features an illustration of a man at a desk with thought bubbles labeled 'animation' and 'dreams'. Below the illustration, the text reads: "on videos but hasn't created any himself." The interface includes a top navigation bar with the Instadoodle logo, a search bar, and an 'Export' button. On the left, there are tabs for 'Doodles', 'Text', and 'Layers', along with a list of elements including 'Dr. Ike admires ...' and 'A Nigerian male...'. A 'Background' section allows for applying a background to all slides. A 'Select Background' dialog box is open, showing options for 'No Background', 'Custom Color', and several pre-set backgrounds like 'BlackBoard 1', 'BlackBoard 2', 'BlackBoard 3', and 'GreenBoard 1'. On the right, there are 'Properties' and 'Project' buttons, and a 'Slide 1' indicator. At the bottom, a timeline shows six slides with their respective durations. The Windows taskbar is visible at the very bottom.

Key Features of a Whiteboard Animation

- A dynamic visual presentation by a drawing hand.
- Narrative embedding



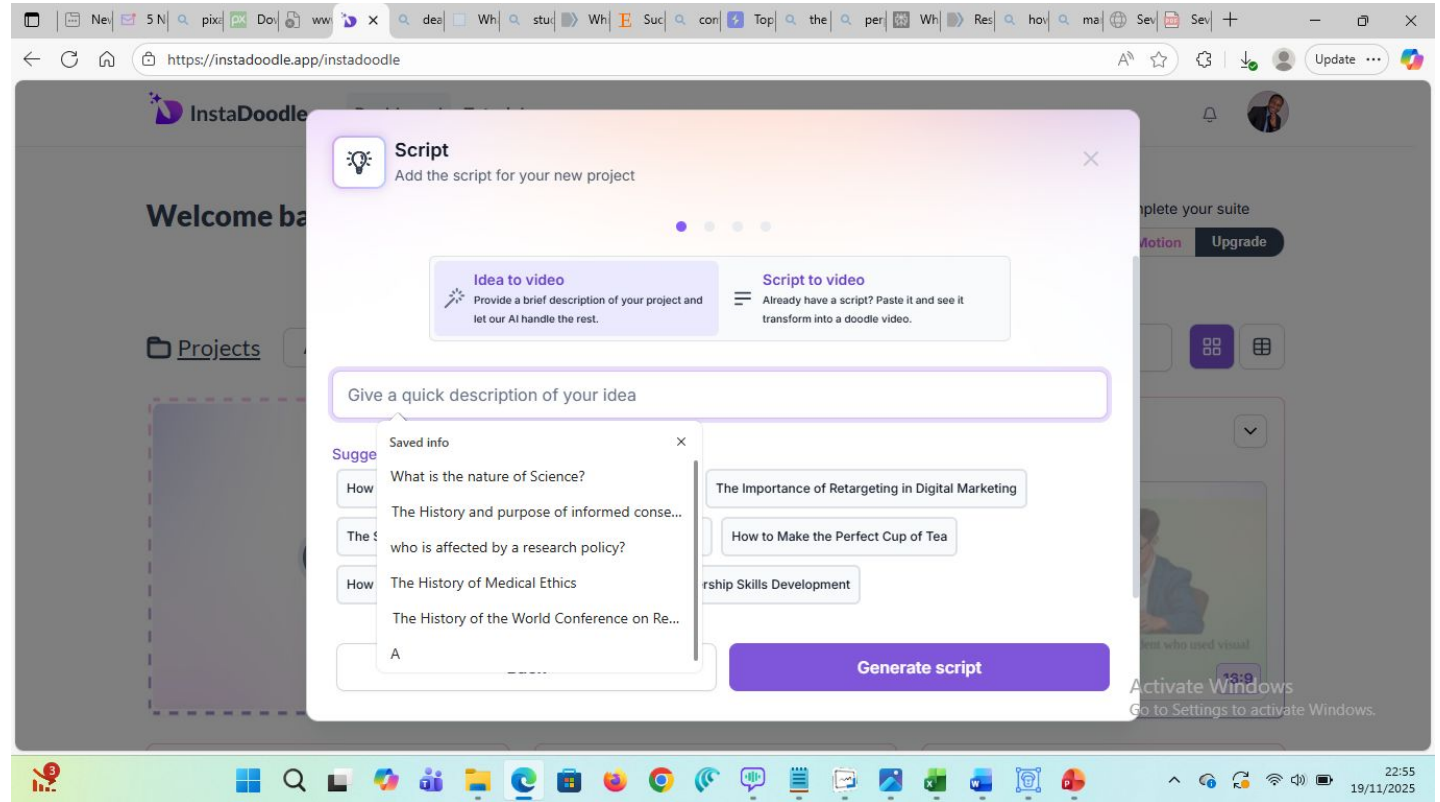
Rationale (Empirical Evidence)

- Progressive drawing hand increases learning variables- motivational, cognitive, affective, learning outcomes (*Li et al, 2019*)
- When compared with slideshow, audio and text, WB positively influence retention performances, **engagement**, and enjoyment. (*Turkay, 2016*)
- Process leads to a lower cognitive load while learning (*Sweller, 2010, 2019*)

Rationale (Empirical evidence)

- Narratives- A cognitive tool that can enhance learning based on the schema and script theories. (Bartlett, 1932; Schank, 1977)

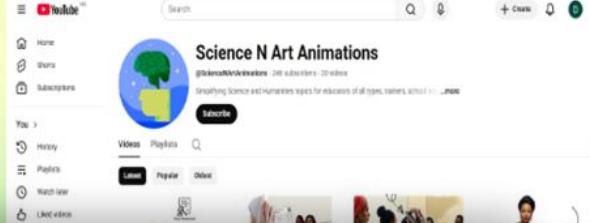
Instadoodle Script preparation Page



Dr Chiedozie G Ike & his early years in animations

2025 | 7m+

PART ONE: A BEGINNER- ANIMATOR

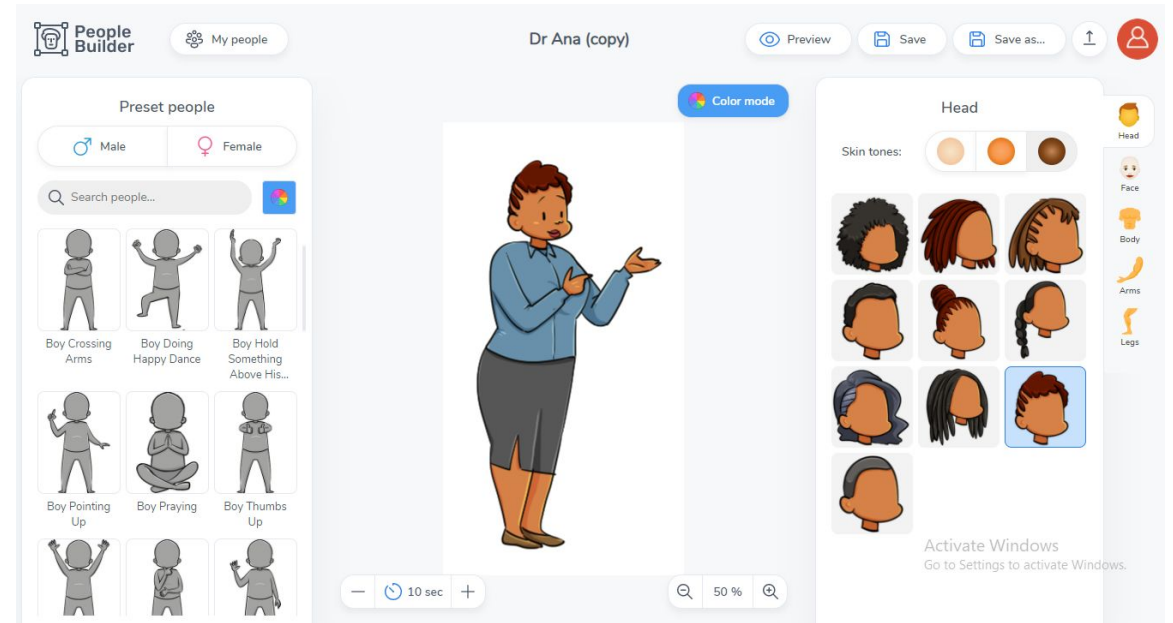
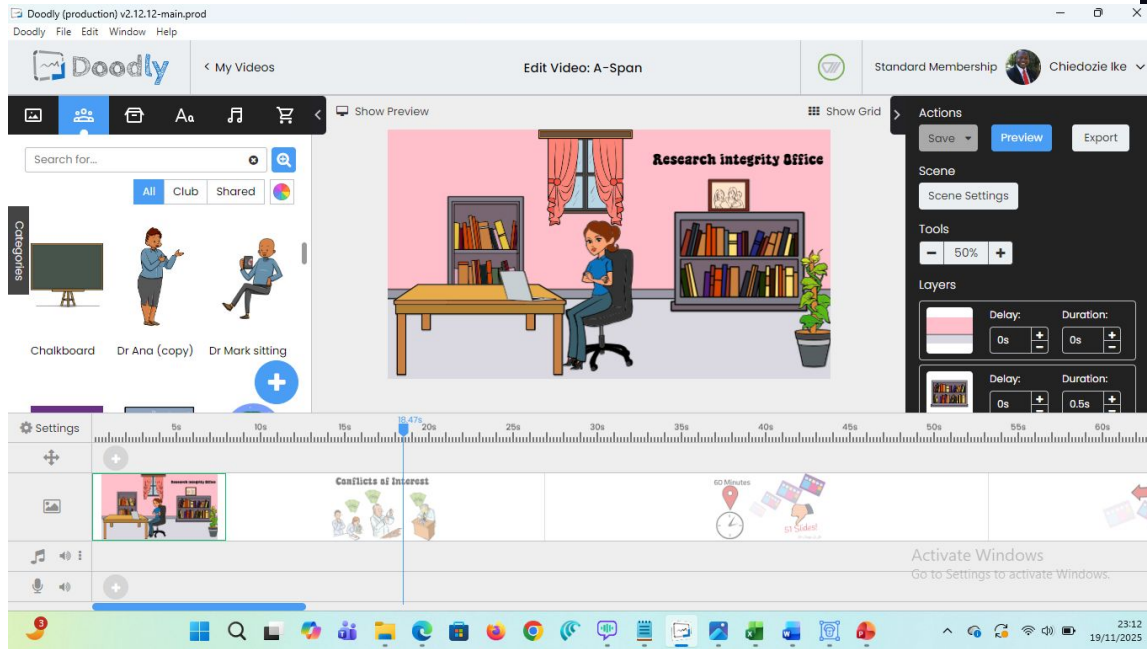
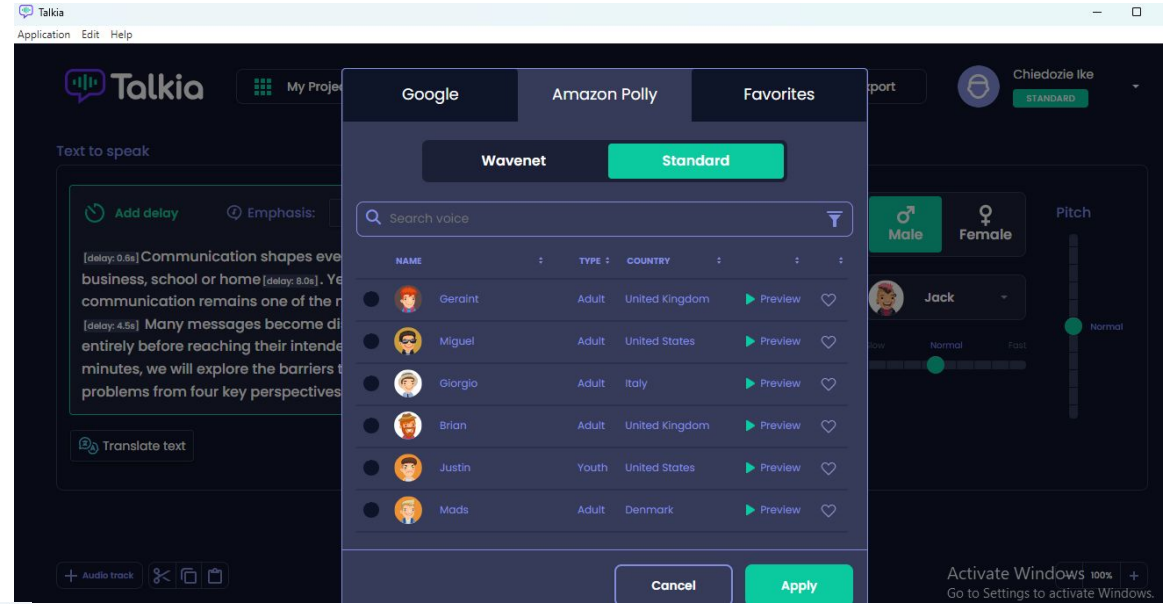


How I started Doodling

Creating an inclusive WB Animations

- Create culture/context sensitive animations
- Characters, voice-overs, language, drawing hands, script, etc should represent appropriate diversity
- Age-appropriate considerations
- Accessibility in design (Open Access)
- Engagement of appropriate in focus

Doodly Tools for Inclusivity Considerations



Implementation Considerations.....1

1. **Key topics-** Determined by the degree of complexity or learner's familiarity e.g- Dual-Use research, Data sharing and security, Justice and fairness, Dilemma in research, Surrogacy, enhancement, Autonomy and bodily integrity, etc.
2. **Purpose-** Breakdown complex subjects and reduce cognitive load (increase engagement)
3. **Available capacity/ Appropriate animator** (tutor/expert-created)
4. **Cost-effectiveness** of software and animation (based on some factors)

Implementation considerations...3

- Types of WB animations

Table of Contents

- Top 19 Whiteboard Animation Software to look out for in 2024
 - 1. Mango Animate Whiteboard Animation Software
 - 2. Raw Shorts Whiteboard Animation Software
 - 3. VideoScribe Whiteboard Animation Software



- 7. Renderforest Whiteboard Animation Software
- 8. The Draw Shop Whiteboard Animation Software
- 9. Animaker Whiteboard Animation Software
- 10. Doodly Whiteboard Animation Software
- 11. SQUIGL.AI Whiteboard Animation Software
- 12. Vyond Whiteboard Animation Software
- 13. Filmora Pro Whiteboard Animation Software
- 14. Biteable Whiteboard Animation Software
- 15. Animatron Whiteboard Animation Software
- 16. TTS Sketch Maker Whiteboard Animation Software
- 17. Adobe Animate CC Whiteboard Animation Software
- 18. Powtoon Whiteboard Animation Software
- 19. Moovly Whiteboard Animation Software

References

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1. Wood WB Innovations in teaching undergraduate biology and why we need them Annu Rev Cell Dev Biol 2009 ; 25 : 93 – 112 [[DOI](#)] [[PubMed](#)] [[Google Scholar](#)]
 2. Seymour E, Hunter AB, Weston TJ. Why we are still talking about leaving. In: Seymour E, Hunter AB, editors. Talking about leaving revisited: Persistence, relocation, and loss in undergraduate STEM education. Cham, Switzerland: Springer Nature Switzerland AG; 2019. pp. 1–53. [[Google Scholar](#)]

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- S. Türkay. The effects of whiteboard animations on retention and subjective experiences when learning advanced physics topics Comput. Educ., 98 (2016), pp. 102-114

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