

Comparing Alternative AI Syllabus Policies for Teaching Introductory Statistical Computing

Nicholas Bussberg, Kirstie Doehler, Laura Taylor, Mark Weaver

Department of Mathematics and Statistics

Elon University

Purpose



- Faculty are increasingly encouraged to include a course AI policy on their syllabus
- We compared "must cite" vs. "no AI" syllabus policies in introductory statistics courses for writing SAS code
- **Research Question:** Is the allowance of generative AI helpful for novice statistical coders?

Syllabus Policies



- We compared two forms of AI syllabus policies for using gen AI resources during SAS coding assignments:
 1. "Must cite" – use of AI was allowed for most coding assignments, but students required to clearly cite its use
 2. "No AI" – use of AI was prohibited on all coding assignments
- Each of the presenters "enrolled" two sections and assigned one to each syllabus policy (assignment was not random)
- 8 sections in total, 4 in fall 2025 and 4 in spring 2026

Assessments



- We collected data from 2 SAS coding assessments
- ***Anonymous*** post-semester survey (approved by Elon IRB):
 - Previous AI experience and understanding of course AI policies
 - Use of AI during SAS coding assessments
 - Levels of enjoyment, confidence, and excitement about SAS coding

Survey Respondents



- Students completing the survey:
 - 72 out of 118 (61%) enrolled in "Must Cite" sections
 - 47 out of 96 (49%) enrolled in "No AI" sections
- About 90% of respondents in each group correctly identified their course AI policy

Survey Results



"Must Cite" (n=72)	"No AI" (n=47)
6 (8%) said the course policy was "too lenient"	7 (15%) said policy was "too strict"
36 (50%) said they used gen AI on any SAS coding assignment	15 (32%) said they used gen AI on any SAS coding assignment
8 (11%) said students should <u>never</u> be permitted to use gen AI when writing SAS code	18 (38%) said students should <u>never</u> be permitted to use gen AI when writing SAS code

Survey Results



- Percentage of respondents who **agreed** or **strongly agreed**

Statement Summary	Must Cite (n=72)	No AI (n=47)	P-Value
Confident in ability to use SAS for later work	85%	87%	0.66
Enjoyed learning to code in SAS	69%	77%	0.53
Proud of knowledge gained in SAS coding	82%	77%	0.48
Would like to build on SAS knowledge in future	39%	43%	0.64
Excited to tell friends or family about coding skills	40%	51%	0.33

- P-values from Cochran-Mantel-Haenszel row mean score test, controlling for instructor, and comparing each item using all response levels on a 5-point scale

Selected Student Comments



Quotes from students that are leery of AI:

- "I think its an **epidemic** of people not being able to think for themselves. And it will be **scary** when these people graduate and don't know how to do anything because all of their assignments were done with AI"
- "I highly disagree with the use of AI in school..... It gets rid of some important factors regarding how you learn and process things by thinking for you. I am **concerned for the future** of AI and I **worry** that all creative originality is slowing going away. I have never used AI and I never will it's not something I find helpful....."
- "I think generative AI **stifles learning** and when you have AI do the work for you aren't learning anything."

Selected Student Comments



Quotes from students that are in support of AI:

- "I think students should be allowed to use AI because it is becoming the **future** and it is time to learn how to use it. Not stay in the dinosaur times. I would rather learn how to use it and cite it and what I did then never be able to use it and go into the **work force** without any experience with AI. If the **work force** is using it then we need to learn how to, to better prep students for their **futures**."
- "I support ai to **help answer** problems that you are having with your work or to **check your work** but not to do the work for you"
- "SAS code bugs are sometimes not obvious, U use AI to **help me fix codes** that I can't find the problem with. They point out the bugs pretty quickly, **saves a lot of time**"

Conclusions and Take-Away



- We found no significant or notable differences in student perceptions between the "must cite" and "no AI" groups
- Students expressed mixed feelings about AI -- some recognized its potential as a useful tool, while others worried about its abuse and the potential to "stifle learning"
- Take-away: All four presenters intend to implement "no AI" policies in this course in upcoming semesters, and will shift to using more in-class coding assessments to monitor AI use

Thank you!

Questions?



- Please contact us at
 - Nicholas Bussberg (nbussberg@elon.edu)
 - Kirstie Doehler (kdoehler@elon.edu)
 - Laura Taylor (ltaylor18@elon.edu)
 - Mark Weaver (mweaver11@elon.edu)

Slide Appendix

Elon University & Our Class



Institution

- Private, mid-sized liberal arts university in central North Carolina
- Approximately 6,200 undergraduates
- Elon institutional AI policy

Statistics in Application

- "Advanced introductory" course, statistical computing using SAS
- Required for many STEM and social science majors, also gen. ed.
- 8-10 sections every semester, up to 30 students/section
- Mostly first-years and sophomores, some juniors and seniors
- Typically represents the first exposure to coding for ~80% of class

SAS topics covered in class



- Course uses SAS Studio through SAS OnDemand for Academics
- Primary SAS topics included:
 - Data entry / importing data
 - Creating new variables
 - Subsetting data
 - Generating descriptive statistics and basic data visualizations
 - Performing standard analyses: t-tests and confidence intervals, chi-squared tests, ANOVA, correlation, and simple linear regression

Survey Results, by AI Use



- Percentage of respondents who agreed or strongly agreed on a 5-point scale, by *whether student reported any AI use*

Statement Summary	No AI Use	Some AI Use	P-Value
Feel confident able to use SAS for later work	90%	80%	0.10
Enjoyed learning to code in SAS	76%	67%	0.02
Proud of knowledge gained in SAS coding	82%	76%	0.06
Would like to build on SAS knowledge in future	49%	29%	0.02
Excited to tell friends or family about coding skills	49%	39%	0.09

- P-values from Cochran-Mantel-Haenszel row mean score test, controlling for instructor, and comparing each item using all response levels on a 5-point scale