

AECT Virtual Presentation, Las Vegas, NV, USA

MOOC Turns 20 Years Old: How to Recognize Plagiarism



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Acknowledgements

- Recent contributors to the [*IU Plagiarism Tutorials and Tests*](#)
 - *Cesur Dagli, Ph.D., Virginia Tech University*
 - *Rodney Myers, Ph.D., Indiana University*
 - *And others listed at:*
<https://plagiarism.iu.edu/credits.html>

TECHNOLOGY EMPOWERS TEACHING AND LEARNING

From teaching classes to IST students
to
teaching the world *How to Recognize Plagiarism*

Then: 2002

- As a professor at Indiana University (IU), I taught approximately 100 graduate students per year in Instructional Systems Technology (IST), mostly face-to-face and occasionally online
- In 2002, I led a small team of IST students in my advanced production class to design and develop the initial tutorial and test: How to Recognize Plagiarism
- At new IST student orientations, we told them:

We do not tolerate plagiarism; and we will not accept ignorance as an excuse. Do the instruction and test on your own time. Meet with your advisor if you need extra help. Hand in your signed Certificate to the department office, so we have it on file.
- That's [how this all got started in 2002, over 20 years ago](#)
- In following years, other instructors in colleges and high schools found our online tutorial and test to be useful and adopted it for students in their classes
- I had lots of help from IST graduate students to redesign and further develop IPTAT, especially from 2012 through 2016

Now: through Oct. 27, 2022

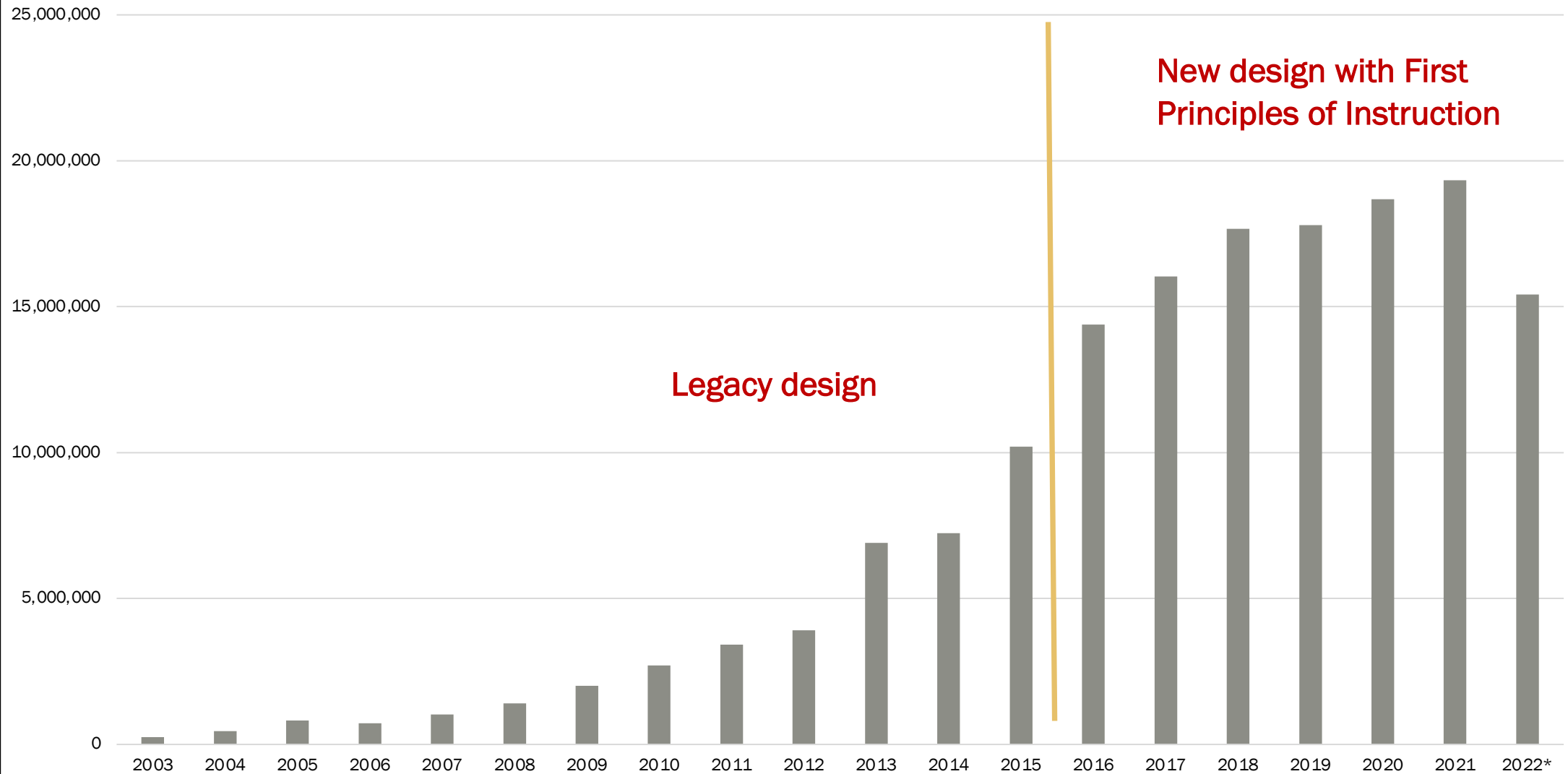
- I've been retired as a professor since 2013, no longer paid a salary
- The Indiana University Plagiarism Tutorials and Tests (IPTAT) are still available to the world, free of charge, 24x7x365
- So far in 2022 (nearly 43 weeks)
 - *161,926 students have successfully registered for IPTAT (~538 students per day)*
 - *132,861 students have passed an IPTAT Certification Test (~441 students per day)*
- I manage IPTAT from home, typically spending less than an hour per day:
 - *It's just me now.*
 - *I use the same Internet Service Provider as I do for watching TV and movies at home.*
 - *My office is my armchair and a MacBook.*
 - *IU provides the Web servers for running IPTAT.*
 - *Google Analytics tracks IPTAT users and stores APT temporal maps in their Cloud. IPTAT PHP scripts store student registration info and test results at IU.*

Major Milestones: Indiana University Plagiarism Tutorials and Tests (IPTAT)

Years	Events
2002	Legacy tutorial and test launched for students in Instructional Systems Technology
2003-12	Legacy tutorial and test adopted worldwide, used by millions of students
2013-14	Widespread cheating reported on 10-item Certification Test (CT). Large item pools newly developed resulting in trillions of randomized, unique 10-item CTs.
2015	Major redesign of IPTAT using Merrill's First Principles of Instruction
2016	Newly designed IPTAT launched on Jan. 2. Instructional-design research via IPTAT with MOO-TALQ survey.
2019-20	Instructional-design research via IPTAT and Google's Universal Analytics
2021-22	Instructional-design research via IPTAT and Google Analytics 4

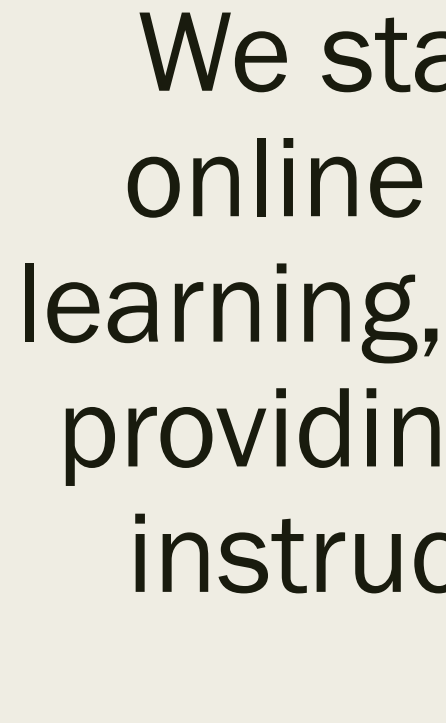
Go to mapsat.iu.edu for a recording of the full presentation

IPTAT Pageviews over 20 Years: Total = 160.4 M thru Oct. 2022*





Big Data: From Jan. 1, 2016 through Oct. 27, 2022 (356 weeks), more than

- 1,276,000 students have successfully registered for IPTAT
 - *3,584 per week*
 - *512 per day*
 - *21 per hour*
- 1,027,000 students have passed a difficult IPTAT Certification Test
 - *2,884 per week*
 - *412 per day*
 - *17 per hour*



We started out with
online teaching and
learning, and now it is
providing big data for
instructional-design
research.



Enough for now? Learn more about *How to Recognize Plagiarism* at your own pace

On the Web you can go to:

- <https://plagiarism.iu.edu> (see for your self)
- <https://plagiarism.iu.edu/faq.html> (answers to frequently asked questions)
- <https://mapsat.iu.edu> (presentations, published journal articles, book chapters, and new book)

WHAT IS *IPTAT*?

Indiana University Plagiarism Tutorials and Tests

Go to mapsat.iu.edu for a recording of the full presentation

2016:

Redesign of Indiana University Plagiarism Tutorials and Tests (IPTAT) using First Principles of Instruction

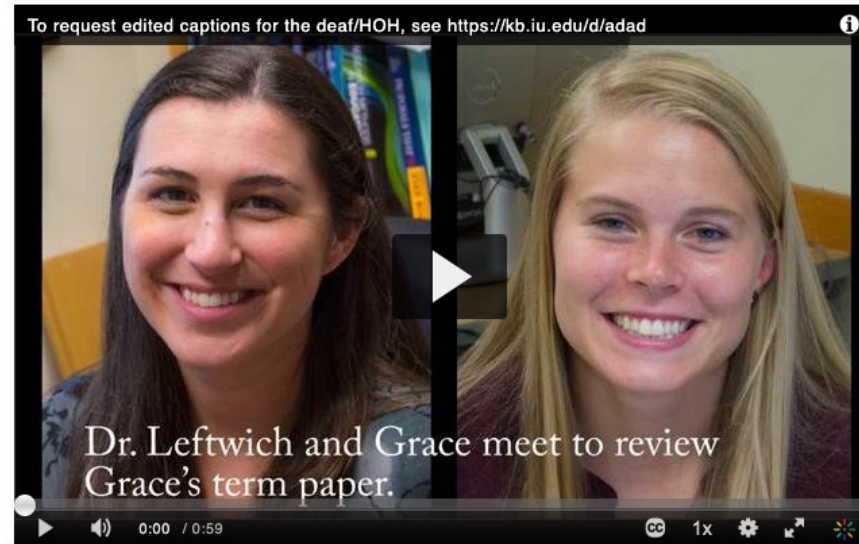


How to Recognize Plagiarism: Tutorials and Tests

Welcome to the Indiana University Plagiarism Tutorials and Tests

Learn how to recognize plagiarism, test your understanding, and earn a certificate.

To begin, watch this brief video of a teacher meeting with a student who has committed plagiarism. Click on the one-minute video below.



Video too slow? [Click here](#) for lower quality video.

Why is it important to avoid plagiarism?

The academic community highly values the acknowledgment of contributions to knowledge. When you properly acknowledge the contributions to knowledge made by other people, you are showing respect for their work. You are giving credit where credit is due. You are not misleading the reader to believe that your ideas and words are solely your own.

Start Here:
Welcome

Read Overview

Learn through
Tutorials

Register for
Certification Tests

Take Certification
Tests

Validate Certificates

See FAQs

View Resources

View Site Map

Acknowledge Site

First Principles of Instruction (FPI) used to redesign IPTAT: [Source: Merrill, 2020]

1. **Authentic problems or tasks** for students to do, arranged from simple to complex (e.g., <https://plagiarism.iu.edu/tutorials/index.html>);
2. **Activation** of student learning by helping students connect new learning with what they already know or believe (e.g., <https://plagiarism.iu.edu/tutorials/task1/activation.html>);
3. **Demonstration** of what is to be learned, by showing a variety of examples (e.g., <https://plagiarism.iu.edu/tutorials/task1/demonstration.html>);
4. **Application** of what is being learned, so students can try themselves and feedback is provided (e.g., <https://plagiarism.iu.edu/practiceTest.php?task=1&item=1>); and
5. **Integration** of what has been learned into students' own lives (e.g., <https://plagiarism.iu.edu/tutorials/task1/integration.html>).

IPTAT Design Example:

Authentic Problems

Basic Level: Recognize the basic difference between:

- *avoiding* plagiarism, and
- *committing* plagiarism.

Novice Level: When *one source is used*, recognize a proper quotation from an improper quotation:

- a *proper quotation* of someone else's words, and
- provision of the appropriate citation and reference.

Intermediate Level: When *one source is used*, recognize a proper paraphrase from an improper paraphrase:

- a *proper paraphrase* of someone else's words, and
- provision of the appropriate citation and reference.

Advanced Level: When *one source is used*, recognize various combinations of:

- *proper/improper paraphrasing*, and
- *proper/improper quotations*.

Expert Level: Put it all together. When *two or more sources are used*, recognize various combinations of:

- *proper/improper paraphrasing*,
- *proper/improper quotations*, and
- *misleading or careless writing*.

IPTAT Design Example:

Activation

Instruction: *Basic Level*

A video case and the IU definition of plagiarism

Gina discusses her blog with Grace. Gina does not know what plagiarism is. Grace points out that Gina has plagiarized in her blog post. Click the one-minute video below to view this case.



Video too slow? [Click here](#) for lower quality video.

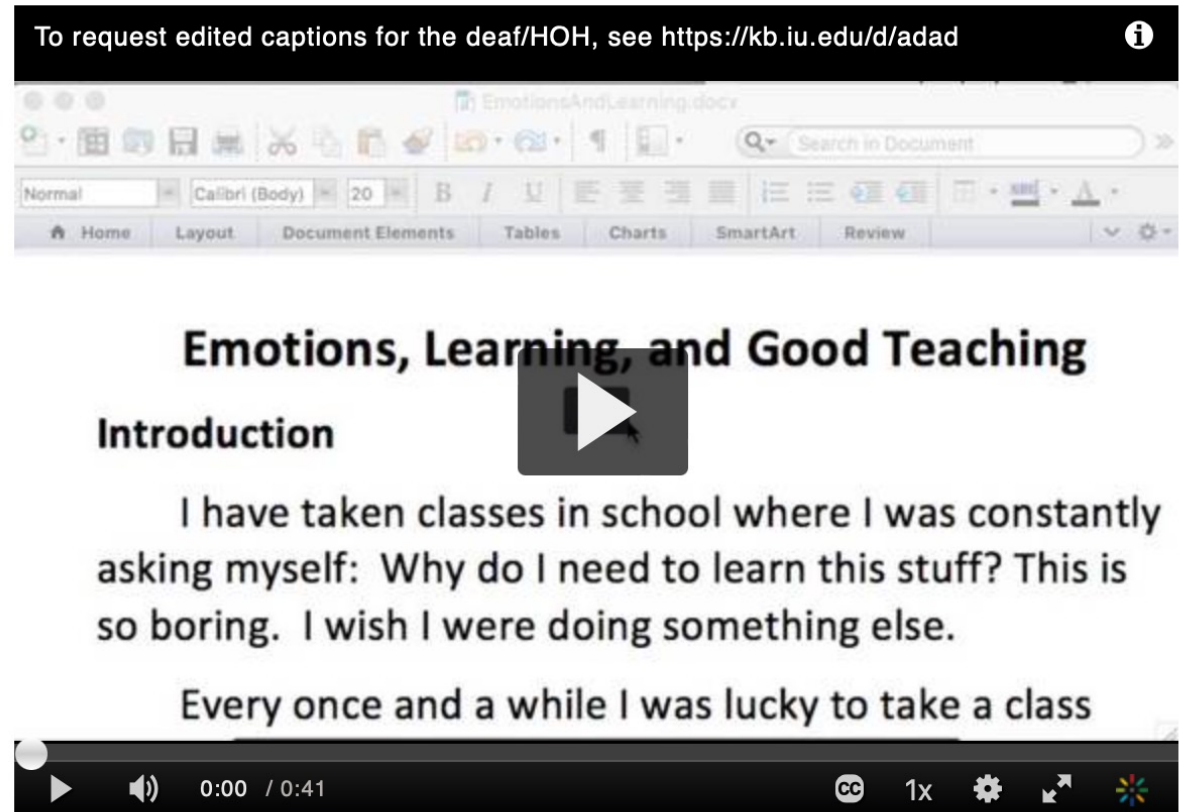
IPTAT Design Example:

Demonstration

Instruction: Non-Plagiarism Examples for *Basic Level*

Click on the videos below to watch each example.

Example 1. Non-plagiarism because the writer uses his own words and experience.



To request edited captions for the deaf/HOH, see <https://kb.iu.edu/d/adad>

Emotions, Learning, and Good Teaching

Introduction

I have taken classes in school where I was constantly asking myself: Why do I need to learn this stuff? This is so boring. I wish I were doing something else.

Every once and a while I was lucky to take a class

0:00 / 0:41

IPTAT Design Example:

Application

Is it:

- Word-for-word plagiarism
- Paraphrasing plagiarism
- Non-plagiarism?

Practice 1 of 4: *Intermediate Level*

Answer the question below by clicking or touching your choice. Then click or touch the 'Evaluate my answer' button to get detailed feedback if your answer is incorrect.

Question 1

In the case below, the original source material is given along with a sample of student work. Determine the type of plagiarism by clicking the appropriate radio button.

Original Source Material	Student Version
<p data-bbox="1054 665 1666 979">Instructional design theory requires at least two components: methods for facilitating human learning and development (which are also called methods of instruction), and indications as to when and when not to use these methods (which I call situations).</p> <p data-bbox="1054 1025 1228 1053">Reference</p> <p data-bbox="1054 1119 1679 1336">Reigeluth, C. M. (1999). What is instructional design theory and how is it changing? In C. M. Reigeluth (Ed.), <i>Instructional-design theories and models volume II: A new paradigm of</i></p>	<p data-bbox="1775 665 2405 979">Two components must be present in an instructional design theory. The first component (methods) describes how human learning will be supported, and the second component (situation) describes when certain methods ought to be used.</p>

IPTAT Design Example:

Application

Feedback

Original Source Material:

Instructional design theory requires at least two components: methods for facilitating human learning and development (which are also called methods of instruction), and indications as to when and when not to use these methods (which I call situations).

Reference

Reigeluth, C. M. (1999). What is instructional design theory and how is it changing? In C. M. Reigeluth (Ed.), *Instructional-design theories and models volume II: A new paradigm of instructional theory*. Mahwah, NJ: Lawrence Erlbaum Associates.

Student Version:

Two components must be present in an instructional design theory. The first component (methods) describes how human learning will be supported, and the second component (situation) describes when certain methods ought to be used.

Explanation:

The student version is **paraphrasing plagiarism** because it contains a summary of another author's ideas, but the in-text citation with the author and date is missing, and the reference is missing.

Correct Version:

Two components must be present in an instructional design theory. The first component (methods) describes how human learning will be supported, and the second component (situation) describes when certain methods ought to be used (Reigeluth, 1999).

IPTAT Design Example: Integration

Instruction: Reflect on what you've learned at the *Expert Level*

You should avoid both *word-for-word* and *paraphrasing* plagiarism when you are using *multiple* sources of information. Describe a situation in your own life where you would want to write or speak about *other people's ideas*, where you would want to both directly quote and summarize their ideas, and where these ideas come from multiple sources.

Click in the text box below, and briefly tell us about this. We will not share your comments with others.

[Continue to Practice Test at the Expert Level](#)

Certification Test: Instructions

Take Certification Tests

Each randomly selected question on a test provides source material from another author and a sample of student writing. You must determine whether the student version is word-for-word plagiarism, paraphrasing plagiarism, or not plagiarism. Most people find tests to be challenging, demanding concentration and attention to detail. Most people fail several tests before they pass.

To pass a Certification Test, you must answer at least 9 out of 10 questions correctly within 40 minutes.

If you pass, you can e-mail your unique Certificate to yourself, and you can view it online. Very importantly, you *and your instructor* can later [retrieve and validate your Certificate](#) to ensure it is not counterfeit.

Your chances of passing a test *by guessing alone* are about [1 in 20,000](#). On the other hand, you are nearly 4 times more likely to pass than to fail a test when you have done some of each level of the [instruction and practice with feedback](#). We know this from [research](#) on how students use this website. Test [hints](#) can also be helpful ([see video](#)).

If you answer less than 9 questions correctly, or you take longer than 40 minutes, you do not pass that test.

Certification Test:

Feedback when passing



How to Recognize Plagiarism: Tutorials and Tests

Results of Undergraduate Certification Test

Test ID: 4593768547829206365

Congratulations! You passed a Certification Test by answering at least 9 questions correctly.

The following name will appear on your Certificate: **Frickster @IU**

Your certificate will be sent to **tedfrick@iu.edu**

Click this button to e-mail your Certificate to yourself!

[Send my Certificate to the above e-mail address](#)

You are here: [Indiana University](#) > [Bloomington](#) > [School of Education](#) > [Instructional Systems Technology](#) > [How to Recognize Plagiarism](#)

Summary of Design by First Principles of Instruction (FPI)

- Within each level of complexity (Basic, Novice, Intermediate, Advanced, Expert), there are further FPI-designed learning activities:
 - *Activation*
 - *Demonstration*
 - *Application*
 - *Integration*
 - *Mastery Test*
- Students can navigate freely through IPTAT, picking and choosing what parts to do via sidebar navigation, an overall sitemap, and next page links
- There are trillions of criterion-referenced Certification Tests, each with 10 items randomly selected (pass/fail)

A NEW PARADIGM FOR INSTRUCTIONAL-DESIGN RESEARCH

MOOLA for IDR

Massive Open Online Learning Analytics for Instructional-Design Research

- *MOOLA for ID Research: A New Paradigm for Educational Inquiry*
- IPTAT is Massive, used by literally millions of students and instructors worldwide
- IPTAT is Open, available to anyone at no charge
- IPTAT is Online, accessible via the Web using computers, smartphones, and tablets
- We use Learning Analytics (LA)—specifically APT, Analysis of Patterns in Time—for Instructional-Design (ID) Research
- MOOLA is also slang for money (‘moolah’ is a Fijian word, meaning money)
- But the pay-off is not money, rather Big Data for research on effective teaching and learning methods

New book: 2022

- Google Analytics tracked student use of IPTAT website for 2 years, 2019-20
 - *Approximately 936,000 learning journeys, students from 222 countries and territories worldwide*
 - *About 1.9M temporal maps, 36M pageviews*
- We discovered in 2020 that Google's Universal Analytics (UA) could be leveraged to do Analysis of Patterns in Time (APT) when coupled with Excel spreadsheets
- Main APT finding: Successful students viewed 3 to 4 times as many unique Web pages designed with First Principles of Instruction as did unsuccessful students

Go to mapsat.iu.edu for a recording of the full presentation

INNOVATIVE LEARNING ANALYTICS FOR EVALUATING INSTRUCTION

A Big Data Roadmap to
Effective Online Learning

Theodore W. Frick, Rodney D. Myers,
Cesur Dagli and Andrew F. Barrett

2022: [Featured research paper](#) in ETR&D (follow-up using [Google Analytics 4](#) to do some of APT)

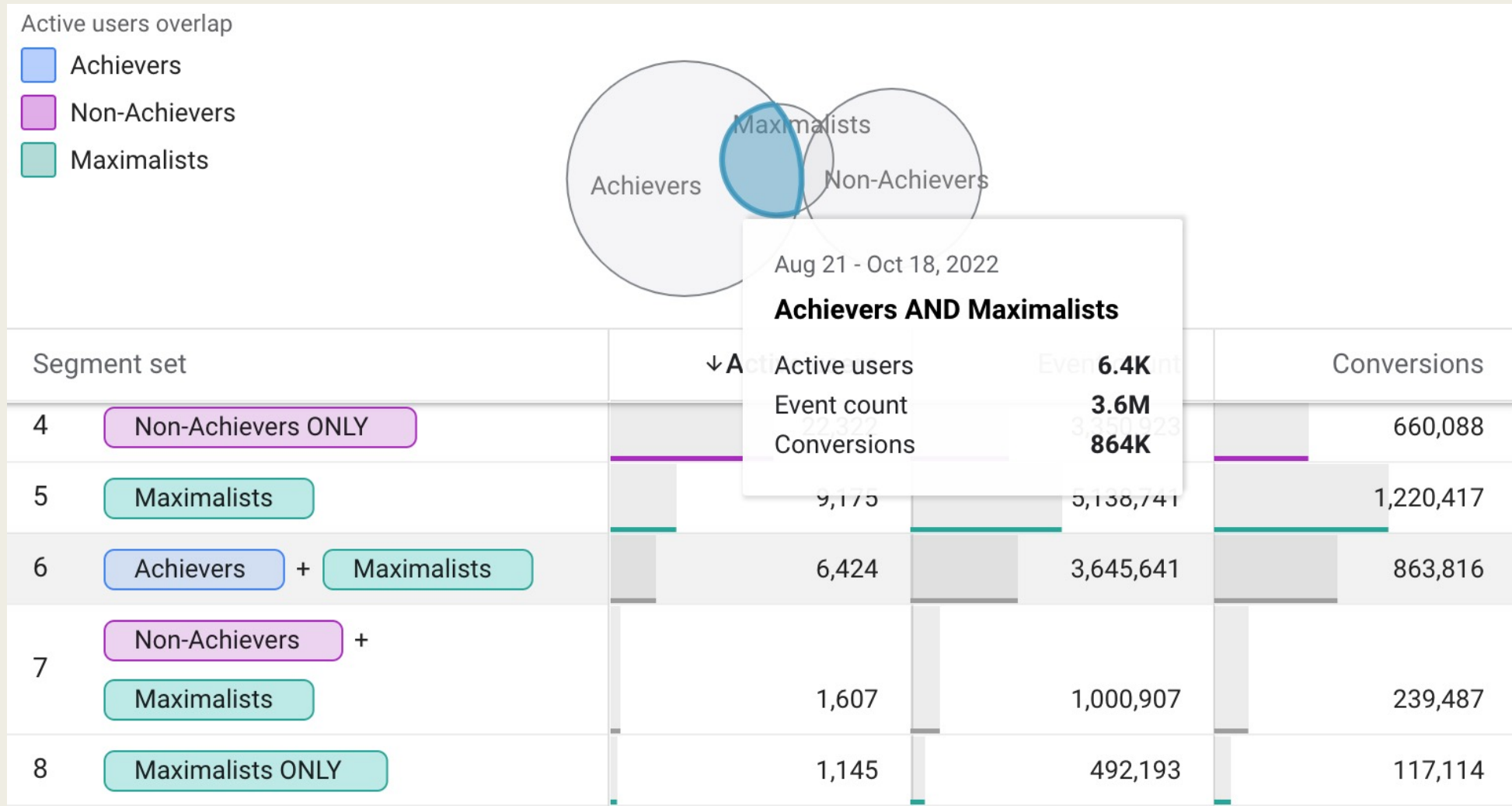
- GA4 tracked 172,417 learning journeys of students who were interacting with IPTAT from Jan. 1 through Mar. 25, 2021
- In 75,087 learning journeys, students took 2 or more Certification Tests (CTs)
 - *51,646 journeys resulted in passing a CT (Achievers)*
 - *23,307 did not pass a CT in 2 or more attempts (Nonmasters)*
- Of the 51,646 Achievers,
 - *42,046 had tried one or more IPTAT webpages designed with First Principles of Instruction (Traditionalists)*
 - *9,600 did NOT try any FPI webpages (Minimalists)*

Latest APT Results of 131,083 Learning Journeys Using GA4 (Aug. 21 – Oct. 18, 2022)

Learning Strategy	Non-Achiever	Achiever	Total	Likelihood of Passing	Likelihood of Failing	Odds P:F
Guessing (theoretical)	19,682	1	19,683	0.000	1.000	0.00
Minimalist (No FPI)	7,918	6,836	14,754	0.463	0.537	0.86
Traditionalist: Any FPI	16,532	34,551	51,083	0.676	0.324	2.09
Plagiarism Patterns Only	7,898	14,765	22,663	0.652	0.348	1.87
Practice Questions with Feedback	5,989	15,350	21,339	0.719	0.281	2.56
Maximalist (some of each FPI)	1,607	6,424	8,031	0.800	0.200	4.00
Achievers & Test Evals	40,838					
Non-Achievers & Test Evals	23,834					
Total Test Evals	64,672					
Active Users & No Test Evals	66,411					
Grand Total Learning Journeys	131,083					

Maximalists were 4 times more likely to pass a Certification Test. Maximalists had tried at least some of each part of IPTAT designed with First Principles of Instruction.

Doing Analysis of Patterns in Time with Google Analytics 4 (GA4) Segment Overlap



IS *IPTAT* A MOOC?

Does it matter?

Is IPTAT a MOOC: Massive Open Online Course?

- IPTAT definitely is massive, open, and online
- IPTAT is not a college or high school course as traditionally conceived; rather, IPTAT has been adopted as an instructional module by thousands of instructors worldwide, who use IPTAT as part of their courses
- Student-to-student and student-to-instructor interaction happens in those instructor's classes who have adopted IPTAT
- Student-to-student interaction also occurs in course LMSs, as well as social networks such as Reddit, Twitter and Facebook
- Students and instructors also contact IPTAT developers through an important feedback loop via Google Groups--user feedback has led to many improvements
- IPTAT developers also have created FAQs at <https://plagiarism.iu.edu/faq.html> to help save everyone time

IPTAT has been available for 20 years

- IPTAT is

- *Sustainable: now in its 3rd decade of existence 24x7x365*
- *Effective: Millions of students have learned to recognize plagiarism and pass Certification Tests*
- *Interoperable: works on almost any device (desktops, laptops, tablets, smartphones)*
- *Economical: requires minimal maintenance most of the time*
- *Flexible: can be used as part of a course much like textbooks or other learning objects; or it can be used stand-alone*

- Does it really matter whether IPTAT conforms to a narrow conception of MOOCs?

References

Frick, T. W. & Dagli, C. (2016). MOOCs for research: The case of the Indiana University plagiarism tutorials and tests. *Technology, Knowledge and Learning*, 21(2), 255-276. <https://rdcu.be/mEvf>

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Merrill, M. D. (2020). [M. David Merrill's first principles of instruction](#). Association for Educational Communications and Technology.

Links for the Indiana University Plagiarism Tutorial and Tests (IPTAT)

To see IPTAT for yourself:

<https://plagiarism.iu.edu>

Slides of this presentation (PDF)

<https://plagiarism.iu.edu/apt/IPTATturns20yearsOld.pdf>

Link to recording of this presentation

<https://mapsat.iu.edu>