

DS-Awareness-Readiness-Aspirations-Post-survey-Spring 2024

Start of Block: Default Question Block

Q1

Welcome to The Research Study!

Title of Study: Targeted Infusion Project: Infusing Data-Centered Pedagogy and Data-Analytical Skills in Introductory Statistics

Purpose of Study: This study aims to redesign the Introductory Statistics course at NCA&T to enhance students' understanding of fundamental statistical concepts, train students to think structurally with data and make data-informed decisions, and attract and prepare students to pursue data science education and/or careers. In order to conduct this research study, we need to collect data from the NCA&T students enrolled in the Introductory Statistics course about their data science awareness, readiness and aspirations.

Confidentiality: This study has been approved by the Institutional Review Board at NCA&T. Any information that is obtained in connection with this study and that can be identified with you will remain confidential. Your anonymized data will be used only by the study investigators and all results will be reported in aggregate form so that no individual student can be identified.

Your decision whether or not to participate will not affect your performance in the course or your relationship with NCA&T in any way. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without prejudice.

If you have any questions about this study, you may contact the Principal Investigator (Dr. Sayed Mostafa) at (336) 285-3104 or via email at sabdelmegeed@ncat.edu. If you have any study-related concerns or any questions about your rights as a participant in the study, you may call the Office of Research Compliance and Ethics at North Carolina A&T State University at (336) 285-3179 or email rescomp@ncat.edu.

The survey should take you about 10 minutes to complete.

By clicking the button below to start the survey, you acknowledge that the study is voluntary, You are 18 years of age or older, and You are aware that you may choose to terminate your participation at any time for any reason.

Q2 Consent:

- ☐ I voluntarily consent to participate in this study (1)
- ☐ I don't consent to participate in this study (2)

End of Block: Default Question Block

Start of Block: Demographics

Q3 I am

- ☐ Female (1)
 - ☐ Male (2)
 - ☐ Non-binary / third gender (3)
 - ☐ Trans man (4)
 - ☐ Trans woman (5)
 - ☐ Prefer not to say (6)
-

Q4 Are you of Hispanic, Latino, or Spanish origin?

- ☐ Yes (1)
 - ☐ No (2)
-

Q5 How would you describe yourself?

- ☐ American Indian or Alaska Native (1)
 - ☐ Asian (2)
 - ☐ Black or African American (3)
 - ☐ Native Hawaiian or Other Pacific Islander (4)
 - ☐ White (5)
 - ☐ Other (Please tell us how you identify yourself) (6)
-
- ☐ Prefer not to say (7)

Q6 I consider my family

- ☐ Working class (1)
- ☐ Lower middle class (2)
- ☐ Middle class (3)
- ☐ Upper middle class (4)
- ☐ Wealthy class (5)

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Q7 What is your classification?

- ☐ Freshman (1)
 - ☐ Sophomore (2)
 - ☐ Junior (3)
 - ☐ Senior (4)
-

Q8 Have you taken AP (Advanced Placement) Statistics in high school?

- ☐ Yes (1)
 - ☐ No (2)
-

Q9 I have taken the following college-level math courses before (select all that apply)

- ☐ MATH 101 (Fundamentals of Algebra and Trigonometry I) (1)
 - ☐ MATH 102 (Fundamentals of Algebra and Trigonometry II) (2)
 - ☐ MATH 103 (College Algebra and Trigonometry for Eng. and Sci I) (3)
 - ☐ MATH 104 (College Algebra and Trigonometry for Eng. and Sci II) (4)
 - ☐ MATH 110 (Pre-Calculus for Eng. and Sci) (5)
 - ☐ MATH 111 (College Algebra and Trigonometry) (6)
 - ☐ MATH 112 (Calculus for Business and Tech) (7)
 - ☐ MATH 131 (Calculus I) (8)
 - ☐ MATH 132 (Calculus II) (9)
 - ☐ Other (Please specify) (11)
-
- ☐ ☒ None (12)

Page Break

Q10 What is your major? (Please type in the space)

Q11 Is MATH 224 required for your major?

☐ Yes (1)

☐ No (2)

☐ Not sure (3)

Q12 What career do you plan to seek after graduation? (Please type in the space even if you think you may change your career later prior to graduation)

End of Block: Demographics

Start of Block: Awareness

Q13 Have you ever heard about a field of study called "Data Science"?

☐ Yes (1)

☐ No (2)

Display This Question:

If Have you ever heard about a field of study called "Data Science"? = Yes

Q14 How did you hear about the Data Science field?

☐ In one of my classes (Please specify) (1)

☐ In a special campus lecture / event (Please specify) (2)

☐ From a professor outside of class (3)

☐ From the media (4)

☐ Other (Please specify) (5)

Page Break

Display This Question:

If Have you ever heard about a field of study called "Data Science"? = Yes

Q15 Have you ever taken a course in Data Science?

☐ Yes (1)

☐ No (2)

Page Break

Q16 Are you aware that NCA&T offers courses in Data Science?

☐ Yes (1)

☐ No (2)

Q17 Are you aware that NCA&T offers an undergraduate certificate in Data Science?

☐ Yes (1)

☐ No (2)

Q18 Are you aware that NCA&T offers degrees with concentration in Data Science?

☐ Yes (1)

☐ No (2)

Page Break

Q19 A data scientist is someone who (Select all that apply)

☐

Has programing skills (1)

☐

Has statistical skills (2)

☐

(3)

Has expertise in some domain / field (e.g., Biology, Physics, Technology, etc.)

☐

Can tell a story based on data (4)

☐

Can analyze big data (5)

☐

Other (Please specify) (6)

☐

Don't know (7)

Page Break

Q20 What major do you think you need to have to become a data scientist? (You can choose more than one major)

- ☐ ☒ Any major (18)
- ☐ Agricultural science major (e.g., Animal Science, Agricultural & Environmental System, Family & Consumer Science, Food & Nutritional Sciences, etc.) (6)
- ☐ Business or Economics major (20)
- ☐ Computer Science or Information Technology major (1)
- ☐ Engineering or Technology major (16)
- ☐ Health science major (e.g., Environmental Health & Safety, Nursing, etc.) (12)
- ☐ Mathematics or Statistics major (2)
- ☐ Science major (e.g., Biology, Chemistry, Physics, etc.) (3)
- ☐ Social science major (e.g., Psychology, Sport Science & Fitness Management, etc.) (4)
- ☐ ☒ Don't know (19)

Page Break

Q21 Where do you think data scientists can work? (Select all that apply)

- ☐ Google (1)
 - ☐ Facebook (2)
 - ☐ Twitter (3)
 - ☐ Amazon (4)
 - ☐ Microsoft (5)
 - ☐ Academia (Colleges and Universities) (6)
 - ☐ Government (7)
 - ☐ Non-profit Organizations (10)
 - ☐ Other (Please specify) (8)
-
- ☐ ☒ Don't know (9)

Page Break

Q22 About how much is the average annual salary of data scientists?

- ☐ Less than \$60,000 (3)
- ☐ \$60,000 to \$80,000 (4)
- ☐ \$80,000 to \$100,000 (6)
- ☐ \$100,000 to \$120,000 (7)
- ☐ \$120,000 to \$140,000 (9)
- ☐ \$140,000 to \$160,000 (11)
- ☐ More than \$160,000 (12)
- ☐ Don't know (13)

End of Block: Awareness

Start of Block: Readiness - Current

Q23 Think about your current level of data analysis skills when responding to the following questions.

To what extent do you disagree or agree with the following statement?

Q24 I can summarize data sets with summary statistics and graphics using the RStudio software.

- ☐ Strongly disagree (25)
- ☐ Disagree (26)
- ☐ Somewhat disagree (27)
- ☐ Somewhat agree (28)
- ☐ Agree (29)
- ☐ Strongly agree (30)

Page Break

Q25 I can perform basic statistical inference using the RStudio software.

- ☐ Strongly disagree (1)
- ☐ Disagree (2)
- ☐ Somewhat disagree (3)
- ☐ Somewhat agree (4)
- ☐ Agree (5)
- ☐ Strongly agree (6)

Page Break

Q26 I can perform basic statistical modeling (linear and/or logistics regression).

- ☐ Strongly disagree (1)
- ☐ Disagree (2)
- ☐ Somewhat disagree (3)
- ☐ Somewhat agree (4)
- ☐ Agree (5)
- ☐ Strongly agree (6)

Page Break

Q27 I can create reproducible data analysis reports using the R Markdown software.

- ☐ Strongly disagree (1)
- ☐ Disagree (2)
- ☐ Somewhat disagree (3)
- ☐ Somewhat agree (4)
- ☐ Agree (5)
- ☐ Strongly agree (6)

Page Break

Q28 I am adequately prepared to apply statistical and data-analytical techniques and/or tools to study a given topic.

- ☐ Strongly disagree (1)
- ☐ Disagree (2)
- ☐ Somewhat disagree (3)
- ☐ Somewhat agree (4)
- ☐ Agree (5)
- ☐ Strongly agree (6)

End of Block: Readiness - Current

Start of Block: Readiness - Pre

Q29 **Think back before taking this Statistics course when responding to the following questions.**

To what extent do you disagree or agree with the following statement?

Q30 **Prior to starting this class**, I could summarize data sets with summary statistics and graphics using the RStudio software.

- ☐ Strongly disagree (25)
 - ☐ Disagree (26)
 - ☐ Somewhat disagree (27)
 - ☐ Somewhat agree (28)
 - ☐ Agree (29)
 - ☐ Strongly agree (30)
-

Page Break

Q31 **Prior to starting this class**, I could perform basic statistical inference using the RStudio software.

- ☐ Strongly disagree (1)
- ☐ Disagree (2)
- ☐ Somewhat disagree (3)
- ☐ Somewhat agree (4)
- ☐ Agree (5)
- ☐ Strongly agree (6)

Page Break

Q32 Prior to starting this class, I could perform basic statistical modeling (linear and/or logistics regression).

- ☐ Strongly disagree (1)
- ☐ Disagree (2)
- ☐ Somewhat disagree (3)
- ☐ Somewhat agree (4)
- ☐ Agree (5)
- ☐ Strongly agree (6)

Page Break

Q33 Prior to starting this class, I could create reproducible data analysis reports using the R Markdown software.

- ☐ Strongly disagree (1)
- ☐ Disagree (2)
- ☐ Somewhat disagree (3)
- ☐ Somewhat agree (4)
- ☐ Agree (5)
- ☐ Strongly agree (6)

Page Break

Q34 Prior to starting this class, I was adequately prepared to apply statistical and data-analytical techniques and/or tools to study a given topic.

- ☐ Strongly disagree (1)
- ☐ Disagree (2)
- ☐ Somewhat disagree (3)
- ☐ Somewhat agree (4)
- ☐ Agree (5)
- ☐ Strongly agree (6)

End of Block: Readiness - Pre

Start of Block: Aspirations - Current

Q35 Think about your current plans for future data science education when responding to the following questions.

Q36 Do you plan to take Data Science course(s) during your undergraduate program or during your graduate study (if you plan to do graduate studies)?

- ☐ Yes (1)
 - ☐ No (2)
 - ☐ Not Sure (3)
-

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Q37 Do you plan to **complete a certificate in Data Science** during your undergraduate program or during your graduate study (if you plan to do graduate studies)?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Not Sure (3)

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Q38 Do you plan to **complete a minor in Data Science** during your undergraduate program or during your graduate study (if you plan to do graduate studies)?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Not Sure (3)

Page Break

Q39 Do you plan to **complete a degree in Data Science** during your undergraduate program or during your graduate study (if you plan to do graduate studies)?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Not Sure (3)

End of Block: Aspirations - Current

Start of Block: Aspirations - Pre

Q40 When responding to the following questions, think about your plans for data science education **before starting this course.**

Q41 **Prior to starting this class,** did you plan to **take Data Science course(s)** during your undergraduate program or during your graduate study (if you plan to do graduate studies)?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Not Sure (3)

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Q42 **Prior to starting this class**, did you plan to **complete a certificate in Data Science** during your undergraduate program or during your graduate study (if you plan to do graduate studies)?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Not Sure (3)

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Q43 **Prior to starting this class**, did you plan to **complete a minor in Data Science** during your undergraduate program or during your graduate study (if you plan to do graduate studies)?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Not Sure (3)

Page Break

Q44 **Prior to starting this class**, did you plan to **complete a degree in Data Science** during your undergraduate program or during your graduate study (if you plan to do graduate studies)?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Not Sure (3)

End of Block: Aspirations - Pre
