

Academic Unit Writing Plan

Writing Plan COVER PAGE

X 1st edition _____ Revision

Undergraduate Program in Neuroscience
Academic Unit Name

CAS
College

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Contact Information (email) and (Phone)

Writing Plan Ratified by Faculty

Date: June 2, 2022 Votes: 4 (yes)/0 (no)

Process by which Writing Plan was ratified within unit: (vote, consensus, other): consensus

Signatures

WID Faculty Consultant: _____

Department/Program Chair/Director: _____

Director Writing in the Disciplines: _____

Associate Dean or Dean of College: _____

Unit Profile:

_____ Professors	_____ 3 _____ Lecturers
_____ Assoc. Professors	_____ 2 _____ Sr. Lecturers
_____ Asst. Professors	_____ Master Lecturers
_____ Research/Clinical Professors	_____ Other (e.g. Affiliated Faculty)

Majors within the Unit:

Major Name	Total # undergrad students enrolled in major as of Spring 2022	Total # undergrad students graduating w/major in Spring 2022
Neuroscience	_____ 380 _____	_____ 97 _____
Neuroscience/Philosophy	_____ 30 _____	_____ 3 _____

Writing Plan Narrative (Executive Summary) - For what reason(s) did this unit (department, school, college) become involved in this project? What key implementation activities are proposed in this edition of its Writing Plan and what, briefly, is the thinking behind these proposed activities?

Over the past several years, the faculty of the Undergraduate Program in Neuroscience (UPN) have made efforts to expand the breadth and depth of writing instruction in the program. In 2019, we made three major changes. Recognizing the importance of writing to all of our graduates, we revised our Program Learning Goals to include effective scientific writing. At the same time, we designed a new lab curriculum for a required Writing-Intensive core course (NE 203) centered around the development of an NIH-style grant proposal, a new genre for our students. This course now complements pre-existing Writing-Intensive courses in our curriculum, such as NE 102 and the ISE sequence, where students learn to write scientific manuscripts. Lastly, we began a partnership with the CAS Writing Program to offer peer tutoring in writing for our majors (the NE Writing Consultants Program).

While these changes highlighted the value of writing in our program and provided students with an expanded curriculum and new resources, they also illuminated opportunities for further improvements to the way we teach writing in the UPN (see Section #3). This Writing Plan, a joint product of faculty from the UPN and the Writing Program, is intended to capitalize on those opportunities and further enhance writing instruction in the UPN.

As explained in detail in other sections, this Writing Plan proposes many individual ideas (see Section #5), grouped into several common themes. These include plans to:

- add new opportunities for student writing in NE classes, including the development of a new 300-level course exposing students to diverse genres of scientific communication;
- standardize and clarify writing assignment materials such as assignment sheets, rubrics, and grading criteria across NE courses to improve student understanding of expectations;
- generate universal resources that can be used across NE courses, such as common rubrics, assignment sheet templates, and instructional materials such as videos and exemplar assignments;
- create centralized repositories such as Blackboard sites to house these universal resources and archive student assignments across semesters;
- improve communication and coordination within our instructional teams of UPN Faculty, graduate Teaching Fellows, UPN staff members, and undergraduate Learning Assistants, Writing Consultants, and graders; and
- foster continued collaboration and sharing of expertise between faculty in the UPN and the Writing Program.
- grow our Program's ability to offer Writing-Intensive and research-based courses through investment in more faculty and teaching lab resources.

Our ultimate goal is to offer our students more opportunities for writing, expand the genres students are exposed to across the entire UPN curriculum, and provide students with more consistent and straightforward expectations for their written work, both from course documents and our instructional teams. Given the value of writing to all of our graduates, both those that continue in neuroscience and those that pursue other careers, we see continued investment in our writing curriculum as a high priority for the UPN over the coming years. Many

of our proposed changes can be accomplished with existing UPN, CAS (e.g. collaboration with the Writing Program), and University resources (e.g. collaboration with the CTL). Our most ambitious proposals, including the development of research-based courses that could yield research publications co-authored by students, will require increased investment in the UPN faculty, lab space, and operating budget. Achieving these goals will allow the UPN to serve as an exemplar to other units within and beyond BU.

Section #1: Discipline Specific Writing Characteristics (*what characterizes academic and professional communication in this discipline?*)

The UPN faculty agree that scientific writing is an essential part of academic and professional communication in the field of neuroscience. The most common genres we have identified include primary research articles, review style articles, grant proposals, and oral or digital multimedia presentations. Regardless of genre, all scientific communication follows a clear expository style with a focus on careful description, logical narrative, critical analysis of presented data, and an overall use of concise and clear language (specific to the neuroscience subsdiscipline) to disseminate results and conclusions. Sources must be cited from appropriate and reliable sources such as the peer-reviewed literature.

As such, the learning objectives and implementation strategies laid out in this writing plan have been structured around these characteristics of effective scientific communication.

Section #2: Desired Writing Abilities (*With which writing abilities should students in this unit's majors graduate?*) – *Longitudinal approach to writing*

General

- Be able to find, recognize, and evaluate scientific writing in various forms, from peer-reviewed sources to popular press articles. This includes scientific manuscripts and grant proposals as well as posters, oral presentations, cover letters, and other non-peer reviewed writing (social media posts, popular science articles, etc.).
- Produce concise and focused scientific communication, as would be expected in the workplace and/or continuing education, using the terminology specific to the subdiscipline in neuroscience.
- Argue logically and persuasively, based on presented evidence, using language that is appropriate for the intended audience.
- Ability to recognize and avoid plagiarism. Accurately cite sources within their work, using a reference manager, (such as RefWorks) for in-text citations.
- Understand, interpret, and evaluate research and data to draw evidence-based conclusions.
- Formulate novel research questions that are appropriate in scope and topic to the time and resources available.
- Generate informative and appropriately-captioned figures and tables.
- Describe quantitative analyses accurately (e.g., statistical results and mathematical solutions).
- Write in a style that focuses on results (rather than on those who obtained the results)
- Be able to revise and edit self/peer-written work.

Core sequence (NE 102/203 or NE 116/218)

- Understand the structure and purpose of a scientific manuscript, including the type of information conveyed in each section (Abstract, Introduction, Methods, Results, Discussion).
- Understand the structure and purpose of an NIH-style grant proposal, including the type of information conveyed in each section (Specific Aims, Significance, Approach, Innovation).
- Work and write effectively as part of a collaborative team.

Section #3: Integration of Writing into Unit's Undergraduate Curriculum: *(How is writing instruction and support currently positioned in this unit's undergraduate curriculum (or curricula)? What, if any, structural plans does this unit have for changing the way that writing and writing instruction are sequenced across its course offerings? With what rationale are changes proposed and what indicators will signify their impact?)*

Currently, all Neuroscience undergraduates take a sequence of two Writing-Intensive classes as a part of the required core sequence of the major, generally in their freshman and sophomore years. Students take either NE 102 followed by NE 203, or the Integrated Science Experience (ISE) sequence (CH/NE/BI 116 followed by CH/NE/BI 218). In both cases, students learn scientific writing skills through the lab portion of the course. Each course communicates discipline-specific scientific writing expectations individually through assignment sheets and rubrics, which are not standardized. Most students write one journal-article style manuscript (NE 102) and one NIH-style grant proposal (NE 203) as their major writing assignments in this sequence; students on the ISE track instead write two manuscripts.

After taking their core courses, NE students select five elective courses based on their individual interests. Some electives incorporate scientific writing or communication into their assignments, although few are Writing-Intensive. Almost all of these courses are offered by contributing units (mostly Biology, Psychological & Brain Sciences, and Mathematics & Statistics) and thus their curriculum is not set by the UPN. At the senior level, approximately 15-20% of NE majors complete a year-long Honors Research project (NE 401/402), which culminates in the writing of a 35-50 page Senior Thesis (generally in the style of a scientific manuscript describing their research outcomes).

In summary, current NE majors have a structured introduction to scientific writing in their required 100/200-level core sequence, then have the opportunity for advanced writing as senior Honors researchers, but comparatively little opportunity to practice scientific writing in their intermediate-level coursework. While the genres they are exposed to (manuscripts and grant proposals) are central to neuroscience, students lack exposure to other important forms of scientific writing (such as review articles or writing aimed at non-specialists). Lastly, writing expectations are currently communicated idiosyncratically, without standardization across courses.

In this writing plan we propose changes to this framework that will provide improved and broader opportunities for scientific writing throughout our undergraduate curriculum. In part, we will standardize our methods of writing instruction and the ways we communicate expectations for written assignments through assignment sheets and rubrics. This will include the addition of writing assignments to NE 101 Introduction to Neuroscience; the development of a new 2-credit Writing-Intensive elective course (CAS NE 370 Neuroscience Communications) at the junior level that exposes students to other genres of scientific writing beyond the research manuscript and grant proposal; and the creation of standardized rubrics, assignment sheets, and instructional materials focused on scientific writing that can be used across all NE courses.

The addition of standardized and customizable rubrics which address broader scientific writing skills will serve to emphasize the expectations of writing in neuroscience as a discipline and will provide a consistent framework to make program-wide assessments on student progress in the future. In Phase 1 of the Writing Plan

implementation, UPN faculty will develop a longitudinal assessment for undergraduate writing that takes into account the rubric scores, assessment of student writing in cumulative portfolios, and periodic student surveys.

Section #4: Assessment of Student Writing (*How does this unit currently communicate writing expectations – see sections #1/#2 – to undergraduate students? **What do these expectations look like when they are translated into ratable criteria?** How satisfied is the unit faculty that students are adequately familiar with these expectations? How satisfied is the unit faculty that student writers successfully meet identified expectations by the time they graduate? Why? If less than satisfied, what plans does the unit propose for closing the gap?)*

In Fall 2021, we began tracking student experiences in regards to scientific writing pedagogy through a longitudinal survey starting in their first core course, NE 101. The overall results of that survey are that students generally self-identify as above average writers but have trouble translating writing skills acquired in WR 120 and 15X courses to scientific writing disciplines. Discussions with faculty in the NE program have identified student weaknesses in analysis, conciseness, and clarity.

Presently, each course presents its writing assignment expectations individually, without a consistent assessment format. Some courses use a rubric, while others have a detailed narrative assignment sheet outlining expectations. Student evaluations sometimes report that students are unsure of expectations and desire more structured and centralized guidance. Student requests from the Fall 2021 survey also include more effective scaffolding, clearer expectations of grading, and earlier access to the assignment.

One strategy we propose to address this identified problem is to standardize how we communicate scientific writing expectations across the core NE courses. We will use a common rubric format that includes overriding assessment criteria common to all forms of scientific writing as we have laid out in Section 2. This rubric will have the flexibility to include assignment specific criteria that are easily communicated to external graders for implementation. Graders and students can use this style rubric to determine exactly what students must accomplish. This type of rubric lends itself to being converted to a qualtrics form for ease of data collection and comparison.

Overall assessment of scientific writing will include four categories and will receive a level of “Approaching Mastery,” “Attempting Mastery,” or “Needs Improvement.” This leveling score is not necessarily tied to the assignment score. The benefits of this include a common presentation of scientific writing expectations, a mode to track student progress for Program faculty and administrators, and preparation for future graders. Over time, we can review ratings to see if there have been any shifts in the quality of submitted work.

Sample Rubric:

Scientific Writing Expectations			
	APPROACHING MASTERY	ATTEMPTING MASTERY	NEEDS IMPROVEMENT
Represents concise, focused, and accurate scientific communication.			
Uses the terminology specific to the subdiscipline in neuroscience.			
Generates well-reasoned research questions that are appropriate in scope and topic to the time and resources available.			
Accurately analyzes quantitative and/or qualitative data.			
Argues logically and persuasively, based on presented evidence.			
Assignment Specific Criteria			
	Meets Criteria (+1 POINTS)		Does not Meet Criteria (0 POINTS)
Abstract (NE 102 Example)			
Explains BACE is the beta secretase involved in the formation of Abeta/plaques in AD			
Explains BACE leads to production of C99			
Explains BACE LL/AA accumulates at the plasma membrane (expected result)			
Explains BACE increases C99 production in cells (expected result)			
Explains BACE (mature) accumulates in LL/AA (expected result)			
Includes only necessary details about APP processing			
Explains what alpha secretase is and does			
Explains C83 contains the intact Abeta sequence			

Section #5: SUMMARY of IMPLEMENTATION PLANS and Requested Support: (Based on above discussions, what does the unit plan to implement during the period covered by this plan? *What forms of instructional support does the unit request to help implement proposed changes? What are the expected outcomes of named support? What kinds of assessment support does this unit request to help assess the efficacy of this Writing Plan? What are the expected outcomes of this support?*

PHASE 1: IMPLEMENTATION BEGINS BEFORE MAY 2023

Phase 1 Section 1: Adjustments to existing courses

Incorporate opportunities for reflective writing in NE101

For NE 101, writing for reflection or recall will be incorporated into lectures as understanding checkpoints using tophat. Grading will be based on participation and will serve to inform students of their understanding of the material. Certain examples will be included in the student's cumulative portfolio.

Address the sustained writing project the first week of the semester, before students have labs

Provide an overview of the scaffolded writing project, including the rationale, resources, introduction to Writing Consultants.

Standardize writing assignment sheets and rubrics across the program

Create a standardized rubric format that can be used in all neuroscience program courses. A bank of universal assessment criteria will be generated and there will be flexibility to adapt to course/assignment specifics. Overall science writing objectives will be assigned a level: Approaching Mastery, Attempting Mastery, Needs Improvement.

Revise team/group writing assignments for equity and clarity

As part of revising the assignment sheets and standardizing the assignment rubrics, consideration will be made to how to make group scientific writing more equitable and expectations more clear. This may include assigning drafts as homework to each member of the group prior to dedicated lab time structured for collaborative writing time. In NE 102 specifically, each student drafts each section, then the group collaborates to create the strongest version to submit from those drafts.

Experiment with using Perusall to teach reading comprehension

In NE 102, students will annotate the Pastorino paper using prescribed steps/questions in Perusall. This will serve as a way to instruct students in how to read the paper and become familiar with the sections. Upper-level NE electives may follow a similar model with their assigned reading.

Phase 1 Section II: Changes across the program

Develop a system to conduct periodic assessment of NE writing

After applying the universal rubric format and collecting student writing in cumulative portfolios, the program will perform an initial baseline assessment of Neuroscience writing in Fall 2023

Build a Blackboard site to house common writing resources, including explanation of UPN Scientific Writing Expectations, breakdown of standard rubric, examples of key genres, links to scheduling WCs (accessible to all NE students)

NE will begin to build a large centralized writing resource for all Neuroscience students, which will eventually grow to include science writing Flipped Learning Modules.

Include student writing models on Blackboard Writing in Neuroscience Resource Center (good, better, best)

On a Blackboard site, NE will provide students with good/better/best examples of major genres, but not replicating the exact coursework.

Standardize terminology across the program (ex. “figure legend”)

Achieved with universal scientific writing modules and standardized rubrics?

Generate a standardized section for syllabi about writing approach and resources

Create a standardized blurb to be added to NE course syllabi that directs students to the Writing in NE Blackboard site, introduces the Writing Consultants, and reinforces the rationale for writing in Neuroscience.

Phase 1 Section III: Staffing and Training

Revise the Work Flow and Responsibilities of the NE Writing Consultants

Coordinate with David Shawn to change Writing Consultant scheduling (ex. drop-in study session before major writing deadlines; evening and weekend hours, visit lab or discussion)

At the beginning of each semester, neuroscience course faculty will meet with writing consultants (and David Shawn?) to provide Syllabus (course assignment due dates) and major writing assignment sheets. Examples of previous student’s work representing different levels of mastery will be provided for WC’s reference.

At certain times in the semester, WCs, LAs or faculty teach/review writing topics during the first 15-20 minutes of lab time

This time may include introductions to scaffolded sections of the large writing assignments, targeted writing lessons, or brief interactive workshops.

Coordinate Writing Consultants and Graders to confirm consistent feedback

Writing Consultants and Graders will receive the same materials and information, but they will not work directly together. This separation will retain Grader anonymity.

Foster collaboration between LAs and Writing Consultants as needed

This will occur on Slack.

Develop a system to calibrate graders

NE faculty will review the rubrics with graders and perform a calibration exercise in which each grader assesses student work using the current rubric and then discusses the process and result. Examples of previous student’s work representing different levels of mastery will be provided for

graders' reference.

Phase 1 Section IV: New courses

Develop a 2-credit writing class as part of larger WID project

Co-teach a NE topics course with Writing Program faculty. Neuroscience Communications: NE370 will be taught every Spring semester as an upper-level elective to NE students interested in pursuing science writing careers.

PHASE 2: IMPLEMENTATION BEGINS AFTER MAY 2023

Phase 2 Section I: Adjustments to existing courses

Pursue a transition to NE 218 teaching NIH-style grant application in place of scientific manuscript

NE 218 will plan to transition to a NIH-style grant proposal after Fall 23. This transition will be supported by the new flipped writing modules specifically aimed at grant writing (see below).

Phase 2 Section II: Changes across the program

Make new flipped learning modules specifically for STEM/Neuroscience writing

To cover universal scientific writing skills in a consistent manner across the program, we will create interactive modules on various relevant topics covered in our core courses. Priority will be given to creating modules related to grant writing, as this skillset is needed for Fall courses NE 203 lab and NE 218 lab. Significant support in the form of work study/interns/WCs and LAs, Writing Program faculty/TFs will be required to plan and create these modules. DL&I support will be required to add high production value to content.

Phase 2 Section III: Staffing and Training

Receive training on how to grade writing more efficiently

Plan faculty workshops where we host Writing Program faculty and CTL staff to provide us with specific examples of effective and efficient writing feedback and assessment. Ideas will be incorporated into training of hired graders.

Research how to create a more permanent/stable system for retaining graders

Look into the practices of other programs and departments at BU as well as Neuroscience programs in peer institutions. This change will hopefully address an issue with graders falling behind and returning work late.

In partnership with the Writing Program, explore the possibility of hiring (writing-specific, not necessarily NE) graduate students to teach, TF, or grade writing

Tap into the expertise and experience of former or current Graduate Writing Fellows in the Writing Program.

Begin the process to bring in two PALs to co-teach lab sections and develop labs/courses
Begin the process of securing funding and recruiting of potential teaching postdocs through the PAL program.

Contingent on teaching coverage: faculty exchange between Neuroscience and the Writing Program for additional writing pedagogy training

One NE faculty member teaches a Writing Program course at the level of their choosing, covering introductory-level Neuroscience topics and adapting the assignment sequence to STEM writing. One Writing Program faculty member assists the training of the NE faculty member and engages in targeted assistance to NE enhanced writing instruction.

Phase 2 Section IV: New courses

Create a “Writing in Neuroscience” course similar to Bio “scholarly writing” senior thesis track
Create a course code geared towards students who specifically would like to generate publication worthy scientific writing in the form of a review article or grant proposal under the supervision of specific faculty members. This track will be an option at the individual faculty member’s discretion. Creation of a course code will involve gaining permission from the general education committee in CAS and applying for associated Hub units.

Explore the possibility of creating a teaching lab that can produce new research and publications
Contingent of hiring of PALs, a new independent lab course will be created that will allow students and faculty to generate publication quality research.

PHASE 1: IMPLEMENTATION BEGINS BEFORE MAY 2023

Orange = Adjustments to Existing Courses

Yellow = Changes Across the Program

Green = Staffing and Training

Red = New Courses

Proposed change	Timeline	Resources Needed (ex. instructional or assessment support)	Lead
Incorporate opportunities for reflective writing in NE101	Fall 2022	Writing Program support on best pedagogical strategies for incorporating writing into large lecture courses. Consult on research, examples, etc.	Bushell
Address the sustained writing project the first week of the semester, before students have labs	September 2022	Writing Consultant lab visit for introductions.	Gobrogge Bushell
	January 2023		Tullai Bushell
Standardize writing assignment sheets and rubrics across the program	Summer 2022 NE203 ISE	Time in faculty meetings to collaborate and approve the wording. CTL/DL&I support: Centralized file location with common writing in neuroscience criteria for standardized rubric. Ideas on how to make a universal document/form that can easily be generated into a rubric and implemented in individual courses.	Gobrogge Bushell
	Winter Recess 2022 NE102 ISE		Tullai Bushell
Revise team/group writing assignments for equity and clarity	Summer 2022 NE203 ISE	Support from Ben Keating in the Center for Teaching and Learning	Gobrogge Bushell
	Winter Recess 2022 NE102 ISE		Tullai Bushell
Experiment with	Implement	Promote and explain Perusall in Faculty	Pastorino

using Perusall to teach reading comprehension	2022-23	meetings and encourage faculty to incorporate into NE electives.	Tullai Bushell Gobrogge Muscedere
Develop a system to conduct periodic assessment of NE writing	May 2023	Assessment mini-grant for participating faculty/staff PAL, Writing Program Faculty, Education Graduate Student, etc	Muscedere
Collect student writing in cumulative portfolios for program assessment	Fall 2022 Spring 2023	Potentially support and advice from CTL or DL&I to choose software; time in faculty meeting to agree on what writing to collect and how	Muscedere
Build a Blackboard site to house writing resources, flipped learning modules, etc. (accessible to all NE students)	Fall 2022	CTL or DL&I: consult about best design for the design of the Blackboard site. Support from Writing consultants and Yumi on site maintenance.	Muscedere
Include student writing models on assignment sheets (good, better, best)	Summer 2022 NE203 ISE		Gobrogge Bushell
	Winter Recess 2022 NE102 ISE		Tullai Bushell
Standardize terminology across the program (ex. "figure legend")	Summer 2022	Time in faculty meetings to collaborate and approve the wording.	Muscedere
Add standardized section on syllabi about writing approach and resources	Summer 2022	Time in faculty meetings to collaborate and approve the wording.	Muscedere
Coordinate with David Shawn to change Writing	September 2022	Add meetings with individual faculty including David Shawn and WCs at the beginning of each semester.	Bushell, Gobrogge

Consultant scheduling	January 2023		Tullai
At certain times in the semester, WCs, LAs or faculty teach/review writing topics during the first 15-20 minutes of lab time	September 2022 January 2023	Faculty collaboration with WCs on lessons and organization. Build into the schedules on syllabi.	Bushell, Gobrogge Tullai
Coordinate Writing Consultants and Graders to confirm consistent feedback	September 2022 January 2023		Bushell, Gobrogge Tullai
Foster collaboration between LAs and Writing Consultants as needed	Implement Fall 2022		All
Develop a system to calibrate graders	Summer 2022	Support from CTL and potentially the Writing Program	Gobrogge, Tullai
Develop a 2-credit writing class as part of larger WID project	Implement Spring 2023	Financial and practical support from CTL and CAS Writing Program	Gobrogge

PHASE 2: IMPLEMENTATION BEGINS AFTER MAY 2023

Orange = Adjustments to Existing Courses

Yellow = Changes Across the Program

Green = Staffing and Training

Red = New Courses

Proposed change	Timeline	Resources Needed (ex. instructional or assessment support)	Lead
Pursue a transition to NE 218 teaching NIH-style grant application in place of scientific manuscript	Implement Fall 2023	Blackboard Writing Resources in place, stable lab sequence.	Bushell
Make new flipped learning modules specifically for STEM/Neuroscience writing	Tentative 2023-	Faculty time in conjunction Writing Programs, Writing Consultants, Neuroscience Interns to plan and DL&I support and produce. Mini-grant to compensate faculty/staff involved.	TBD
Receive training on how to grade writing more efficiently	Tentative 2023-24 yr	Funding to reimburse trainers; consultation with Writing Program	TBD
Research how to create a more permanent/stable system for retaining graders	Summer 2022	Institutional support to build a pipeline of local (Boston-based) UPN grads and TFs from other departments.	Muscedere
In partnership with the Writing Program, explore the possibility of hiring (writing-specific, not necessarily NE) graduate students to teach, TF, or grade writing	Tentative 2023-24 yr	Support from Writing Program, funding to pay graduate students, time for interviews and training.	TBD

Begin the process to bring in two PALs to co-teach lab sections and develop labs/courses	Tentative 2023-24 yr	CAS funding for PALs, recruitment of PALs	Muscedere
Contingent on teaching coverage: faculty exchange between Neuroscience and the Writing Program for additional writing pedagogy training	Tentative 2024-25 yr	Sufficient faculty staffing to cover classes for the person who teaches in the Writing Program: potentially one new full-time lecturer/PAL.	Bushell
Create a “Writing in Neuroscience” course similar to Bio “scholarly writing” senior thesis track	Tentative 2023-24 yr	Financial (or equivalent) compensation for faculty that sponsor the theses.	Muscedere
Explore the possibility of creating a teaching lab that can produce new research and publications	Tentative 2023-24 yr	Contingent of hiring of PALs, Lab space and lab supply funding required. Heavy time investment of PAL/faculty to generate publication quality research in the semester time frame.	Muscedere, Gobrogge

Section #6: Process used to create this Writing Plan (*How and to what degree were stakeholders in this unit (faculty members, instructors, affiliates, teaching assistants, undergraduate students, others) engaged in providing, revising, and approving the content of this Writing Plan?*)

The Neuroscience Writing Plan was developed and written over the course of AY 2021/2022 through an intensive collaboration between the Undergraduate Program in Neuroscience and Writing in the Disciplines, with assistance from the Center for Teaching and Learning.

Neuroscience Faculty Team: Mario Muscedere (NE Program Director)
Kristen Bushell (NE Faculty)
Kyle Gobrogge (NE Faculty)
John Tullai (NE Faculty)

Writing in the Disciplines Team: David Shawn (WID Associate Director)
Jessica Kent (WID Consultant)

Center for Teaching and Learning Team: Deb Breen (CTL Director)
Ben Keating (CTL Assistant Director)

These groups coordinated in numerous ways, including but not limited to the following: planning sessions within the WID team; planning/brainstorming sessions with the WID team and CTL team; planning and debriefing meetings with the WID team, Neuroscience Program Director Mario Muscedere, and Associate Dean of Undergraduate Academic Programs and Policies Joe Bizup; and regular meetings with the Neuroscience faculty team and the WID consultant, Jessica Kent (see Appendix A for meeting dates).

At these regular meetings, the Neuroscience Faculty Team, with facilitation from the WID consultant, reviewed their current science writing teaching and assessment practices, identified opportunities for improvement, and chose action items to address each one. This group met biweekly throughout the year, for a total of eighteen meetings. In December 2021, Jessica Kent compiled a Decision Framework Document that included all of the brainstormed changes from fall meetings, along with potential challenges and benefits of each one (see Appendix B). In early Spring 2022, the team voted on which changes to implement and spent the remainder of the Spring semester drafting the Writing Plan.

Each element of this Writing Plan was explored in depth during the various meetings, and Jessica Kent assigned to various teams of writers the responsibility for composing each section. The group then met to revise each section draft collaboratively until they reached consensus.

This group sought input from other stakeholders in a number of ways, including a survey of Neuroscience students currently taking courses with a WIN Hub unit (NE 102, NE 203, NE 116, or NE 218), interviews with current and former Neuroscience Writing Consultants, interviews with affiliated faculty, and interviews with Neuroscience staff. See Appendix C for the findings of the student survey. The students and writing consultants primarily provided insight into their needs and experiences, while the affiliated faculty and staff provided feedback on intermediate drafts of the plan.

Section #7: Briefly describe the ways that the ideas contained in this Undergraduate Writing Plan address the University’s Writing Intensive Learning Outcomes?

BU HUB Learning Objectives

[\(https://www.bu.edu/academics/hub/learning-outcomes/communication/\)](https://www.bu.edu/academics/hub/learning-outcomes/communication/)

WIN courses:

Writing-Intensive Courses enable students to build upon and practice skills learned in the First-Year Writing Seminar and, in some instances, in Writing, Research, and Inquiry courses. Writing is fundamental, the most important form of expression that BU undergraduates must develop. In almost every professional setting, BU graduates must be able to express their ideas in clear, coherent prose. Effective writing demands the honing of skills, but it also cultivates ways of thinking, evaluating evidence, constructing responsible and convincing arguments, and generating creative ideas. As effective writers, BU graduates will pay close attention to the potential readers of their writings; as responsible writers, they will take ownership of their message and the means of communicating it, and hold their writing to high standards of truth, accuracy, validity, and humaneness.

While learning to craft written arguments is essential in the First-Year Writing Seminar, the Writing, Research, and Inquiry courses, and most courses designated as Writing-Intensive, the latter also accommodate students’ learning to write to the standards of majors and professions, such as journalism, that place a premium on the difference between arguments and expository accounts.

WIN Learning Outcomes

Writing-Intensive Courses have the First-Year Writing Seminar as a prerequisite and develop at least learning outcomes 1 and 2 below.

1. Students will be able to craft responsible, considered, and well-structured written arguments, using media and modes of expression appropriate to the situation.
2. Students will be able to read with understanding, engagement, appreciation, and critical judgment.
3. Students will be able to write clearly and coherently in a range of genres and styles, integrating graphic and multimedia elements as appropriate.

Neuroscience Writing Intensive (WIN) Approach

“Visible and Present” Writing Intensive Approach

1. In writing intensive courses, students will complete a 12-15 page written assignment (3600-4500 words).
2. The First Year Writing Seminar is indicated in the course syllabus as a prerequisite.
3. Specific, shorter writing assignments are presented in a schedule at the beginning of the semester, and are scaffolded to build to the finished final document (the major graded paper). Components of the scaffold include, but are not limited to, hypothesis formation, abstract summary, Background to the study with properly annotated citations and corresponding Bibliography, Results and Discussion, Figure Legends, and Materials and Methods to support the document.

4. Students are provided feedback in several different ways. Summative feedback is presented in the form of scoring the scaffolded tasks with explanation as to point deductions. Formative feedback is provided both through discussion with the instructor and via one-on-one or group meetings with the Neuroscience Writing Consultants.

Reading

1. Teaching students how to successfully read Neuroscience literature is implicit in Writing Intensive training. As such, the focus is on reading documents that are particular to the field, and is mentioned in the syllabus.
2. Exercises in reading Neuroscience literature allow for exploration of the various genres of writing and the context(s) in which they are used properly. These include but are not limited to reading scientific reports, understanding the order and purpose of various sections in a document, and interpretation of figures and charts.
3. Regular instruction to assist students in developing reading strategies that help them identify the expectations in their writing assignments.

Written Final Products and Grades

1. The Writing Intensive courses have a major document that is the final product, and written work comprises a significant proportion of the final grade.

Appendix A

Meeting Schedule WID Neuroscience Faculty Consultant 2021-2022

Simpson Gift/Neuroscience Consultancy – Joe Bizup and David Shawn

May 27, 2021

July 15, 2021

Aug 27, 2021

Leadership Meetings: Joe Bizup, Mario Muscedere, Jessica Kent, and David Shawn

Sept 2, 2021 – Joe, Mario, Jessica, David

Dec 17, 2021 – Joe, Mario, Jessica, David

Neuroscience WID Faculty Consultancy - Jessica Kent and David Shawn

July 1, 2021

July 7, 2021

July 16, 2021

July 28, 2021

August 10, 2021

August 26, 2021

August 30, 2021

Sept 21, 2021

Oct 4, 2021

Nov 9, 2021

Dec 15, 2021

Jan. 14, 2022

Feb 2, 2022 – Ben, Jessica, David

Feb 23, 2022

Mar 16, 2022

April 6, 2022

CTL-Neuroscience WID Consultancy Meetings – Deb Breen, Ben Keating, Jessica Kent, David Shawn

Sept 15, 2021

Dec 20 (canceled)

Feb 2, 2022

Neuroscience Faculty Team and WID Consultant - Mario Muscedere, Kristen Bushell, Kyle Gobrogge, John Tullai, Jessica Kent

September 17, 2021

October 1, 2021

October 15, 2021
October 29, 2021
November 12, 2021
December 3, 2021
January 28, 2022
February 11, 2022
February 25, 2022
March 4, 2022
March 25, 2022
April 8, 2022
April 22, 2022
May 6, 2022
May 13, 2022
May 20, 2022
May 27, 2022
June 2, 2022

Appendix B

WID/Neuroscience Initiative

AY 21/22

Consultant: Jessica Kent

Participants: Mario Muscedere, Kristen Bushell, Kyle Gobrogge, and John Tullai

Decision Framework

Purpose:

This document collects and organizes all the curricular ideas that you have generated during the fall semester, listing each along with a set of benefits, drawbacks, and potential challenges. During BU's winter break, please use this document to review the many possibilities for the future of writing in Neuroscience; when we return to meeting in January 2022, you will choose which curricular innovations you want to research further and potentially put in place.

Guidance:

- There is no minimum or maximum number of changes to put in place. Neuroscience can accept and move forward with all of these or just a few; it's completely up to your group.
- You can add new ideas to this list at any time – if you have a brainstorm over winter break, please share it in Slack or over email.
- We may add new ideas once we review feedback from students, writing consultants, etc.
- The timeline for these changes is also up to you. Perhaps there are some things you could accomplish in a year or two, while others will take a 5-year or 10-year plan. We will address those details in the Writing Plan.
- During SP22, we can explore ways to address potential challenges (for example, seeking training or funding). If you think the curricular change would have a large payoff, it is worth doing the research to find out whether it is possible, even if it seems out of reach right now.

Potential Changes to Writing in Neuroscience:

Benefits	Drawbacks	Challenges
Section 1: New Courses or Policies		
A. A dedicated writing course required for the major		
<ul style="list-style-type: none">• Guarantees that all NE students get the same basics in writing• Align required courses with the major's learning goals	<ul style="list-style-type: none">• Adding another 4-credit class would be unfeasible for pre-meds and potentially others	<ul style="list-style-type: none">• Major currently has 17 required classes; probably would have to drop one
B. Develop a 2-credit or 4-credit writing class as part of a larger WID project (co-design and team-teach with WP faculty, then adopt the course under NE with NE instructor)		
<ul style="list-style-type: none">• Co-designing/		<ul style="list-style-type: none">• NE teaching effort would probably have to be overbase

<p>teaching with WP would help NE faculty, who don't have expertise in teaching writing</p> <ul style="list-style-type: none"> • The CM Biology PhD program has a 2 cr. class in grant writing – could envision something that puts them through the basics of hypothesis writing, grant formats, manuscript formats • Partnered WP faculty member could develop lots of teaching materials and lessons based on what they already do, which can stay with the class when you teach it in the future and could be resources for other WIN courses • There's some compensation for the summer work of developing the course 		
<p>C. No-credit course to help students navigate the Senior Thesis application process and know what to expect</p>		
<ul style="list-style-type: none"> • Biology undergrads have this. It is a required Honors class that meets during the spring semester of their senior year and basically teaches how to write and present their senior thesis. Great practice. Would not have to meet every week. 		<ul style="list-style-type: none"> • Would need faculty available to teach this.
<p>D. Develop a co-curricular course on STEM writing (Hub units but no credits)</p>		
	<ul style="list-style-type: none"> • The Hub units for a Neuro student would not really be in high demand (they will already get all their writing intensive and other elsewhere) 	
<p>E. Develop a new "Reading in Neuroscience" course similar to the Bio "scholarly writing" senior thesis track</p>		
<ul style="list-style-type: none"> • We really should have "Readings in Neuroscience" courses like 		<ul style="list-style-type: none"> • Development takes time and funding • Who is available to teach it?

<p>the x71/x72 track in BI, to give students more options</p> <ul style="list-style-type: none"> ● Some students are already seeking this out with John or Lucia ● It would be straightforward to turn this into an official class ● Great way to have low-stakes practice in reading and expand knowledge of a topic ● Would be great to serve a certain population of students 		<ul style="list-style-type: none"> ● Faculty offering this would need more graders
<p>F. Hire more graders</p>		
<ul style="list-style-type: none"> ● Graders are a necessary part of the current structure of the program, and when faculty have to pick up grading slack it adds labor without additional compensation ● Graders help allows faculty to improve and grow the program, innovate in labs, etc. 	<ul style="list-style-type: none"> ● Can be inconsistency in grading because of grader turnover or lack of training ● Graders tend not to be highly qualified to provide feedback on writing assignments 	<ul style="list-style-type: none"> ● Need additional funding lines
<p>G. Develop a more permanent system for graders (ex. part-time lecturers)</p>		
<ul style="list-style-type: none"> ● Streamlined approach for student assessment ● Adds continuity and consistency ● Provides financial opportunities for part-time faculty 		<ul style="list-style-type: none"> ● Might have to pay more
<p>H. Collect student writing in cumulative portfolios for program assessment</p>		
<ul style="list-style-type: none"> ● Single repository for evaluation and assessment ● Writing program has experts on portfolio assessment that could come in the spring or provide training down the road, and there are already a lot of resources on the WP Teaching Writing website already 	<ul style="list-style-type: none"> ● Making portfolios takes instructional time away from other things, and students sometimes feel it is a pain 	<ul style="list-style-type: none"> ● Have to choose which portfolio program to use and how to collect them, etc.

<ul style="list-style-type: none"> ● Students benefit as they see their portfolio grow ● Provides students a resource to use when applying for jobs, internships, graduate/medical school, etc. 		
I. Writing Program Lecturers hired to conduct periodic quantitative assessment of NE writing		
<ul style="list-style-type: none"> ● WP faculty are often eager for opportunities to supplement their pay, and many would want to do this ● WP faculty are experts in writing assessment ● Frees up NE faculty for field-specific innovation and assessment 	<ul style="list-style-type: none"> ● May not need writing-specific program assessment regularly – is this a need we have to address? 	<ul style="list-style-type: none"> ● Would have to find funding for this
J. Faculty exchange between NE and WP		
<ul style="list-style-type: none"> ● Benefit to WP: WP faculty need to understand how STEM writers will write in their major courses and field and working with NE faculty would be eye-opening. WP could do a better job of preparing students for NE writing ● Benefit for NE: WP faculty member could do a lot of the legwork to make these new initiatives happen (like creating teaching materials, Flipped Learning Modules, training materials, etc.) and could model teaching of writing in a STEM-specific context 		<ul style="list-style-type: none"> ● Covering all the NE courses ● NE only has 5 lecturers. It doesn't seem feasible to lose someone and keep up our much-needed course offerings (could be fixed by other suggestions: BI/PS Research for Credit courses could take more of the workload?) ● WP faculty can't teach NE courses!
K. Create a teaching lab that can produce new research and publications		
<ul style="list-style-type: none"> ● Provide a mechanism for continued scholarship for teaching faculty ● Great for faculty and students. ● Would offer students more opportunities for authentic research. ● Good for program prestige 		<ul style="list-style-type: none"> ● Developing and delivering such a high-quality course(s) will take more time and effort from course faculty/staff ● Finding to get this up and running, budget to keep it running ● May necessitate more faculty members

<ul style="list-style-type: none"> ● Would be ideal to have a “vanguard lab” section trying out techniques for future application in the bigger lab courses. ● Amazing enrichment for students to brainstorm an idea into a lab sequence 		
L. Add more electives with Hub communication units from Bio, Psych, etc. to help students gain writing experience beyond their sophomore year		
<ul style="list-style-type: none"> ● Gives students opportunities to write during their NE major requirements ● Does not require additional labor from NE faculty 		<ul style="list-style-type: none"> ● Do these courses exist?
M. Receive training on how to grade writing more efficiently		
<ul style="list-style-type: none"> ● All benefit – makes writing instructional possible and sustainable for faculty ● There is high demand for this 		<ul style="list-style-type: none"> ● Who would provide the training? ● How will we fund this training?
N. Use contract grading in some or all courses		
<ul style="list-style-type: none"> ● Faculty curiosity around this idea and willingness to learn more ● Faster than traditional grading ● Easier to prioritize what lessons are needed since assignment requirements are so clear ● Benefits students with mental health problems and other challenges – can be a more equitable form of assessment ● Could use a labor-based approach to build “extra credit” into the system, so students that do more work get higher grades ● Lots of Writing Program expertise and experience to draw from 	<ul style="list-style-type: none"> ● May not be able to address the “good/better/best” aspect of scientific writing 	<ul style="list-style-type: none"> ● What to do when a student misses a whole lab? Would/should there be a way for them to make up that labor?
O. Hire one or more additional full-time lecturers		
<ul style="list-style-type: none"> ● Creates “breathing room” that would allow for a WP 		<ul style="list-style-type: none"> ● How to get funding for the new position

<p>faculty swap and many of these other ideas</p> <ul style="list-style-type: none"> • More flexibility in offering new courses and content • Could hire someone with a STEM writing background • This initiative provides a good moment to explain why a new full-timer is needed 		<ul style="list-style-type: none"> • OK from CAS admin is probably unlikely in the short term
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P. Hire graduate students to teach or TF

<ul style="list-style-type: none"> • Another way to create “breathing room” • For TFs or graders specifically focused on the writing aspects of courses, could widen the pool beyond STEM PhDs and look to the Writing Program for former Graduate Writing Fellows who are looking for funding 	<ul style="list-style-type: none"> • Can be hit or miss in terms of keeping good control of institutional knowledge • Science isn’t always fool proof – may be difficult for endless cycle of TFs with no continuity 	<ul style="list-style-type: none"> • STEM TFs are in very short supply in CAS right now
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Q. Bring in two PALs to co-teach lab sections and develop labs/courses

<ul style="list-style-type: none"> • Would create “breathing room” for these other innovations, plus may directly benefit course development • There is already a model for this in bio that we could adapt and improve for NE – Mario has already coordinated this • PALs will want teaching experience and will be motivated to teach well • PALs could spend first year teaching and the second year improving or innovating labs or courses 	<ul style="list-style-type: none"> • Again, may be a challenge to institutional knowledge since PALs only stay two years 	<ul style="list-style-type: none"> • Getting approval for two PALs specific to NE
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Benefits	Drawbacks	Challenges
Section 2: Adjusting current courses		

A. Incorporate writing in NE 101		
<ul style="list-style-type: none"> ● Could be a useful introduction for students who will go on to take more NE classes 	<ul style="list-style-type: none"> ● NE 101 is a survey course that includes non-majors; not all students in the course need the same writing skills 	<ul style="list-style-type: none"> ● Additional grading labor
B. Incorporate opportunities for non-graded reflective writing in NE 101 or NE 102 to help recruit/retain minority students		
<ul style="list-style-type: none"> ● Don't have to spend more time grading ● Opportunity for minority students to feel that they can bring their whole selves into class and belong in the sciences ● Aids retention 	<ul style="list-style-type: none"> ● Takes class time (though could be as short as 5-10 minutes) 	<ul style="list-style-type: none"> ● Developing/collecting brief activities and prompts
C. NE 203 students visit the science library to learn about resources and RefWorks		
<ul style="list-style-type: none"> ● If done remotely, could be well-attended by students ● Could be extra-credit or incorporated into a grading contract as labor to help to get an A-range grade ● Mainly the idea would be to let students know about the science library as a resource and to learn how to use RefWorks and the BU library database (all could be taught remotely) 	<ul style="list-style-type: none"> ● With limited time, this may not be the best option to take up class time; might be better spent using writing consultants in the classroom ● Not a high priority change 	
D. NE 218 teaches NIH-style grant application in place of research essay		
<ul style="list-style-type: none"> ● Would be an opportunity to use the same writing assignments and rubrics across NE203 and NE218, standardizing the curriculum across almost all majors 	<ul style="list-style-type: none"> ● Bio students in the class may not have had any experience writing a science manuscript and would miss that opportunity 	<ul style="list-style-type: none"> ● Would need a redesign of the course – could CTL fund that?
E. Revise team/group writing assignments for equity and clarity		
<ul style="list-style-type: none"> ● Can build on the “rebuttal letter” format that incentivizes students to revise 		<ul style="list-style-type: none"> ● This would be a labor-intensive revision and would call for some research and training

<ul style="list-style-type: none"> ● Addresses equity issues (an issue in any group writing) ● Adds clarity for students, reduces stress of group dynamic 		
F. Standardize terminology across the program (ex. “figure legend”)		
<ul style="list-style-type: none"> ● Would simplify things for students ● Would address the terminology confusion that students have reported ● Would likely be a small change since most of the terminology is already shared 	<ul style="list-style-type: none"> ● If their other classes (Bio, Chem, Psych) use different terms, may lead to confusion 	<ul style="list-style-type: none"> ● Transition as folks shift away from the language they habitually use toward the departmental language – may take some getting used to
G. Standardize writing assignments and rubrics across the program		
<ul style="list-style-type: none"> ● Ease student transition from 100-level to 200-level lab class ● Easier for faculty ● Improve quality of grading with well-considered rubrics ● Easier to train new instructors ● Transparency for the students ● Since we’re also working toward more grader retention, would help returning graders 	<ul style="list-style-type: none"> ● This is difficult to employ when lab groups may be at different stages of projects and inevitably have not made the same progress – a problem for the graders 	
H. Add standardized section(s) on syllabi about writing approach and resources		
<ul style="list-style-type: none"> ● Students will see a uniformity that suggests writing is important to the program ● Students have access to information on how to schedule a writing consultant etc. ● Could consider a version of this on a website or on a Spark page – a stable resource for students 	<ul style="list-style-type: none"> ● Longer, less accessible syllabus ● Students don’t read the syllabus 	

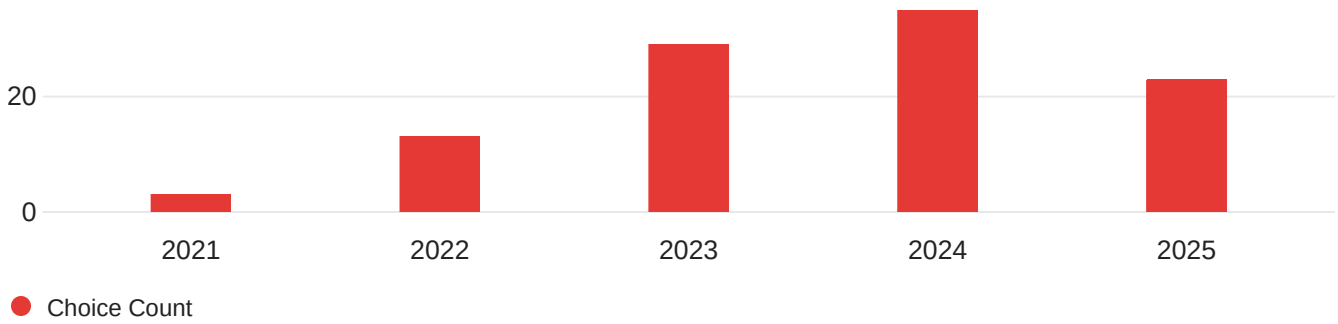
Benefits	Drawbacks	Challenges
Section 3: Writing Instruction Approaches		
A. Use (already made) Writing Program Flipped Learning Modules to supplement discussion		
<ul style="list-style-type: none"> ● Already have a model for how this works, since NE does it for lab materials and a weekly quiz ● Resource already exists! 	<ul style="list-style-type: none"> ● Does not address science-specific writing needs ● Some of the learning modules are a bit dry – will they engage students? 	
B. Make new Flipped Learning Modules specifically for STEM/Neuroscience writing		
<ul style="list-style-type: none"> ● Provide standardized instruction on important topics ● Can mix and match modules for each specific course ● Reusable after the initial effort of creating them ● Does not increase instructor workload ● Gives students the ability to learn from a familiar face 	<ul style="list-style-type: none"> ● Again, students don't always love flipped learning modules, especially if long (we should keep them under 10 minutes) 	<ul style="list-style-type: none"> ● Would want funding for this time and effort ● Must incentivize students to watch them – current Blackboard tracking shows that less than 10% of students view workshop video resources ● Need to have assignments based on modules for accountability
C. In Research & Information Literacy Hubbed courses, give students the opportunity to find peer reviewed literature on their own		
<ul style="list-style-type: none"> ● May lead to more student buy-in ● This is a skill students will need if they go into research 	<ul style="list-style-type: none"> ● Guiding students through this process would take class/instructor time 	<ul style="list-style-type: none"> ● The course topic can start to wander as students bring in sources
D. NE Writing Consultants give lessons or conduct workshops via Zoom, which can be recorded and archived		
<ul style="list-style-type: none"> ● NE already has a model for how this could work: learning assistants have done remote workshops on digital assembly of figures and figure legends 		<ul style="list-style-type: none"> ● Quality of instruction would depend on the strength of the particular writing consultants you have at the time ● Consultants would need to buy into this ● Would need the budget to pay consultants for this work, on top of their tutoring
E. NE Writing Consultants visit Discussion sections to lead an activity or give a live lesson		
<ul style="list-style-type: none"> ● This could happen in NE 203 at the start of every session during the latter 	<ul style="list-style-type: none"> ● Will not work for NE 102 because it does not 	<ul style="list-style-type: none"> ● Quality of instruction would depend on the strength of the

<p>part of the semester (the independent research), during the time that was previously an intro “recap” from LAs</p>	<p>have time scheduled for discussions</p>	<p>particular writing consultants you have at the time</p> <ul style="list-style-type: none"> ● Consultants would need to buy into this ● Would need the budget to pay consultants for this work, on top of their tutoring
<p>F. Have a “writing bootcamp” the first week, before students have labs</p>		
<ul style="list-style-type: none"> ● Would be a good time to introduce the writing assignment (the big picture) 	<ul style="list-style-type: none"> ● Students can only retain so much, so if you introduce too much content all at once it may not be effective 	<ul style="list-style-type: none"> ● What would be most important to emphasize at the beginning of the semester versus throughout the rest of the semester ● NE 116 already has a packed schedule during the first week (safety and syllabus), so would be a challenge ● Students may not show up the first week, may still be adding and dropping
<p>G. Use calibrated Peer Review Software to allow students to provide each other formative feedback</p>		
<ul style="list-style-type: none"> ● Reduces grading time ● Builds skills for students – critical reading, feedback, revision, reflection 	<ul style="list-style-type: none"> ● Puts a little bit of trust in the students to provide good feedback to one another 	<ul style="list-style-type: none"> ● Need training on Perusall ● Would need to work into the syllabus
<p>H. Include student writing models on assignment sheets (good, better, best)</p>		
<ul style="list-style-type: none"> ● Students have responded well to models/examples in the past ● Easy to implement – NE has a number of years’ worth of assignments to choose from ● Student-generated model writing will be more “approachable” for the new student ● After the initial labor of choosing models, resource will be available to use over and over 	<ul style="list-style-type: none"> ● Three models may be too much for students? Maybe include only two models per assignment so students can see the difference? 	<ul style="list-style-type: none"> ● Time consuming to find the examples

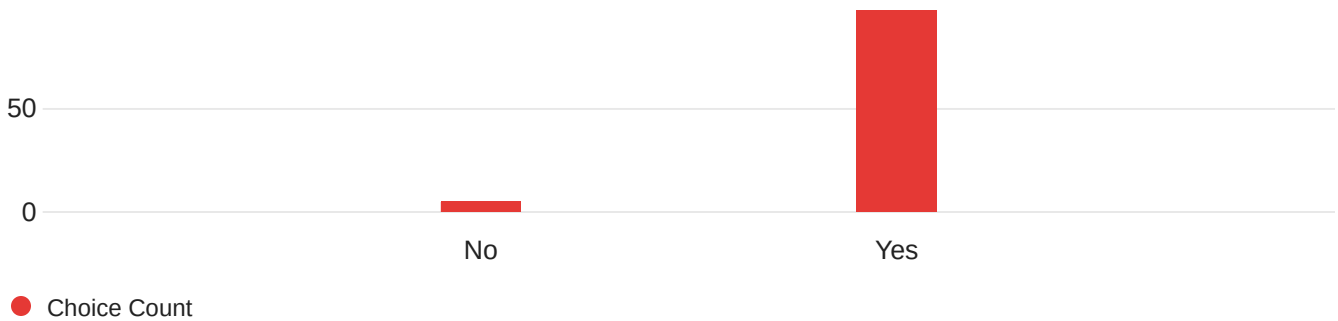
Appendix C

Fall 2021 Neuroscience Student Survey Results (attached; 61 pages)

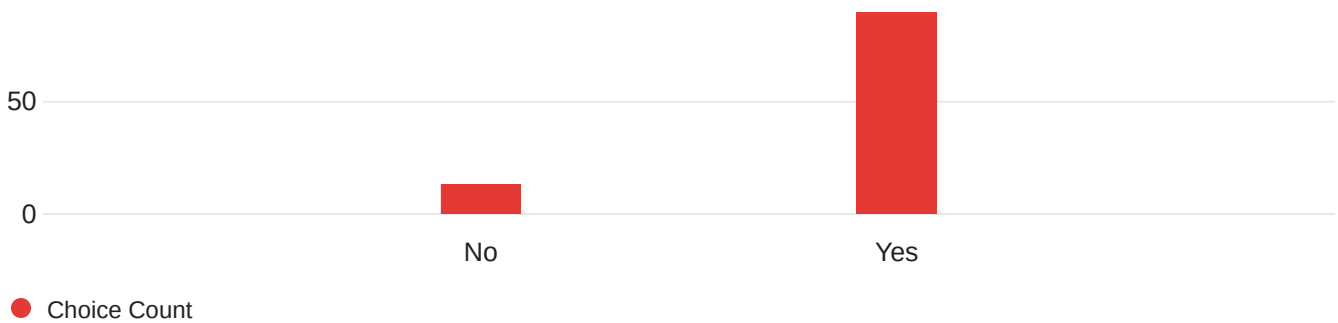
Q1 - What is your class year?



Q2 - Have you declared your major(s) yet?



Q3 - Are you now, or do you plan to be, a Neuroscience major?



Q4 - Please list all your other majors and minors (declared or intended)

Please list all your other majors and minors (declared or intended)

economics

visual art

minor in film and television

Behavioural Biology

minor in linguistics or spanish

Computer Science

visual arts minor

Music

Music

Public Health

Human physiology

Violin Performance Minor

Neuroscience and Philosophy Joint

Bio CMG major, Computer Science minor

Econ major, poli sci minor

Philosophy

Music Minor

Double major in psychology and philosophy

Minor: Physics

Psychology

Neuroscience Major, Human Physiology Minor

Cellular, Molecular Biology & Genetic (CMG)

Philosophy

Psychology

Economics

Philosophy- Minor

neurobiology

minor in spanish

Minoring in Business Administration and Management

Minor computer science

Psychology

Psychology

Public Health

Minor Computer Science

Cell/Molecular Biology and Genetics

CMG

Neuroscience major, Vocal Performance minor

Linguistics minor

Minor in Japanese Language & Literature

Computer Science Minor

Psychology minor

Psychology

Neuroscience, Psychology, Music

English

Biology with a Specialization in Neurobiology

Biology

N/A

Psychology Minor

Psychology

Neuroscience major, Biology minor.

minor in classical civilizations

CS

Bio CMG, Philosophy

computer science major

Computer Science Major, Math Minor

Psychology

Majors: Psychology and Neuro; Minor: Deaf studies

Psychology, Philosophy

Psychology

Psychology

N/a

Human Physiology

Neuroscience and Philosophy Major with Chemistry Minor

psychology

Psychology

Biology with a Specialization in Neurobiology

Neuroscience Major

psychology major, chemistry minor

Neuroscience

Psychology

Political Science minor

Minor in Visual Arts

Psychology

VA

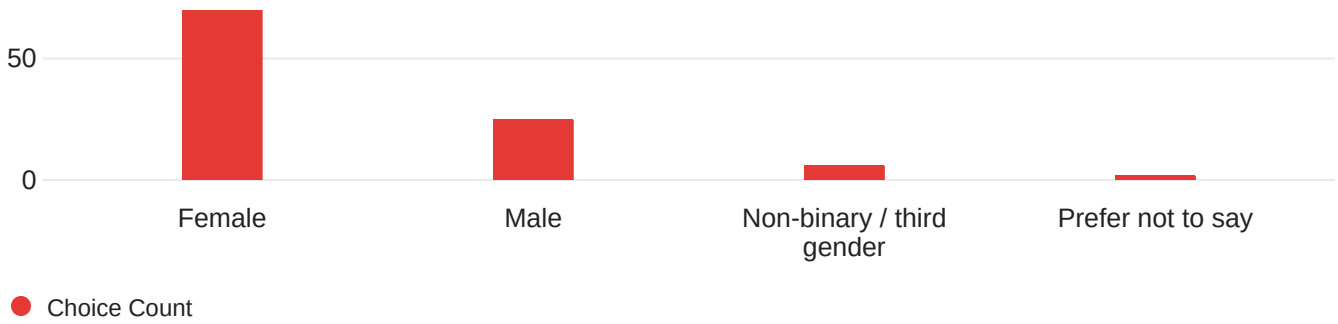
comp sci mior, health sciences minor

Biology (CMG)

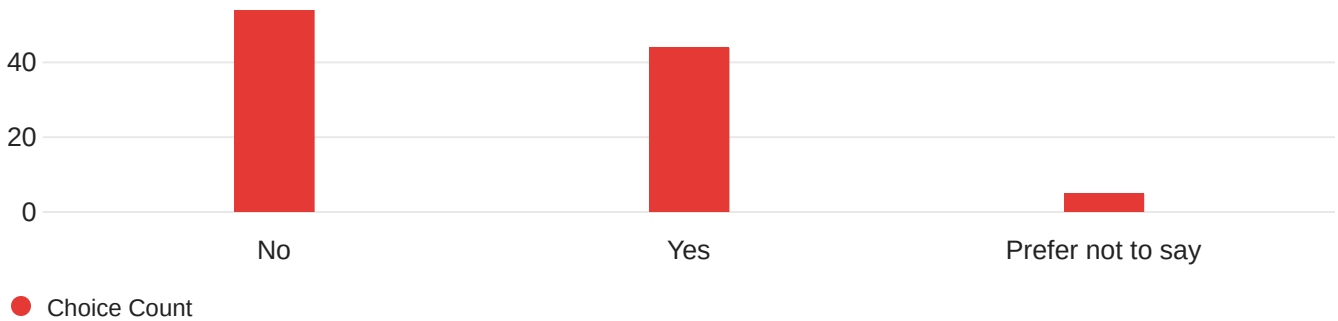
Business Minor if time allows

history minor

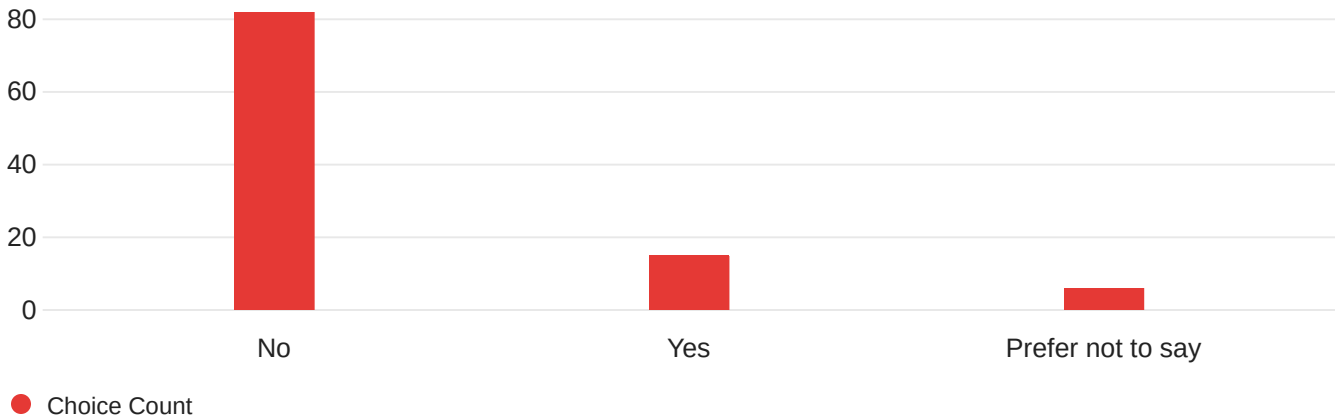
Q5 - What is your gender?



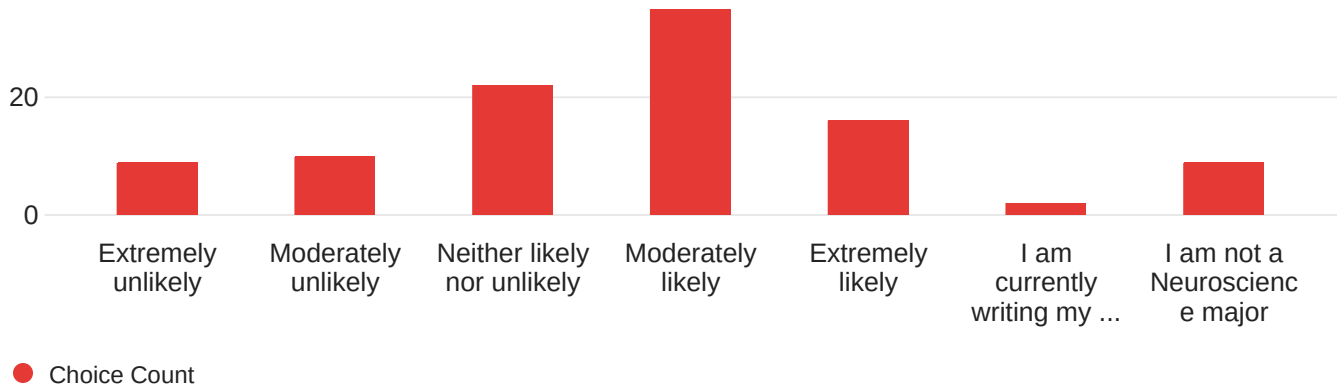
Q6 - Are you a member of a racial minority?



Q7 - According to BU’s Office of Disability and Access Services, “a student with a disability is one who has a physical or mental impairment that has a significant impact on one or more of their major life activities (seeing, thinking, concentrating, hearing, communicating, reading, etc.)” According to this definition, do you identify as a person with a disability?



Q8 - If you are a Neuroscience major, how likely are you to complete a senior thesis?



Q9 - What type of career do you plan to pursue after you graduate from BU?

What type of career do you plan to pursue after you graduate from BU?

go to med school and pursue something in the medical field.

Research or Medicine

no idea

not sure

pediatric neurologist

Medical career

Research

Career in neurotech

scientific research

Pharmaceutical reaearch

Research

medicine

Med school

Medicine- Ophthalmology

I want to go to either med or dental school.

Doctor

Surgeon

Doctor

Medicine

Law, Medicine, or Running Coffee Shops

Medicine

Athlete

Neurology and emergency medicine

Medical

Phd Student

Research in Neuroscience and Behavior

Not sure - probably a psychologist

Research/grad school

Doctor

Med school then becoming a Neuropathologist

Graduate degree

Teaching and Research

Phd in neuroscience + md in psychiatry

Research and Physician

Medical Profession

Not sure

Research

medical-maybe PA or doctor

Psychiatrist

Business side of healthcare

I do not know

Lab-based

Research career

Physician

Medicine/research

physician

medical professional

Medicine

Investment

Medical School

Medical School

Medical School

Researcher

unknown as of yet

Researcher or Doctor

Research

Medicine

medicine

research

Med

Neuropsychologist

Medicine

Consultant

Neurosurgeon

Clinical psychology or MD in Psychiatry

Medicine

Medicine

Principal Investigator

Pre-Physician Assistant

law

Research (computational neuroscience)

Doctor

Something in research

brain computer interface

Graduate School

I want to pursue a PhD and go into academic research

Grad school

Ph.D.

physician/doctor

Forensic psychiatry

I don't know

Medicine

Neurosurgeon

Research - I am not sure.

medicine

Psychiatry

Neurobiology research or med school

Neuropsychology Lab Researcher

PhD in neuro, work in labs and have my own one day

Medicine

Mental health research

Healthcare

Clinical Psychologist

Continue to a PhD

not sure

medicine, dental or public health

Med school, grad school, or consulting.

Research

anything that will help me pay off my debt

Career in Medicine

Medicine

Med school

Medical

Q10 - What are the strongest elements of BU's Neuroscience Program writing instruction?

What are the strongest elements of BU's Neuroscience Program writing instruction?

n/a

N/A

n/a

I don't know

not sure

They are useful to improve scientific writing

N/A

Havent taken a class related to this

I haven't taken a writing intensive course yet

N/A

N/A

n/a

N/a

I've never taken the neuroscience writing instruction.

I'm not sure because I haven't taken one.

Haven't taken yet

n/a

N/A

Not involved with it

N/a

Instructors were helpful in guiding us through the process

NA

I have not taken any writing intensive neuroscience courses.

Professors

n/a

N/A

N/A

N/A

faculty; size

N/A

The one on one consultation is very helpful in determining weakness of our writing, and can improve faster.

I feel like the NE203 class prepared me very well to write a UROP proposal

Help with the assignments

The return feedback is helpful and in detailed

The organization, resources, and prior experience is all extremely helpful for students

Availability

Very easy to communicate with

Having one on one help from students who have taken the course and know what they're doing

N/A

They prepare you well for research reports in the future.

I can write a lab report and appreciate the difficulty of published research

Helpfulness

Experience/practice

Clear wording

None

zoom availability

I only experienced through ISE2, I think having this support available is great

Writing consultants

Student advisors who took the course and give clear assistance on writing

N/A

The writing help available

Clear and understandable

They prepare you for writing and researching for your personal grants or theses

detailed guidelines

Making us learn by doing

It helps analyze and improve our writing in a professional sense. Having people who understand how a piece of writing should look and has experience in writing is very helpful.

Outline expectations pretty well

generation of interest in subject matter

models real life papers

Lab explanation

Writing tutors are easily available and provide clear feedback.

The extra resources available to students are very helpful. Further, the instruction we receive in the classroom is effective and informative.

Effective writing skills

You really learn how to write very well.

Probably the lab

Very thorough and high quality feedback

Provides helpful feedback for what they expect from the writing assignments we turn in. Another strong element is their availability

The ability to meet one on one or with individual groups rather than it be a large classroom setting. I like that it's more personal and you have the ability to ask questions both about writing and general guidance for the course of your experiment

The program has tutors who are very enthusiastic about helping our writing and always provide detailed feedbacks.

knowledge on the subject at hand, thoroughness in grading

I think it really helped that they were able to give quite a bit of constructive criticism since they already went through this lab process

They help you write a concise scientific paper

N/A

Good instructors

The TAs that are there to help with writing

the flexibility along with the specificity of what we need to change in our writing

Giving us previous examples from other students or actual PhD writings.

The research mentors that advise Senior Thesis students and the instructors of the NE 102/203 performing the same role (even though more generally)

helpful feedbacks in a short amount of time

Adjusting assignments when there is little to go off of. Also, setting us on the right track/ giving ideas for research

Writing consultants

Deadlines are clear, writing consultants are helpful

The ERC and feedback from instructors on assignments

There is a lot of availability.

availability

Prompt feedback and availability

Guiding us through the process by having us complete each section week by week

Since the writing instructors are very knowledgeable in everything Neuroscience and some have even taken NE203 before, they give very valuable advice for everything from brainstorming ideas to what a health relevance statement even is

The program helped me organize my thoughts when writing scientific papers, as well as backing up my own hypotheses and experiments with data and research.

Professor instruction and availability of writing consultants

Their ability to understand the topic and to help bounce ideas off of in order to form a cohesive paper

The strongest elements include the available writing help and that there are consistent assignments that build off of each other.

I think it is really helpful for someone to be able to read over their papers and projects. The tips that are given are always really helpful!

Not sure

friendly and eager to help

They explain what to fix and why very well

The writing is staggered out over a few weeks.

the wiliness to help

its availability

Workshops and examples of the assignments

Accessibility to resources

Na

Clear instructions

Q11 - How could BU's Neuroscience Program improve their writing instruction?

How could BU's Neuroscience Program improve their writing instruction?

I don't know

N/A

n/a

I don't know

not sure

With more scientific articles

N/A

N/A

I haven't taken a writing intensive course yet

N/A

N/A

n/a

N/a

I've never taken the neuroscience writing instruction.

I'm not sure because I haven't taken one.

Haven't taken yet

n/a

N/A

Not involved with it

N/a

More opportunity for peer review

NA

I have not taken any writing intensive neuroscience courses.

Practice

n/a

N/A

N/A

N/A

n/a

N/A

N/A

The assignments were many times unclear so I would appreciate more guidance on the assignments and the specific details that are expected. Formatting guidelines were often missing and I often had to ask extra questions to find out the formatting requirements.

More availability

May have more tutors.

I think they are very good already!

Nothing

More variability with students

I'm not sure if there are appointments with professors but that could be a good addition to the program

N/A

It can be overwhelming. Some weeks there was barely anything to write and then the next week there would be a lot. Not a good balance

more outreach and easier drop in hours etc

Promoting

More introductory guidance. We were just told to write each portion with no guidance. The examples were not helpful as they were not parallel to our experiments

N/A

Actually teaching us instead of making us figure it all own on our own

send out emails or some sort of notification about what specific services they offer/what assignments they could help on.

not sure

NA

Give clearer details for what's needed

More detailed feedback in grading

More examples of good writing

Not a lot of guidance

Be quicker with their grading/feedback, either that or space out deadlines so that they are able to get grades/feedback back faster.

more student examples in writing

Give more examples and give a more detailed outline for what and how things should be written

More appointments if possible

More examples and workshops available to students

better instruction on how to create figures.

more instruction

Haven't run into any issues

Having to submit the file before the appointment, but I hadn't written the paper yet and all the appointments filled up.

By providing more instruction regarding how to break down assignments on a group basis.

Not sure

Maybe make more suggestions? Not punish us on shortcoming the first time but the second time.

Include maybe one paper for lecture

make more appts available we all have busy schedules and it's difficult to find a slot that works for all of us

Maybe some more communication between the teachers and the writing instructors who grade them. Sometimes they are not given updated information about assignments

n/a

I wish there could be more times available :)

N/A

I think it would be helpful for more available time slots

They could show examples

Overall availability; it was difficult to make appointments when needed due to a lack of time slots.

Nothing i can think of

I would appreciate more chances to practice the formal scientific writing style

honestly nothing that I can think of

I think instead of just sharing previous examples, the introductory classes (like 203 and 102) should be taught how to write like a neuroscientist since most freshmen and sophomores don't have that experience. We need more than just examples!

Create a component, ideally through NE 102/203 coursework, which would explicitly discuss what makes a good scientific article and how to apply these elements in student's own writing

maybe make more time slots available

More slots!

Give more direction in class regarding how to do writing assignments

Being a little more clear about the expectations and grading.

possibly have more examples of what good neuroscience writing looks like.

NA

more space

Our appointment was moved to zoom 15 min before the meeting so just more communication

More specific and prompt feedback regarding the pieces of the grant proposal we turn in weekly.

N/A

Explaining good and bad sources, teaching scientific citations

implementation of workshops, etc. to help students improve writing skills

N/A

More feedback on writing.

I think it needs to be advertised more

Not sure

probably availability

n/a

Include more info about the final paper and presentation earlier.

more appointments

maybe it it had a center where people could go rather than an appointment schedule

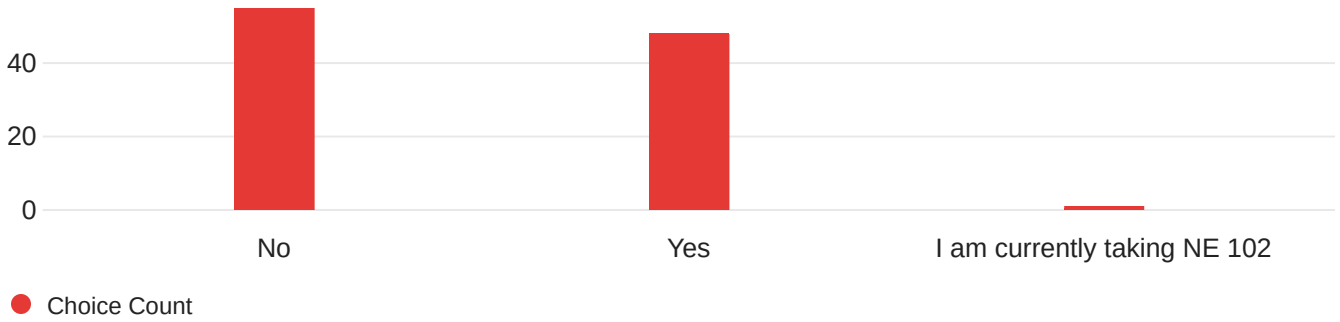
Not sure

N/A

Na

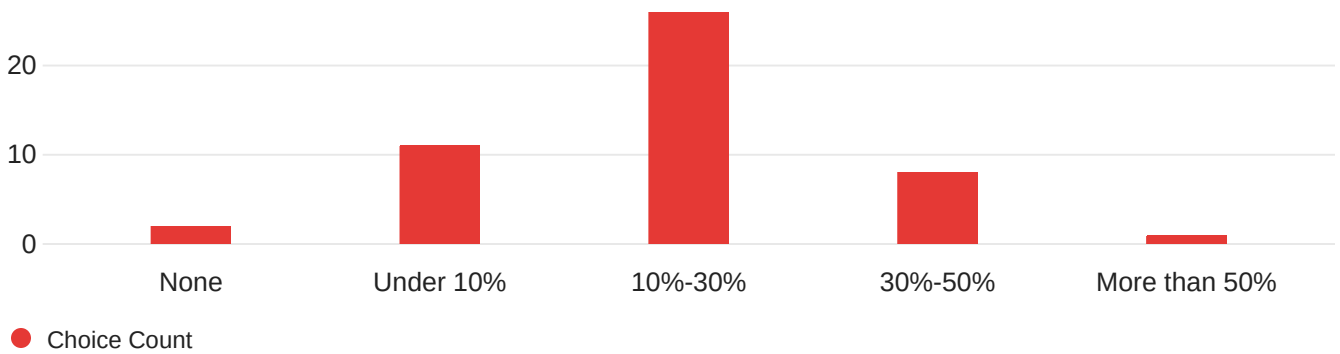
More time slots

Q92 - Have you taken NE 102?

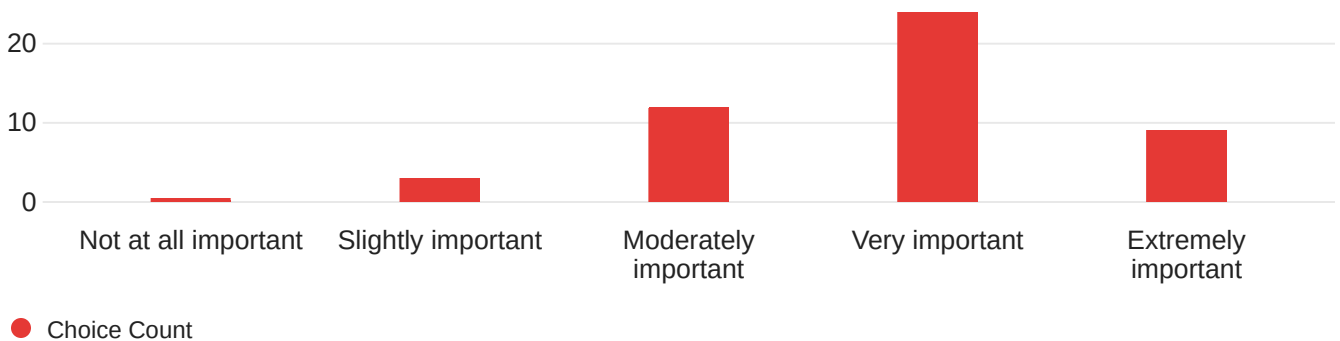


Q18 - In NE 102, how much instructional time (including lecture, lab, discussions, or online engagement) was dedicated to writing instruction?

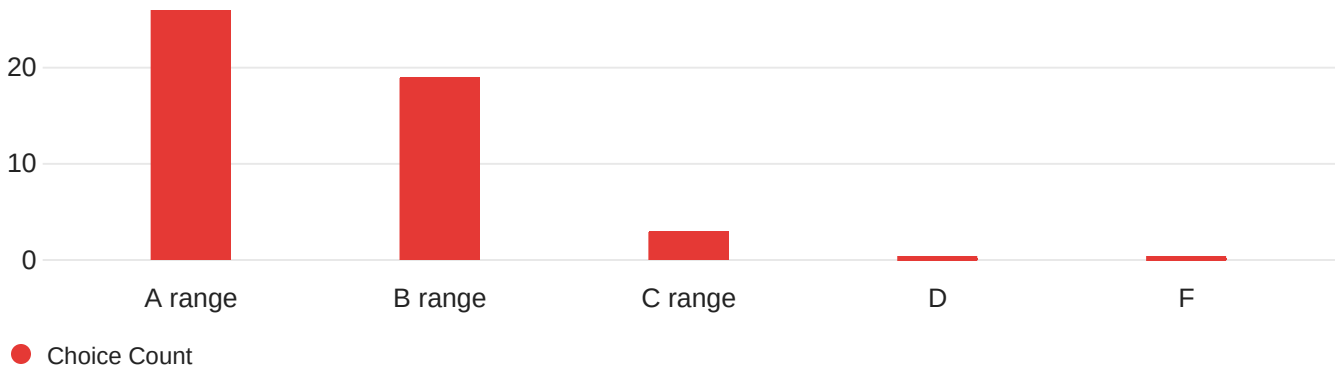
48 Responses



Q17 - In NE 102, how important did you perceive writing was to your final grade?



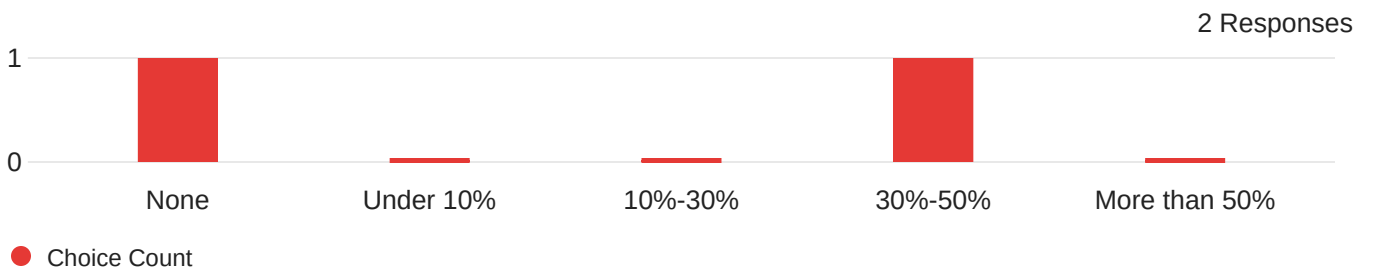
Q16 - What grade did you receive in NE 102?



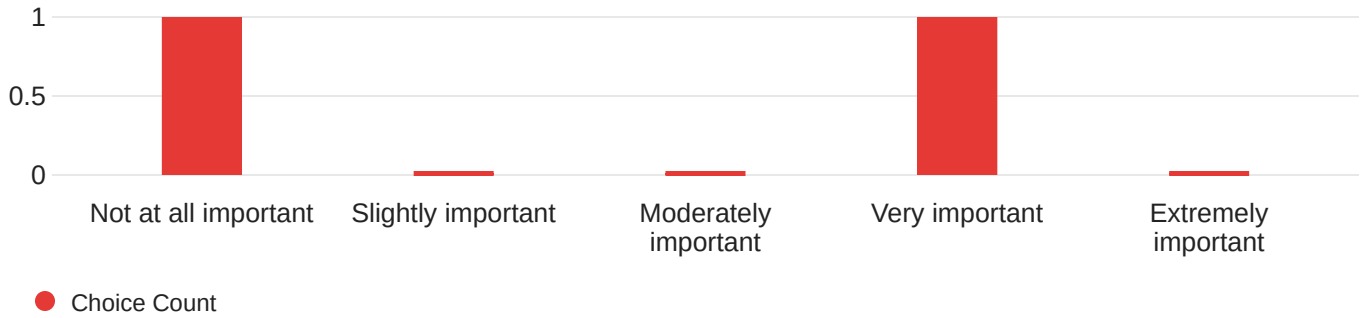
Q93 - Have you completed NE/BI 116 (Integrated Science Experience I)?



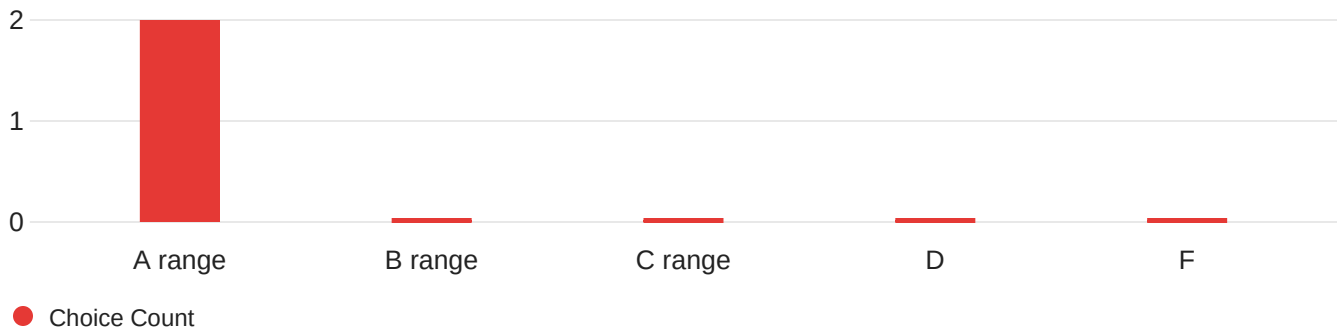
Q25 - In NE/BI 116, how much instructional time (including lecture, lab, discussions, or online engagement) was dedicated to writing instruction?



Q24 - In NE/BI 116, how important did you perceive writing was to your final grade?



Q23 - What grade did you receive in NE/BI 116?

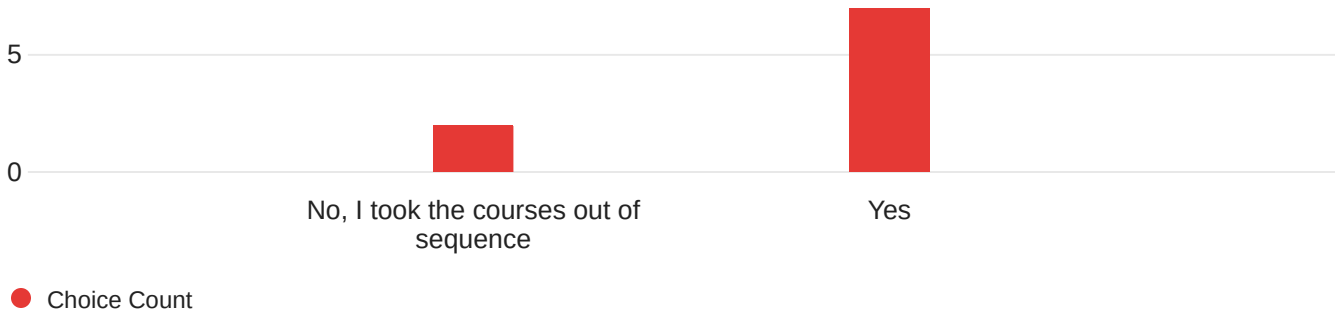


Q94 - Have you completed NE 203?

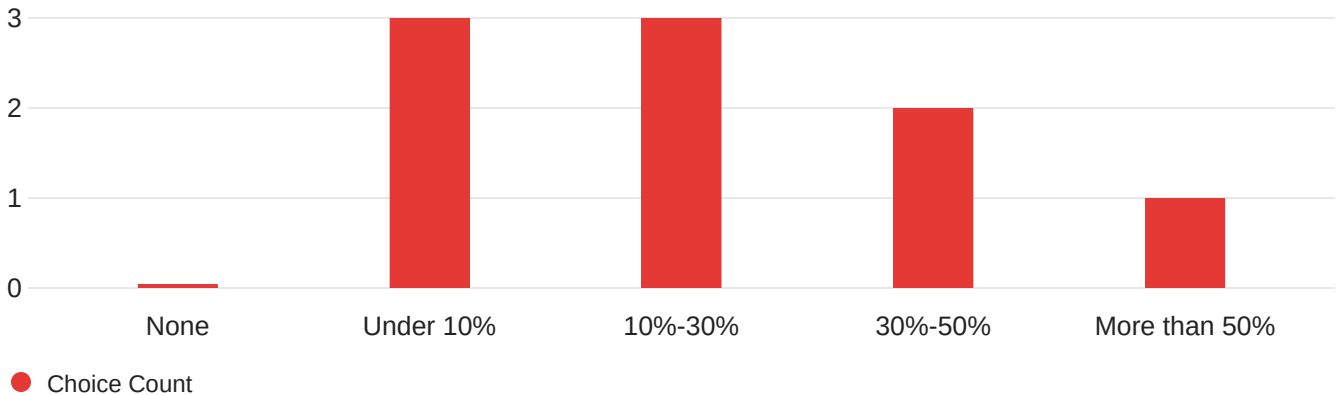


Q28 - Did you take NE 102 before you took NE 203?

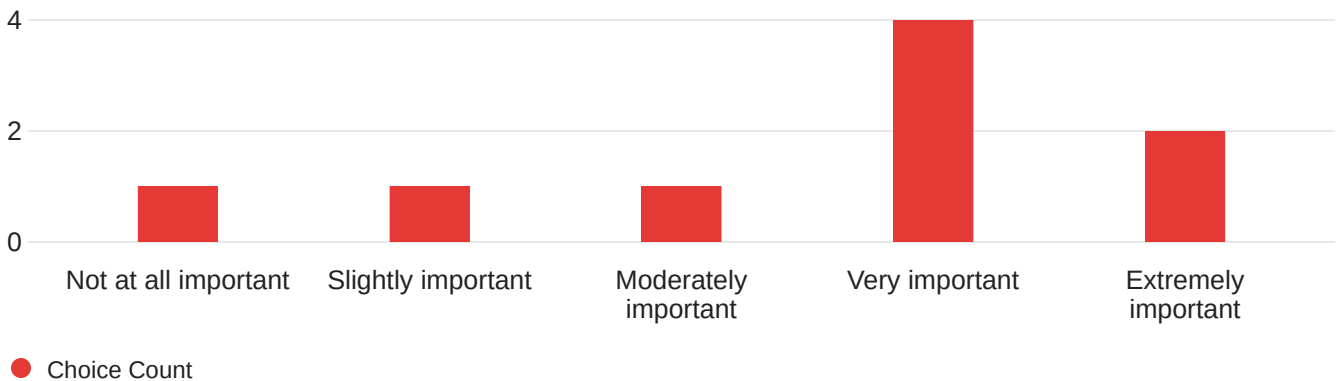
9 Responses



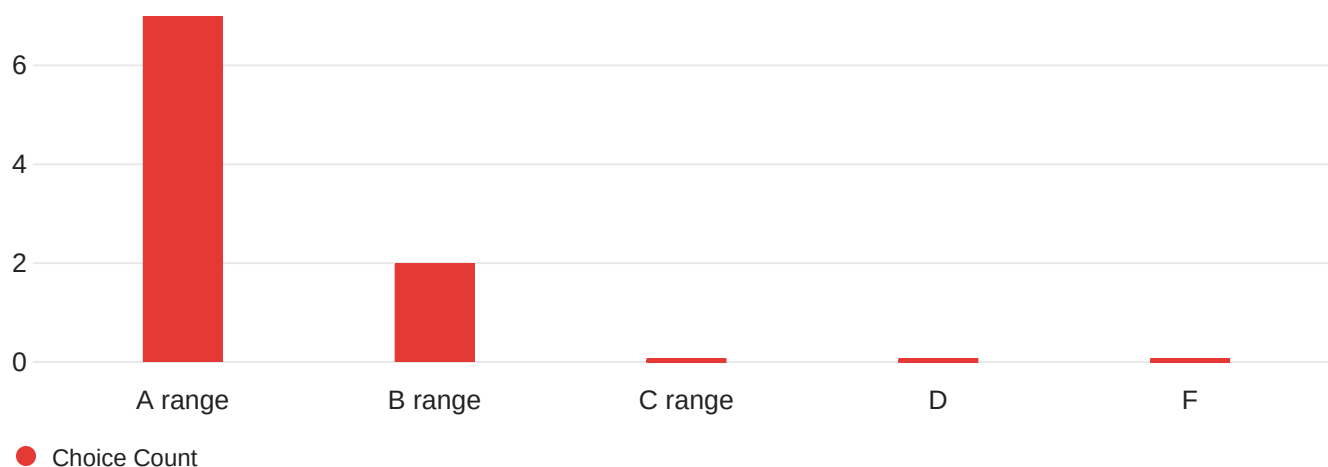
Q34 - In NE 203, how much instructional time (including lecture, lab, discussion, or online engagement) was dedicated to writing instruction?



Q33 - In NE 203, how important did you perceive writing was to your final grade?



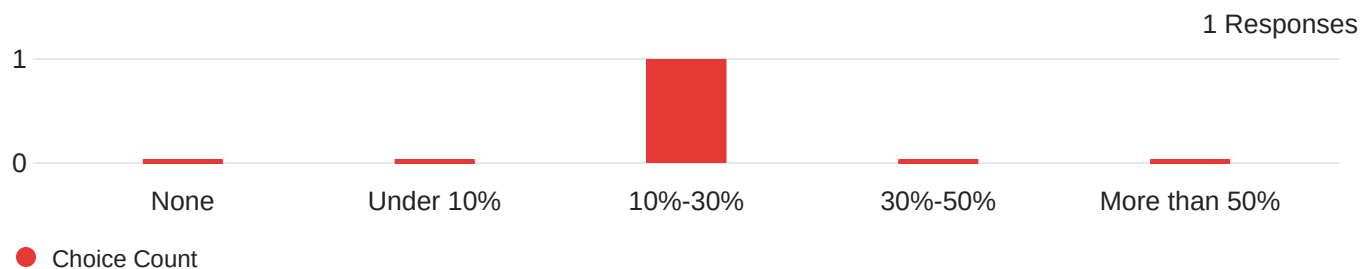
Q32 - What grade did you receive in NE 203?



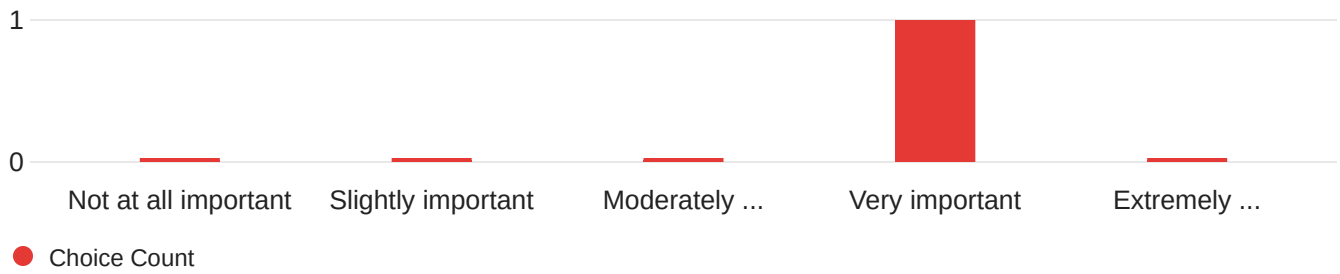
Q95 - Have you complete NE/BI 218 (Integrated Science Experience II)?



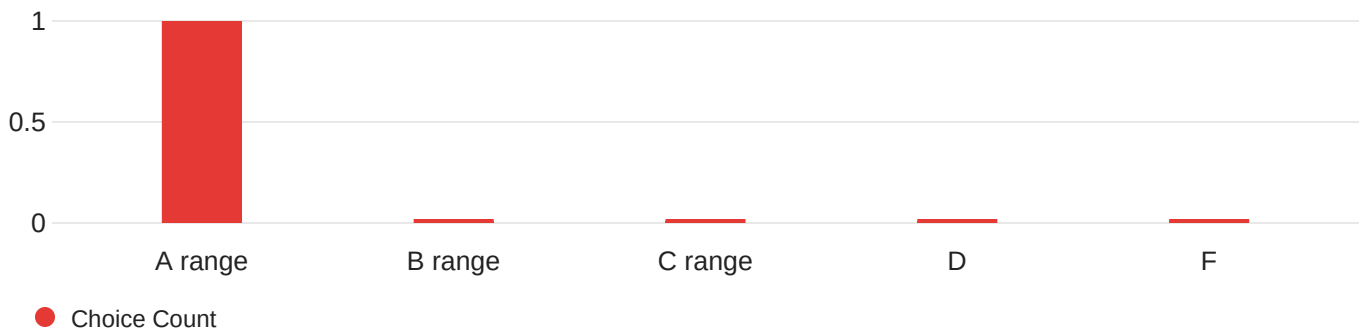
Q41 - In NE/BI 218, how much instructional time (including lecture, lab, discussion, or online engagement) was dedicated to writing instruction?



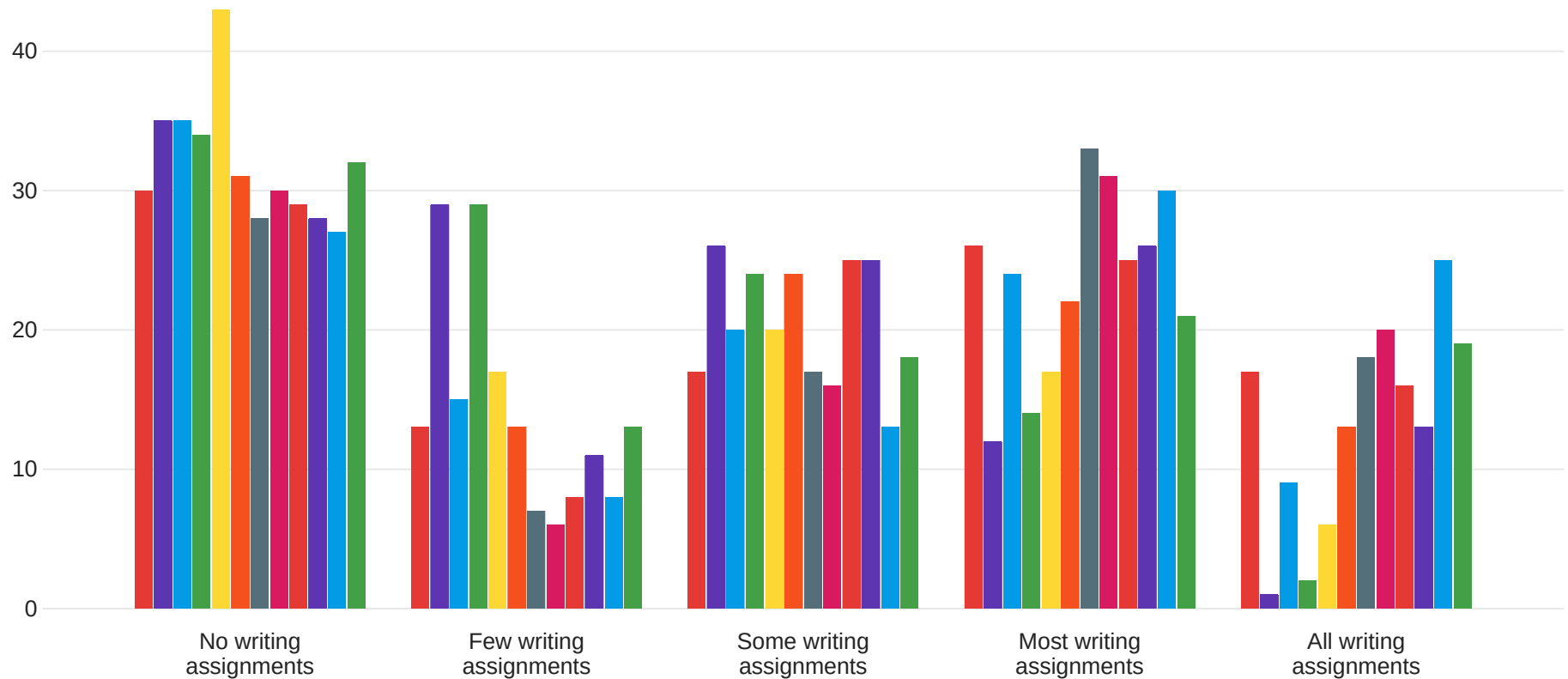
Q40 - In NE/BI 218, how important did you perceive writing was to your final grade?



Q39 - What grade did you receive in NE/BI 218?

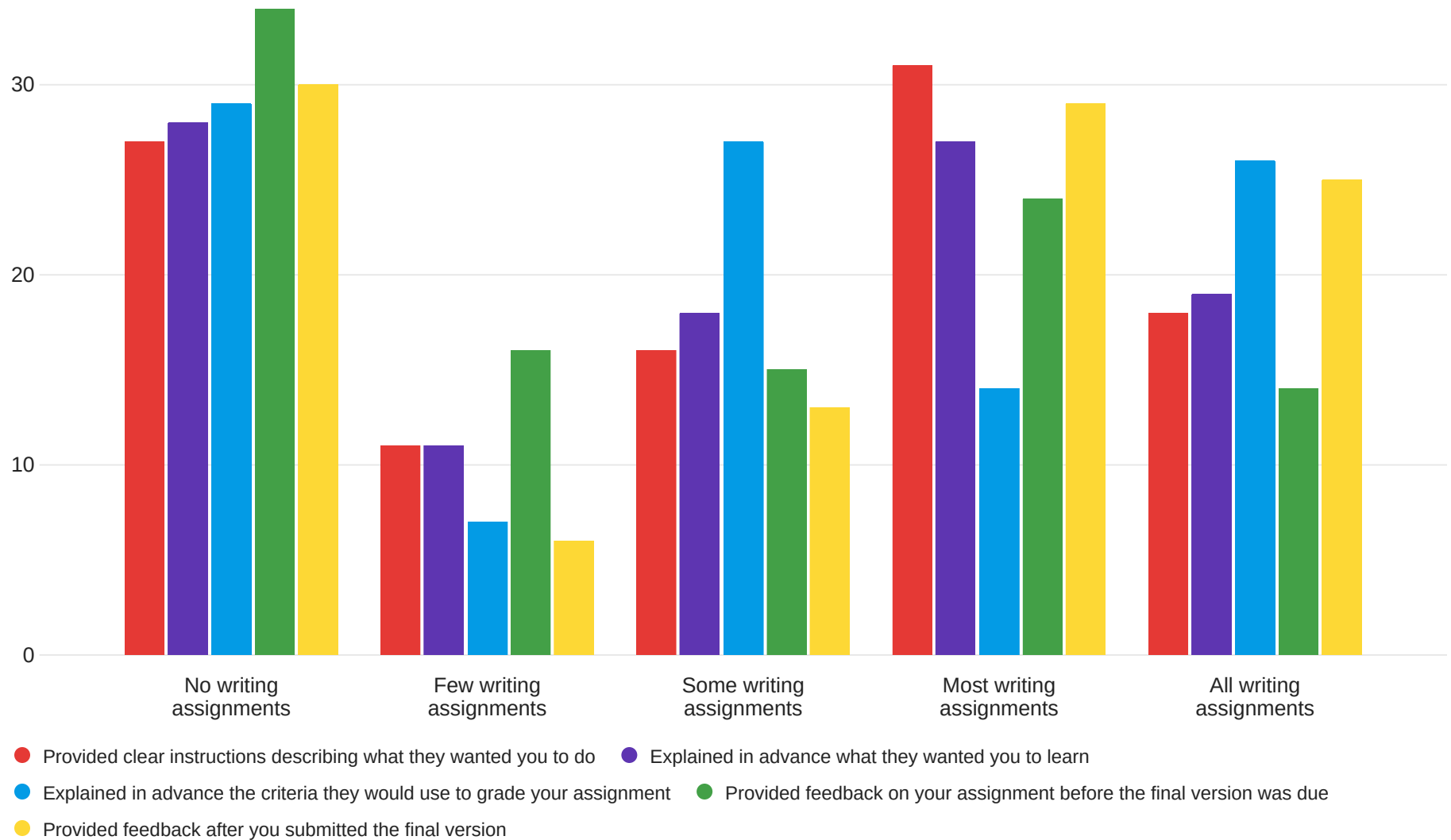


Q43 - In your BU Neuroscience classes, for how many writing assignments did you d...

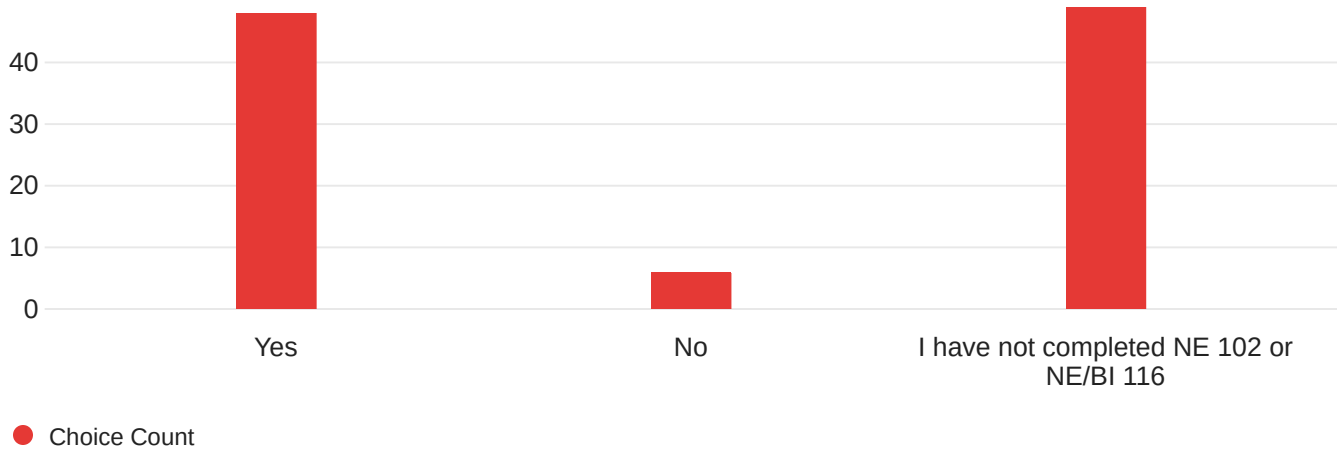


- Talked with a classmate, friend or family member to develop your ideas before beginning
- Talked with a writing consultant, learning assistant or instructor to develop your ideas before beginning
- Received feedback from a classmate, friend or family member during the editing process
- Received feedback from a writing consultant, learning assistant or instructor during the editing process
- Given feedback to a classmate on a draft or outline.
- Summarized material you read such as articles, books or online publications.
- Analyzed or evaluated something that you read, researched or observed
- Described your methods or findings related to data you collected in lab
- Argued a position using evidence and reasoning
- Explained in writing the meaning of numerical or statistical data
- Written in the style and format of a particular field (neuroscience, biology, chemistry, psychology, etc.)
- Addressed a real or imagined audience (classmates, a general reader, an expert reader, etc.)

Q44 - In your BU Neuroscience classes, for how many writing assignments did your...



Q96 - In NE 102 or NE/BI 116, did you participate in a group/team writing project?



Q46 - In NE 102 or NE/BI 116, how would you describe your role in the team writing project?

48 Responses

In NE 102 or NE/BI 116, how would you describe your role in the team writing project?

I did an equal amount of work compared to my group mates

I made outlines for our group then contributed

I did most of the work

Most groups had 4 people, but unexpectedly, I ended up in a group of 2. We made sure to both do the work since there was a lot to do with few people.

writing

Contributor

Contributer?

Equal contributor

since I was the only group member who came in person for labs, I did less of the writing assignments each week

contribued

All group members contributed as equal an amount of work as could be divided

I contributed a lot

I helped with ideas and formatting.

I was usually the one leading it, and had to ask my group members to participate

Equal to the other team members

Equal to that of my two other group members, we worked pretty much the same amount on assignments

directing

half

Upkeeping writing slack to use as evidence in writing project

We all split the work evenly.

I don't take me 102

In NE102 my group was only 2 people so we would just split the work and help us edit and revise each other's work

Classes were online then so since I was in person doing the lab, we were instructed that otehr group members do a lot of the writing. However, I still helped alot with the final writng project.

One of two primary writers

We spliced the paper assignments equally, so each of us contributed to some parts of the writing, depending on the assignment.

major

Organizer

I had to do everything myself

Leader, due to my prior experience writing scientific papers and research

I was a leader for my group

I wrote the abstract, materials and methods section, and did the figures

Leader / First Author

my partner was mostly absent, so I did most of the work.

Member of group- split up work nicely

I had a lead role in the writing project

Equal

My team and I split up the work pretty evenly, I believe myself and another team member completed most of the writing projects ourselves and the other team members would go back and provide minimal edits.

Writing/Researching

coordinator

We collaborated

Leader

In the writing projects, we shared equal amounts of work

I did most of the work

I don't remember anymore

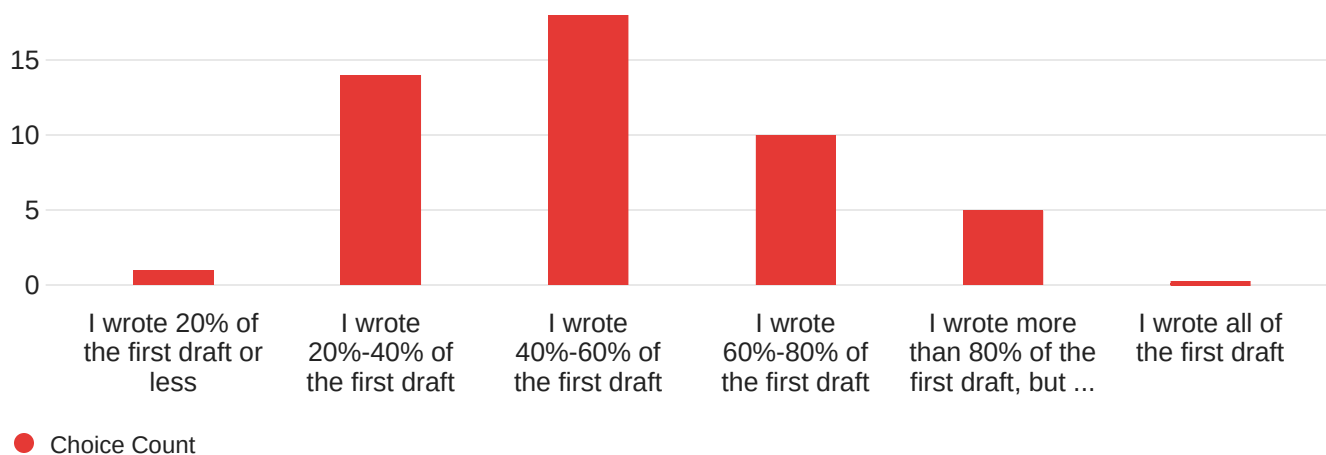
divided up sections

Content/ editing (we all did)

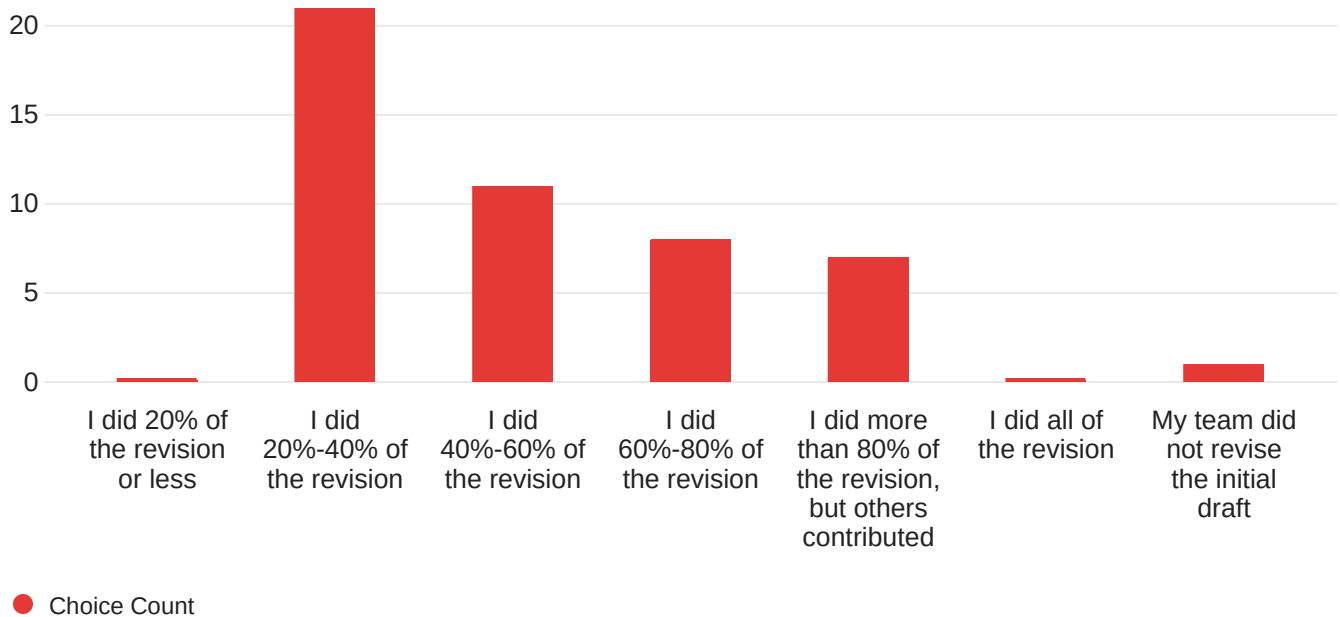
Collaborator

I contributed to lab write-ups.

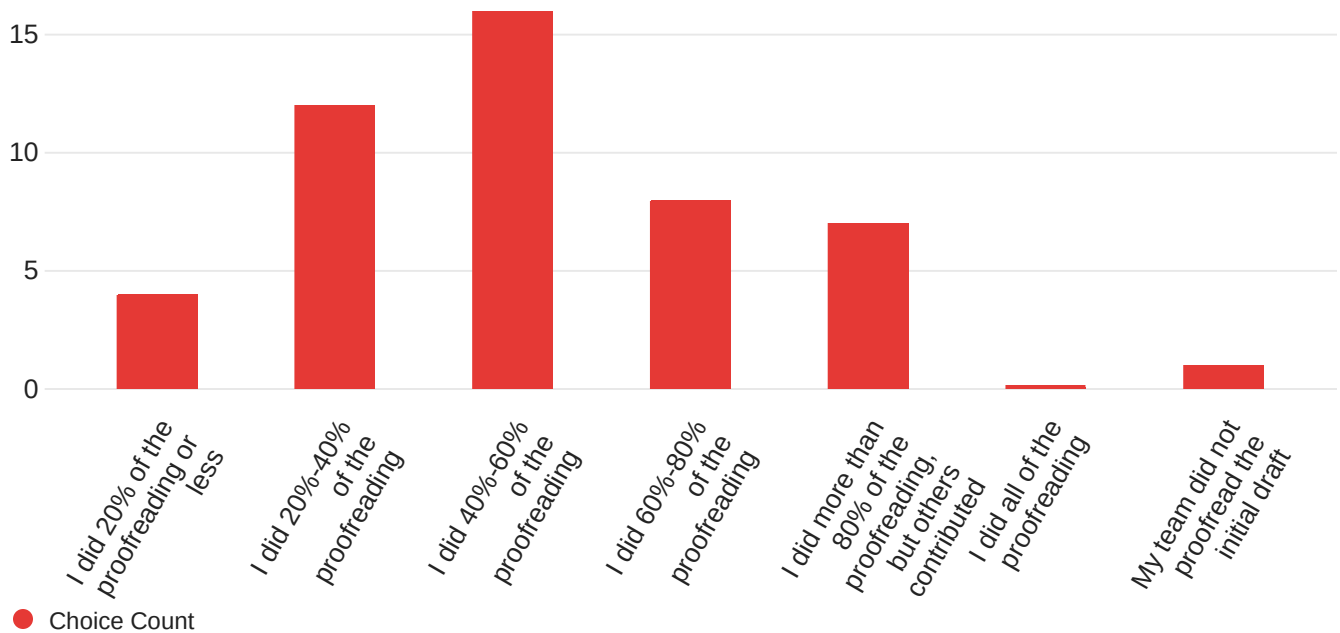
Q47 - In the NE 102 or NE/BI 116 group writing project, how much of the first draft did you write?



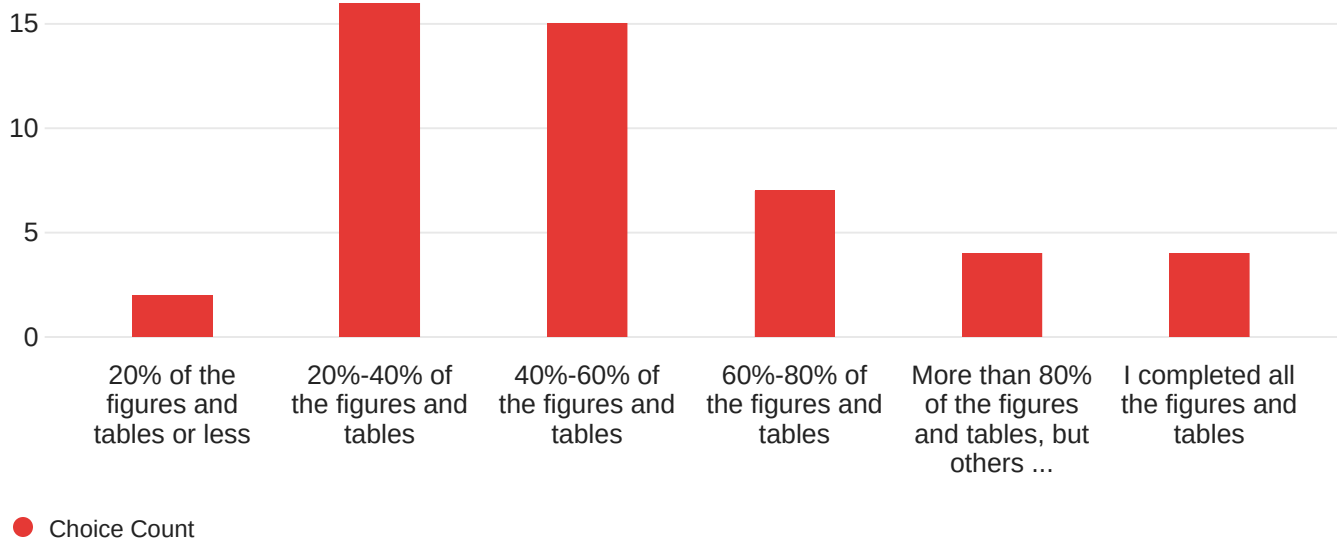
Q48 - In the NE 102 or NE/BI 116 group writing project, how much of the revision did you do? "Revision" means large-scale changes to the initial draft, such as re-organizing, making changes to the content, re-writing sections, and so on.



Q49 - In the NE 102 or NE/BI 116 group writing project, how much of the proofreading did you do? "Proofreading" means small-scale edits to the initial draft, such as corrections to formatting, citations or grammar.



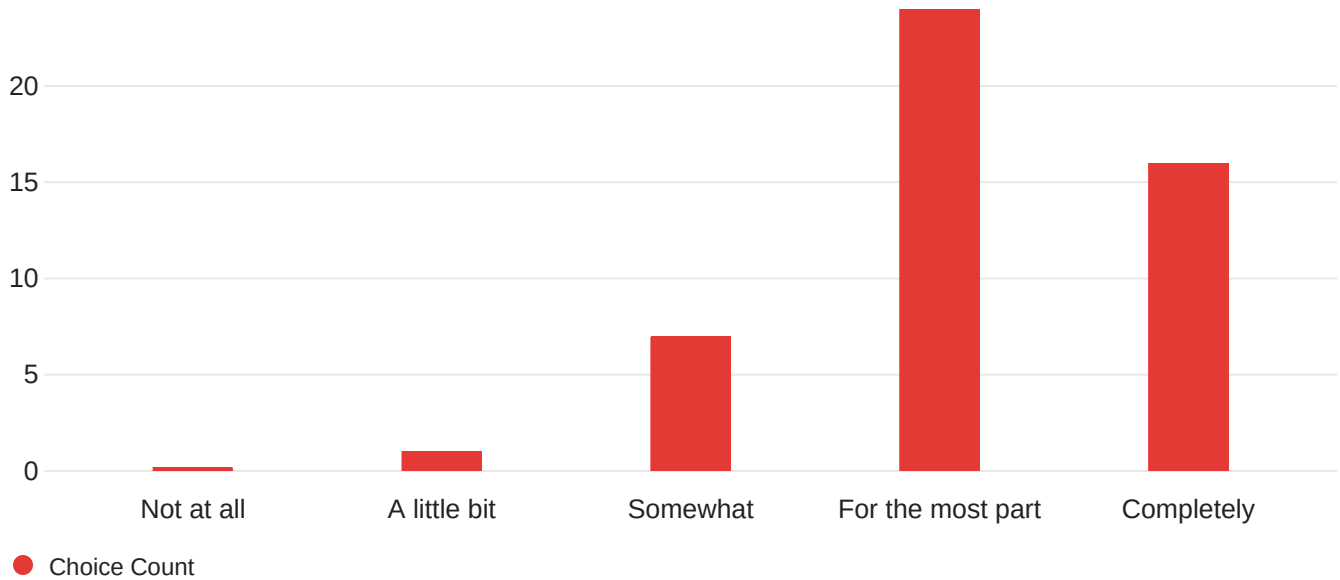
Q50 - In the NE 102 or NE/BI 116 group writing project, how much did you contribute to the figures and tables (including captions)?



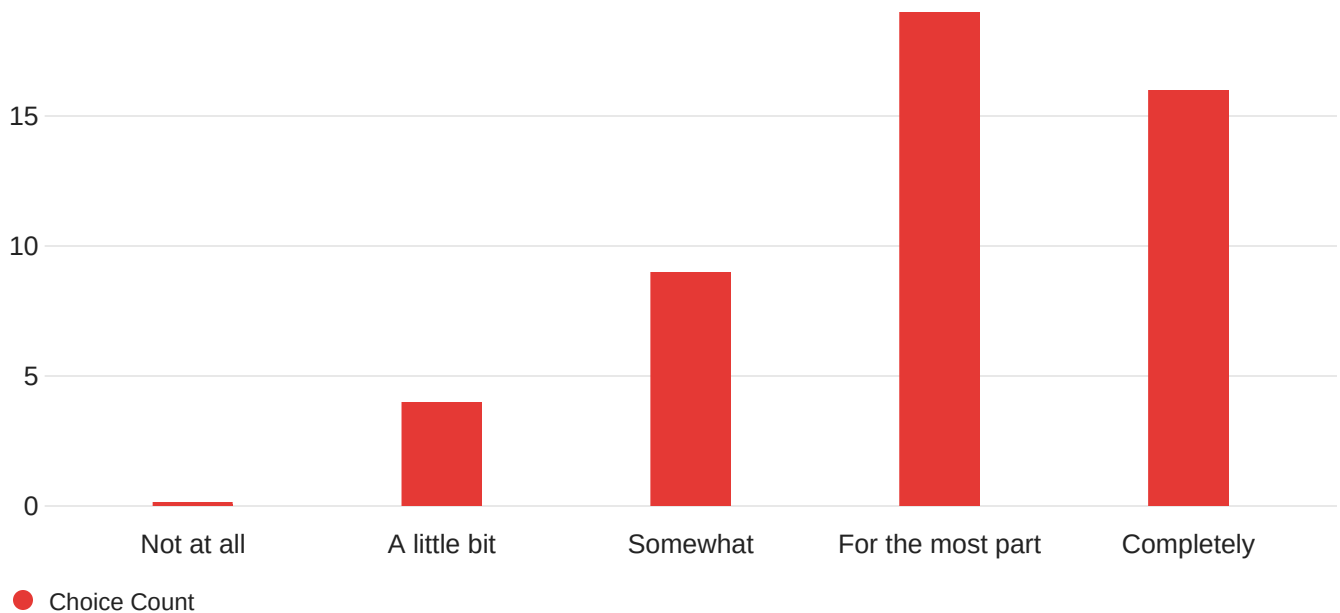
Q51 - In the NE 102 or NE/BI 116 group writing project, to what extent do you feel you were a leader in your team?



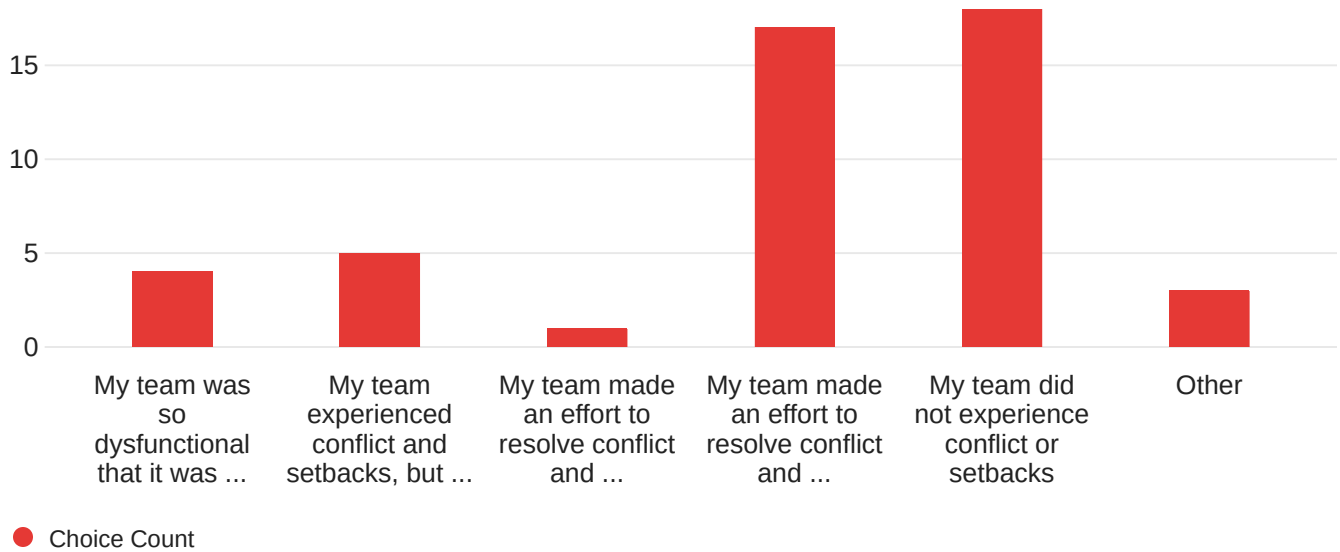
Q52 - In the NE 102 or NE/BI 116 group writing project, to what extent do you feel your team members respected your contributions?



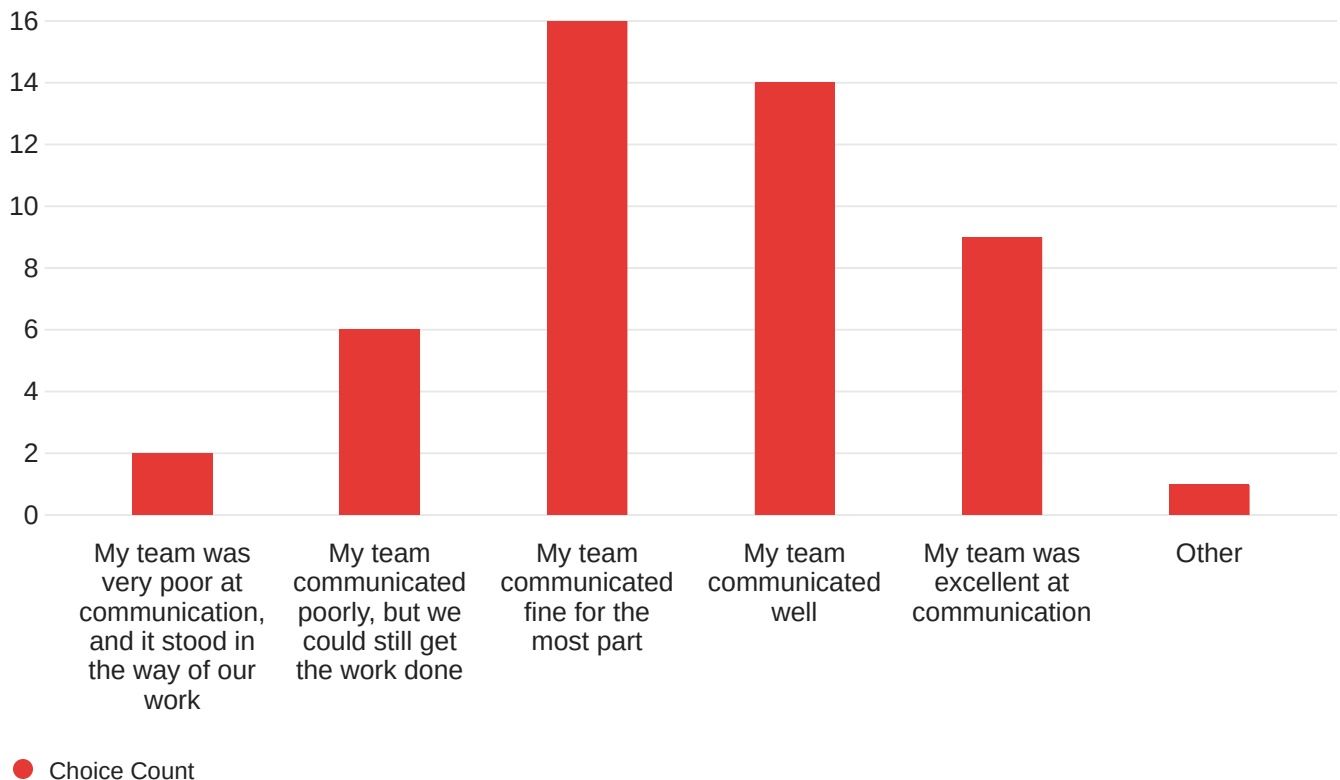
Q53 - In the NE 102 or NE/BI 116 group writing project, to what extent do you think your team abided by your agreement in the team contract?



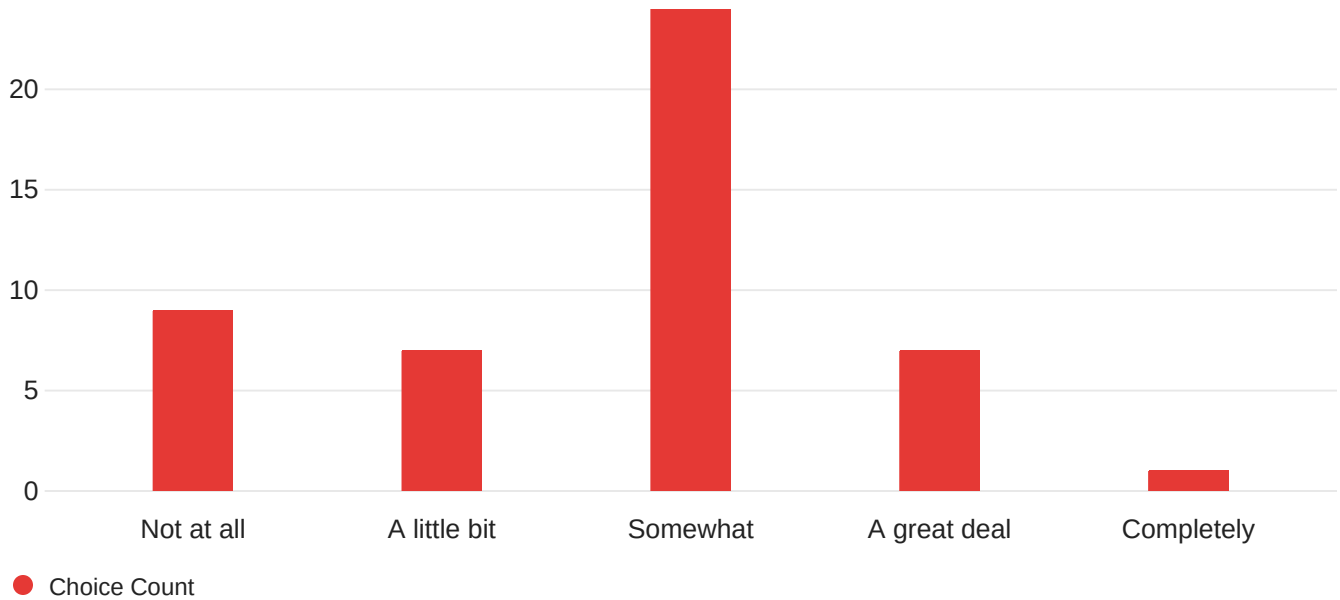
Q54 - Thinking about your team dynamic in NE 102 or NE/BI 116, choose the scenario that was closest to your experience. - Selected Choice



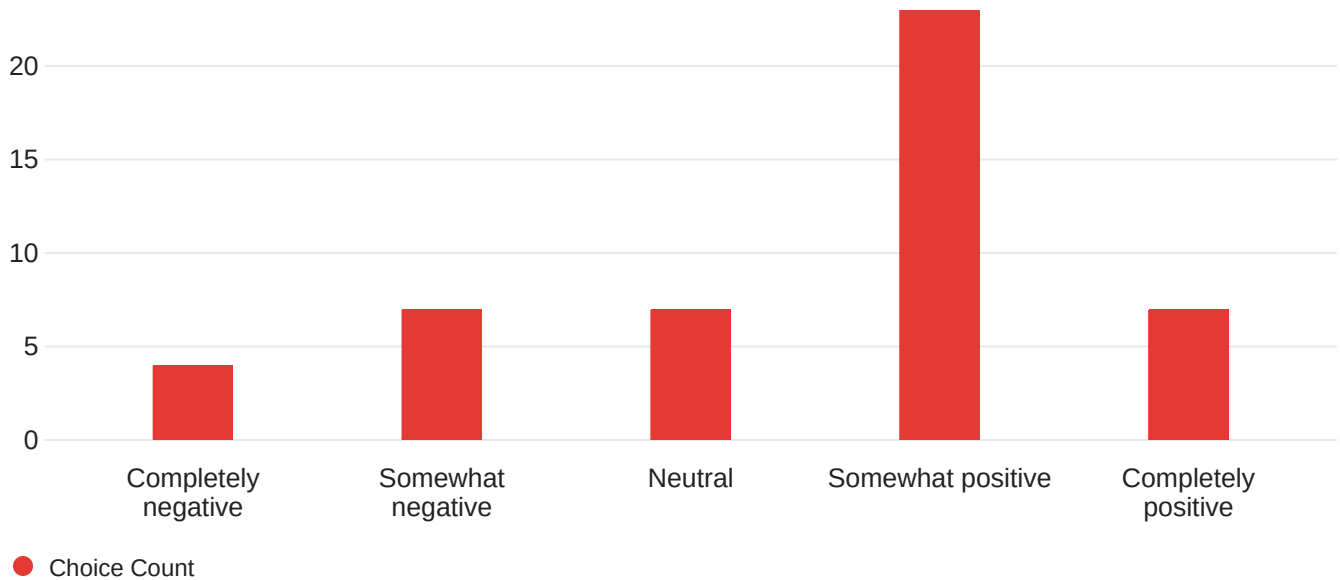
Q55 - In the NE 102 or NE/BI 116 group writing project, how would you characterize the communication in your team? - Selected Choice



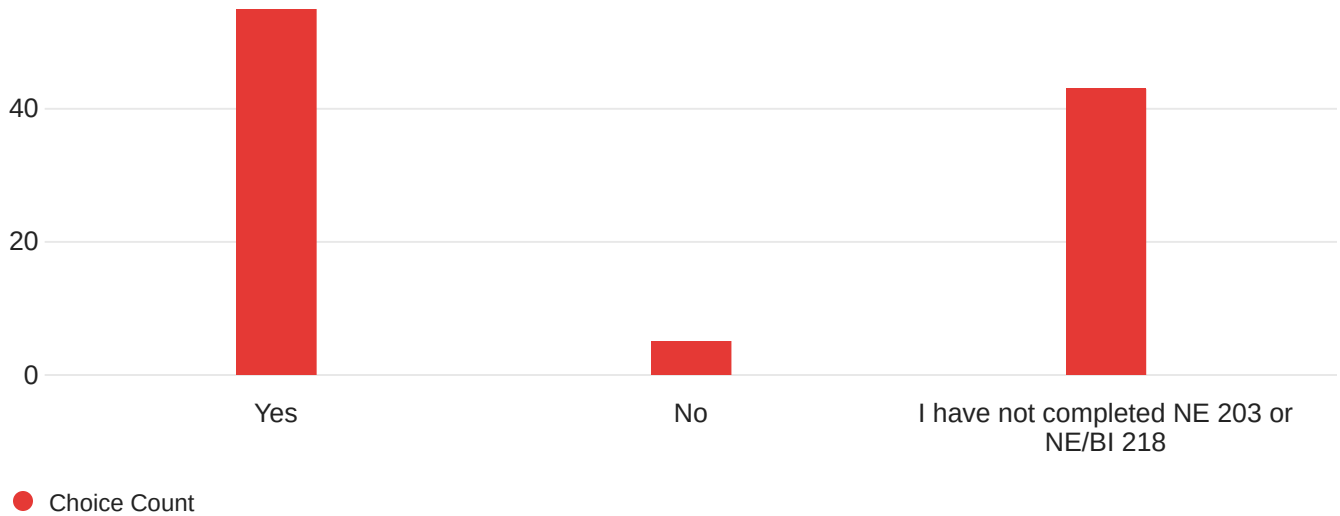
Q56 - In the NE 102 or NE/BI 116 group writing project, to what extent did witnessing the writing, perspectives, and approaches of your peers change your own writing?



Q57 - Overall, how would you characterize your experience with group writing in NE 102 or NE/BI 116?



Q97 - In NE 203 or NE/BI 218, did you participate in a group/team writing project?



Q59 - In NE 203 or NE/BI 218, how would you describe your role in this team writing project?

55 Responses

In NE 203 or NE/BI 218, how would you describe your role in this team writing project?

Everyone contributed to research, lab work, and writing sections of the paper

Leader of the group

I was one of the three group members (there were 4 total) that consistently did work. I did a lot of the fine detail editing and formatting and also did a lot of sentence level revisions.

Sometimes It was hard because most of the time our schedule didn't work. We had difficulty in finding a time that works for each group member

Team member

I wrote upwards of 85% of the written assignments

Contributer

I was the most focused on the details

Equal

NE203 was difficult for me, and one group member would take over and not let anyone else do the work.

Writing

Contributer

Researcher

our group divided the work on each assignment and were responsible for completing it before the due date

Group Facilitator, Writer

I usually took on leadership roles

Editor, writer, consultant

member

I played an equal part in the writing involved in the course

i contributed a lot

Ideas and formatting.

lab member

As someone who wrote and did research to help everyone

Equal to other members

equal contributor

one of two leaders out of four

Co-Leader

Team leader, organized the project and delegated the work/did most of it

I was an equal part of a pair. Work was split evenly.

Team player

It was more hands-on experimenting.

We all split up the work and worked on our respective parts and would check over each other's work

evenly split among group members

one of two primary writes

an equal member

A supporter

In this project, I was handling the experiments and coming in during extra labs. I also did all of the Spark pages, the writing was less so on my side.

Leader / First Author

an equal member of the team

Leader

I had a lead role in the writing project

Equal

Writing

Collab

We all took responsibility for the work together in a collaborative way but without strictly defined roles.

An active contributor

I feel that I took leadership in most group assignments.

Leader

Not sure

split up work

We try to split the work up. I do a lot of the editing.

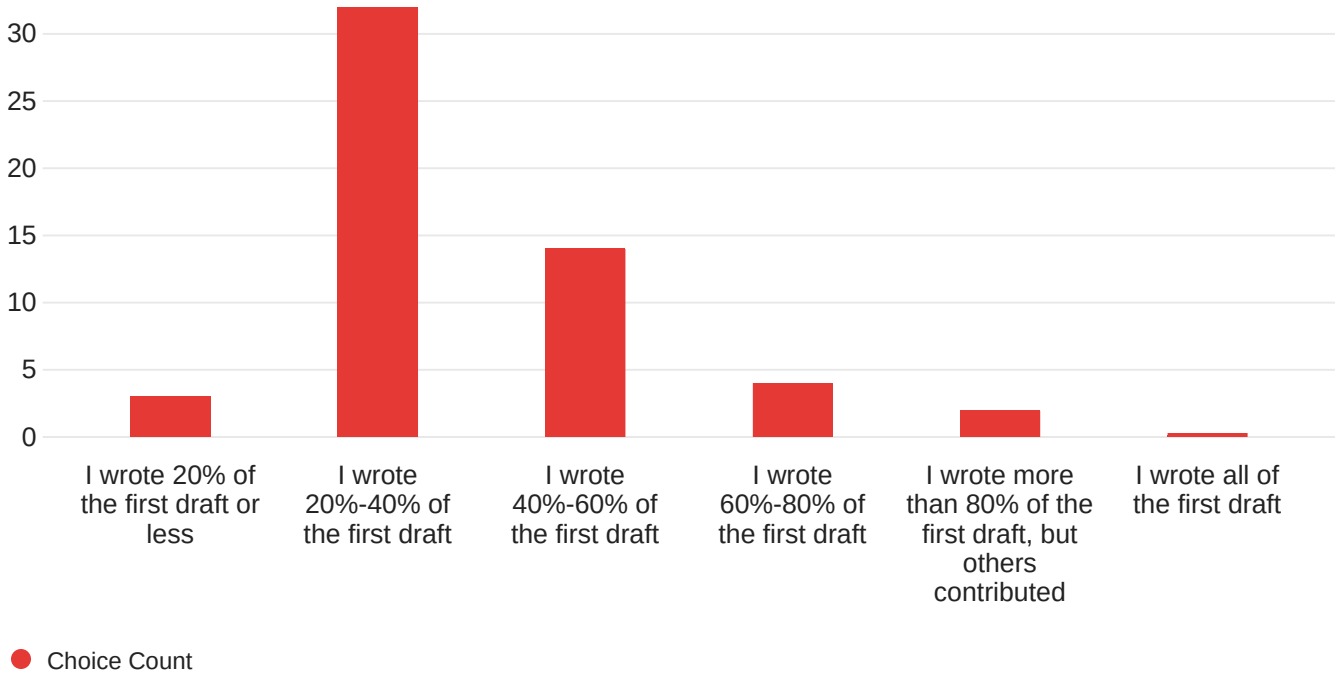
very interesting and nice

Collaborator

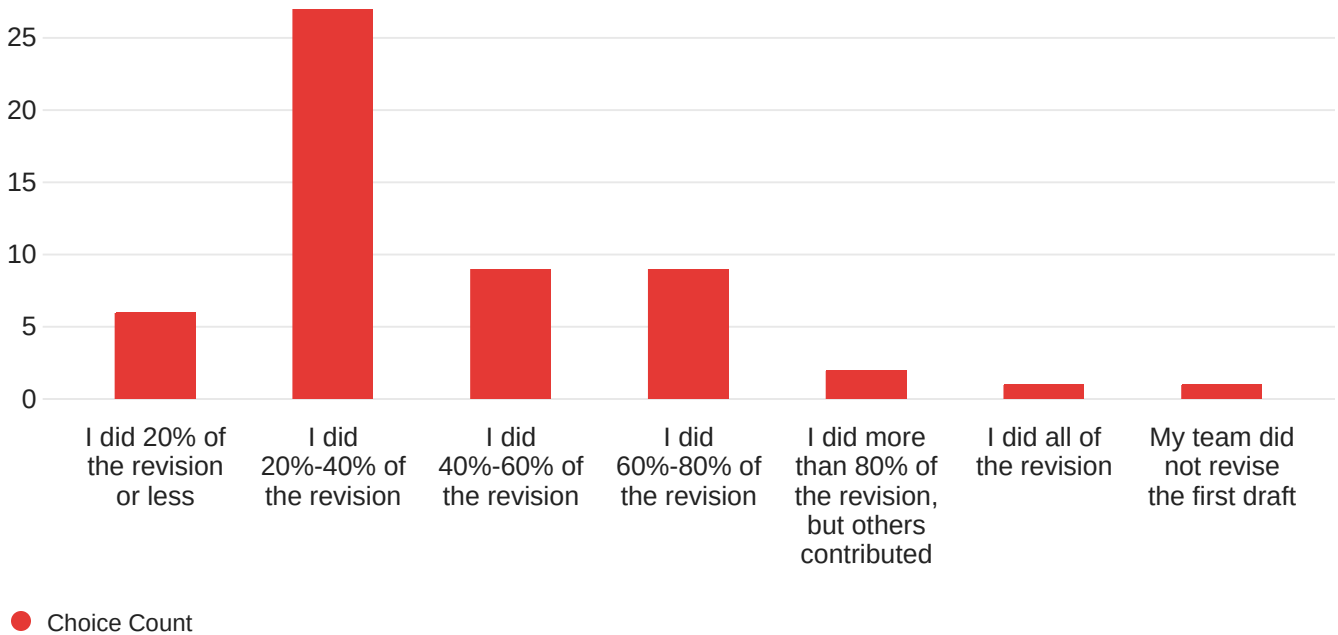
Independent Project

Organizer

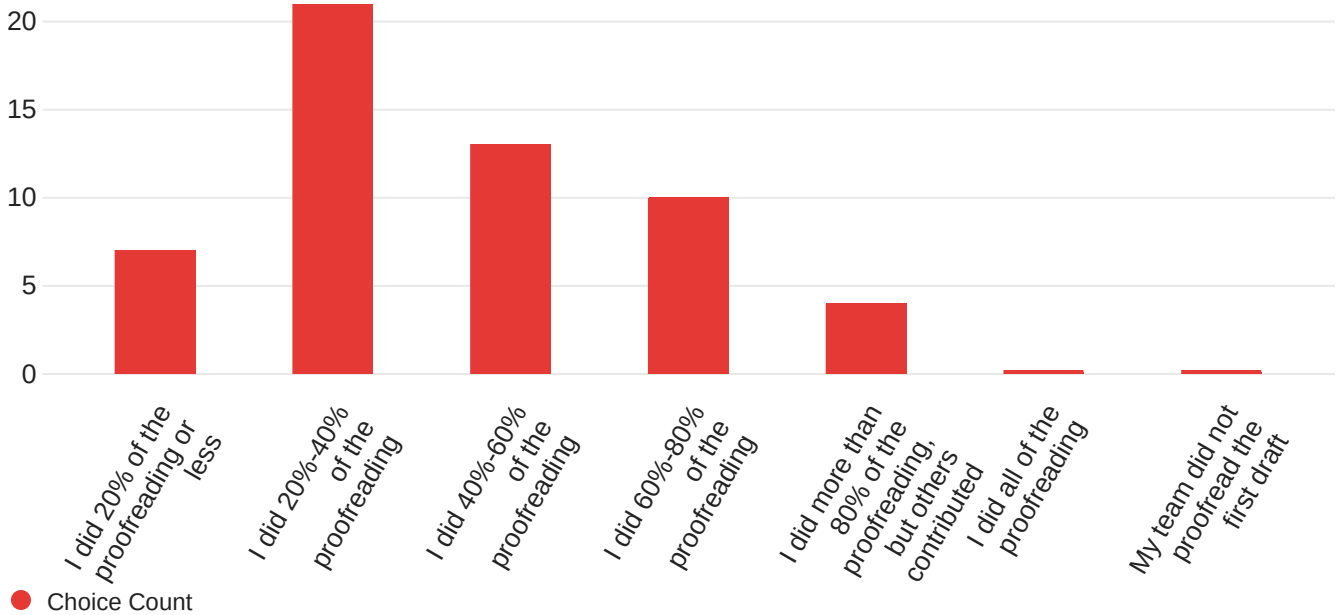
Q60 - In the NE 203 or NE/BI 218 group writing project, how much of the first draft did you write?



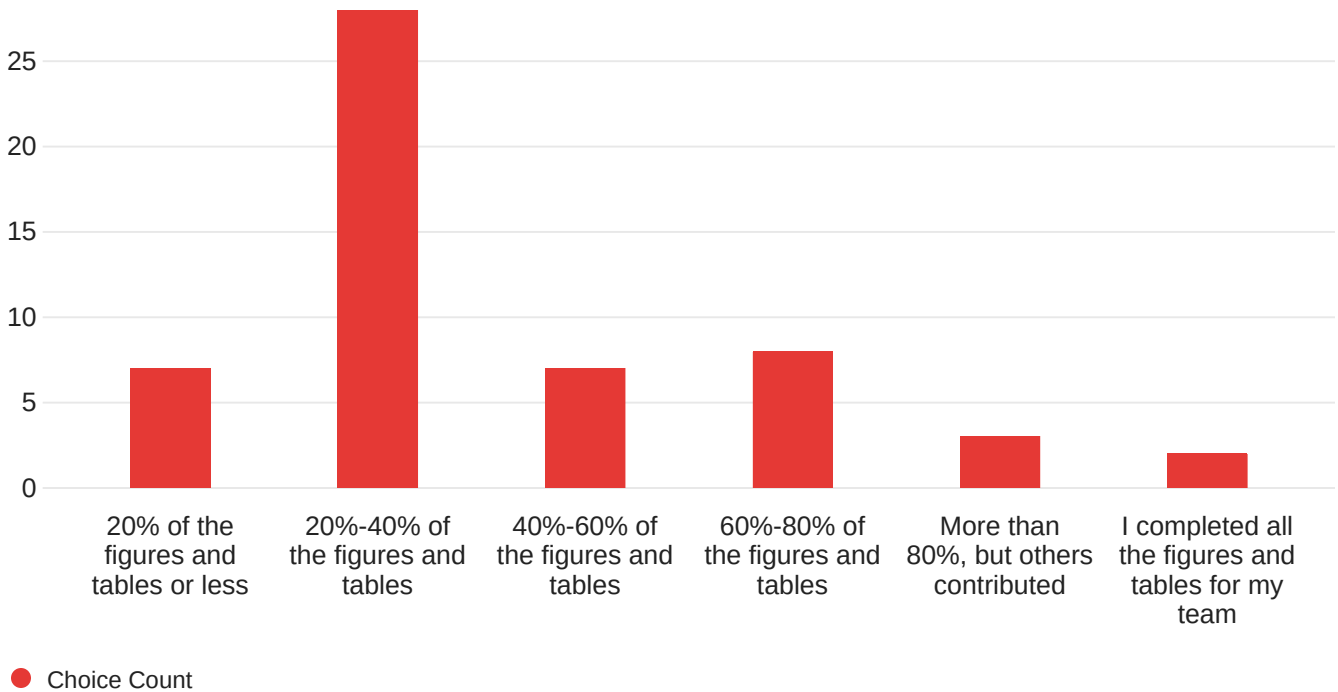
Q61 - In your NE 203 or NE/BI 218 group writing project, how much of the revision did you do? "Revision" means large-scale changes to the initial draft, such as re-organizing, making changes to the content, re-writing sections, and so on.



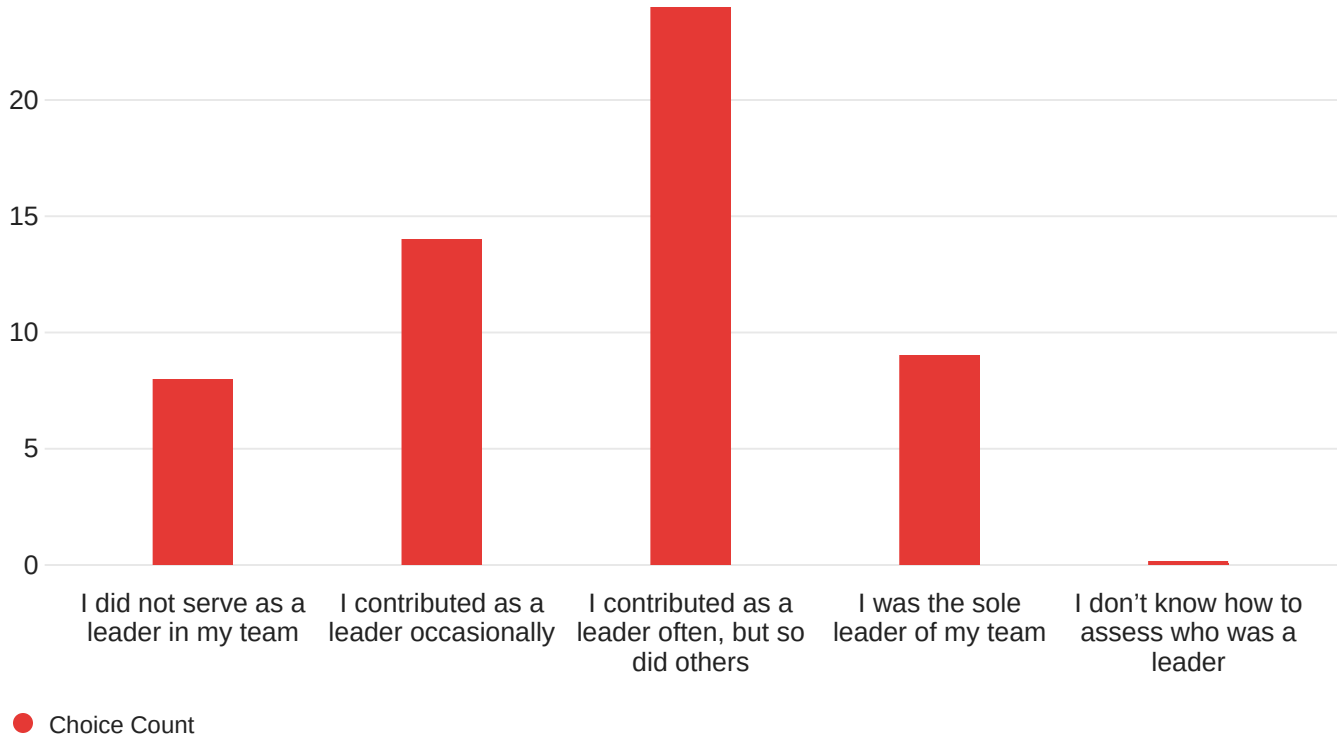
Q62 - In the NE 203 or NE/BI 218 group writing project, how much of the proofreading did you do? "Proofreading" means small-scale changes to the initial draft, such as corrections to the formatting, citations, or grammar.



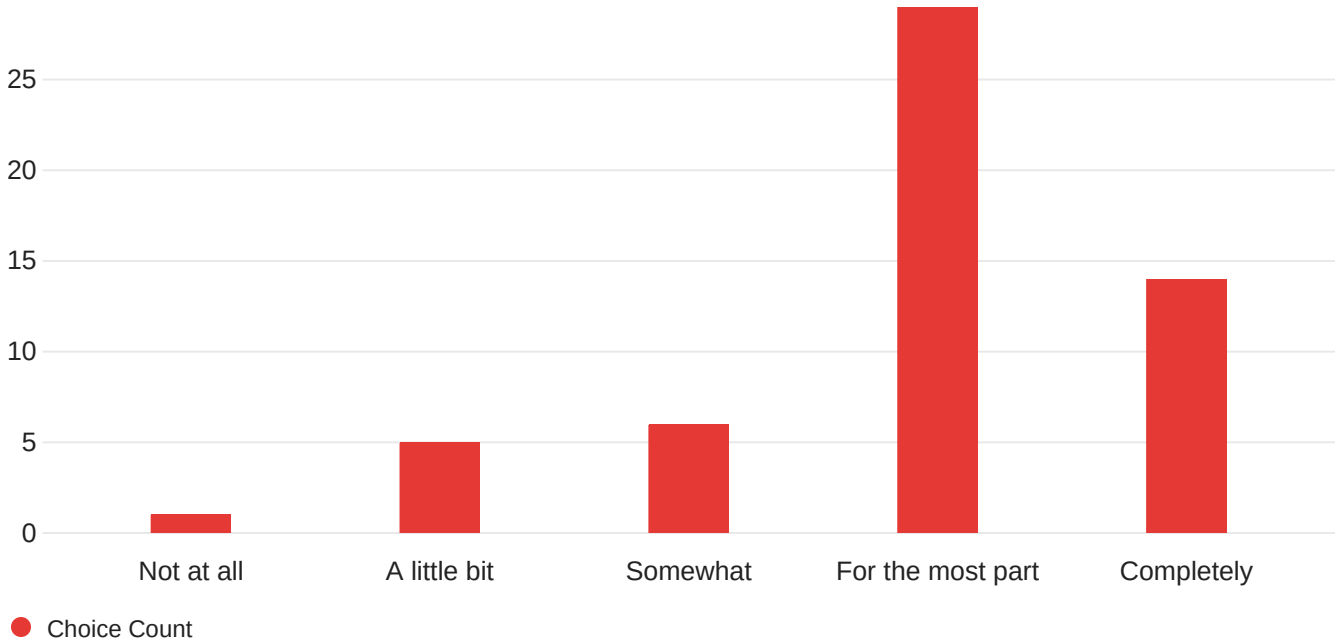
Q63 - In the NE 203 or NE/BI 218 group writing project, how much did you contribute to the figures and tables (including the captions)?



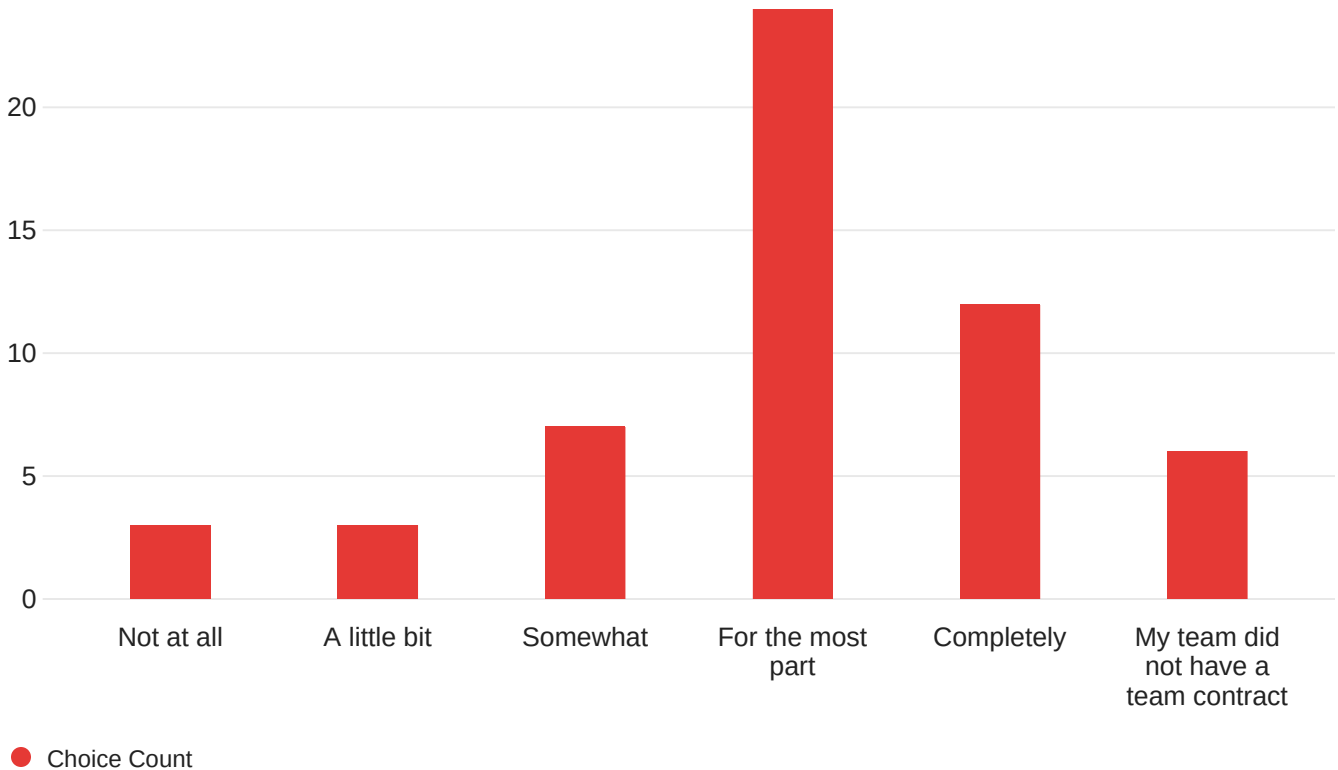
Q64 - In the NE 203 or NE/BI 218 group writing project, to what extent do you feel you were a leader in your team?



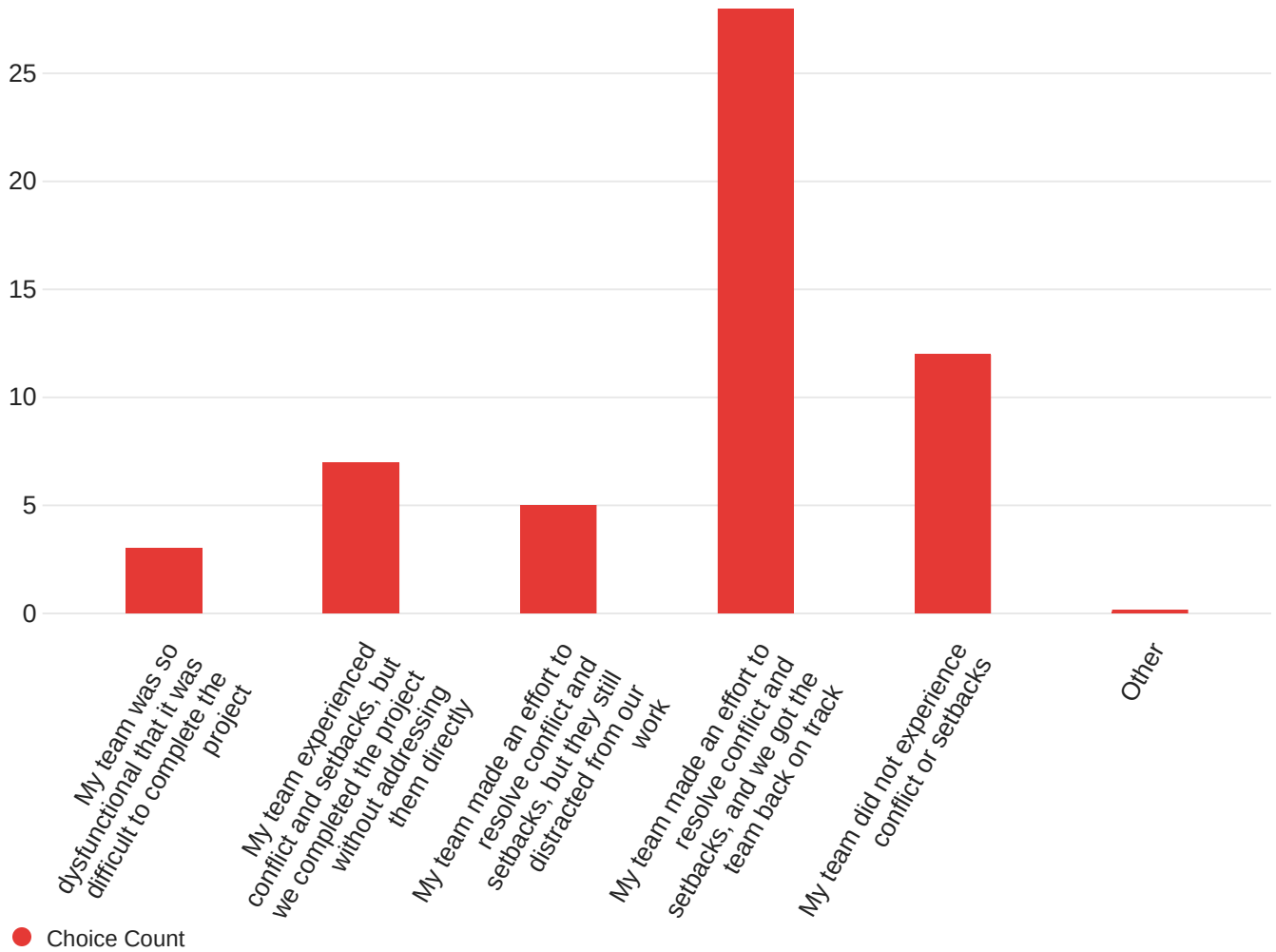
Q65 - In the NE 203 or NE/BI 218 group writing project, to what extent do you feel your team members respected your contributions?



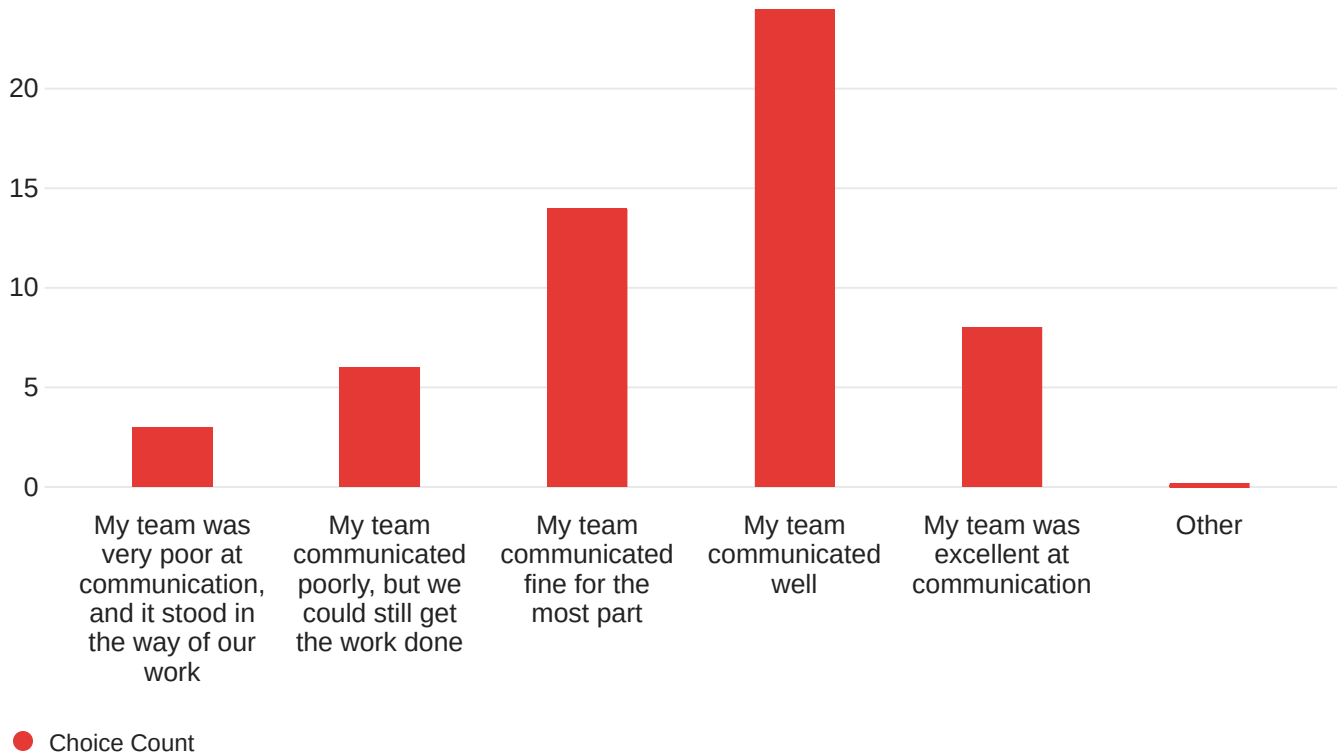
Q66 - In your NE 203 or NE/BI 218 group writing project, to what extent do you feel your team abided by your agreement in the team contract?



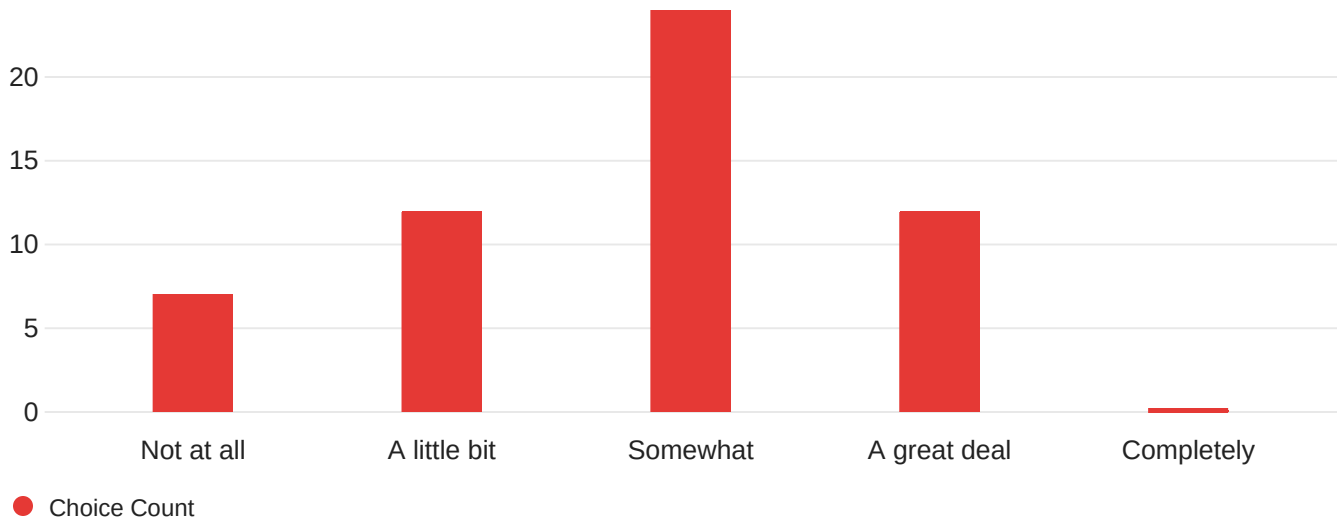
Q67 - Thinking about your team/group dynamic in NE 203 or NE/BI 218, choose the scenario that was closest to your experience. - Selected Choice



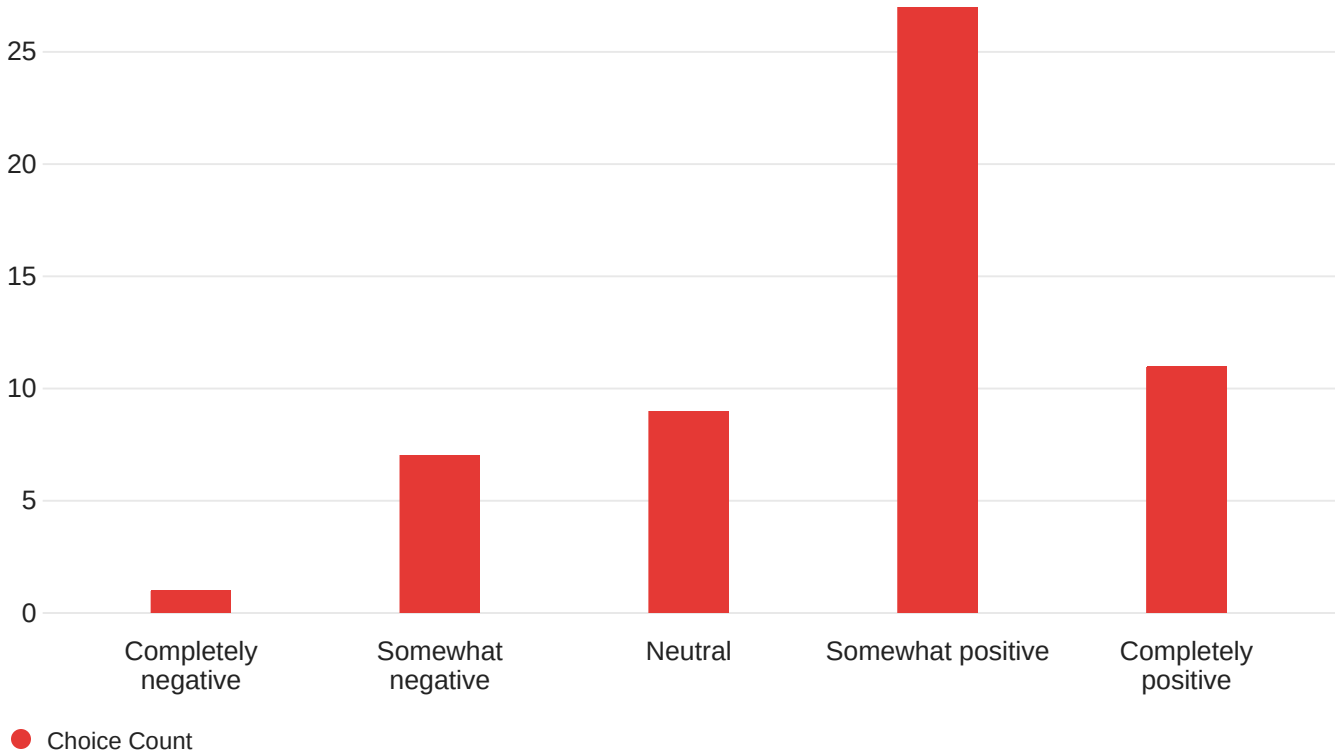
Q69 - In the NE 203 or NE/BI 218 group writing project, how would you characterize the communication in your team? - Selected Choice



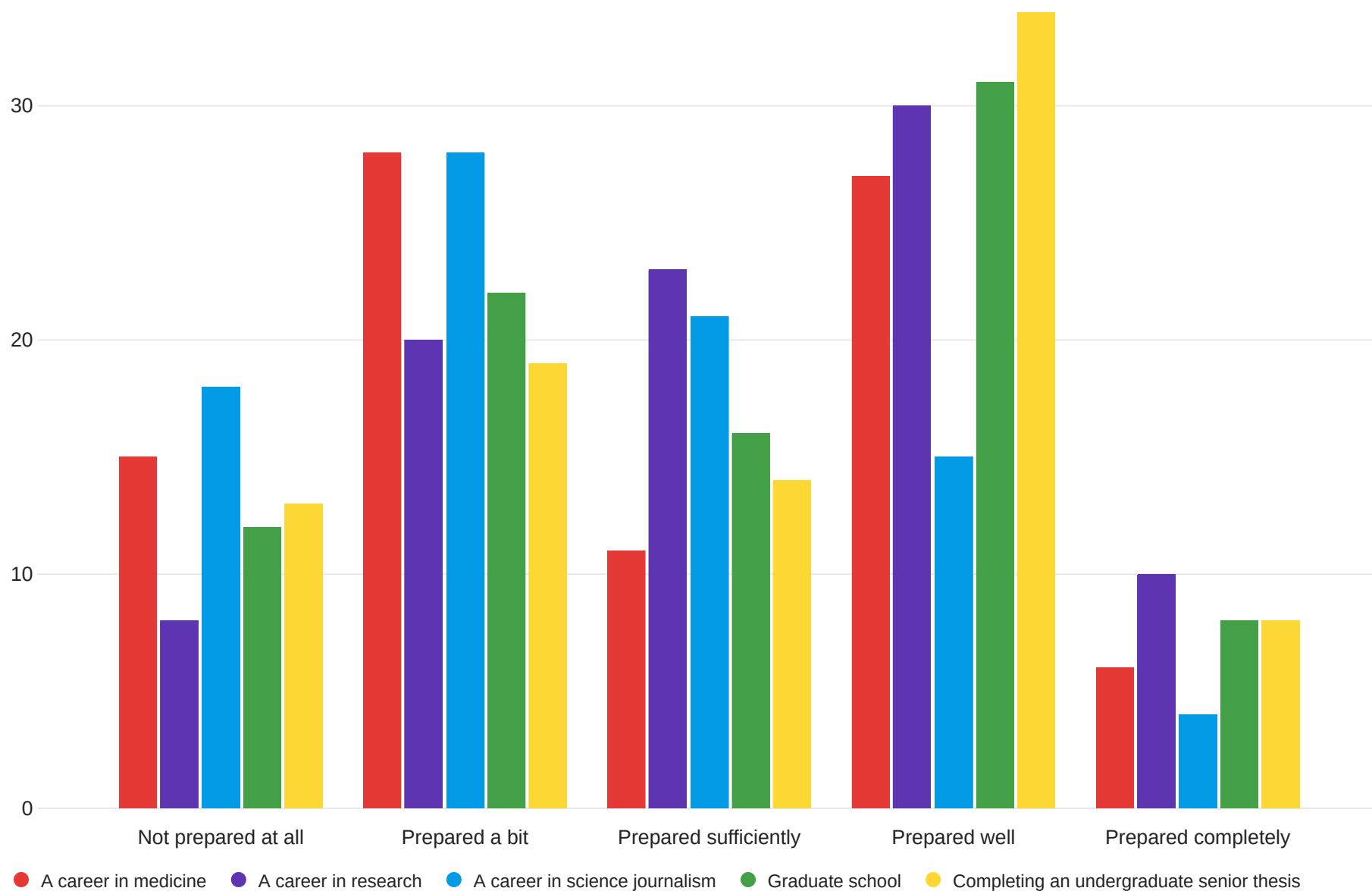
Q68 - In the NE 203 or NE/BI 218 group writing project, to what extent did witnessing the writing, perspectives and approaches of your peers change your own writing?



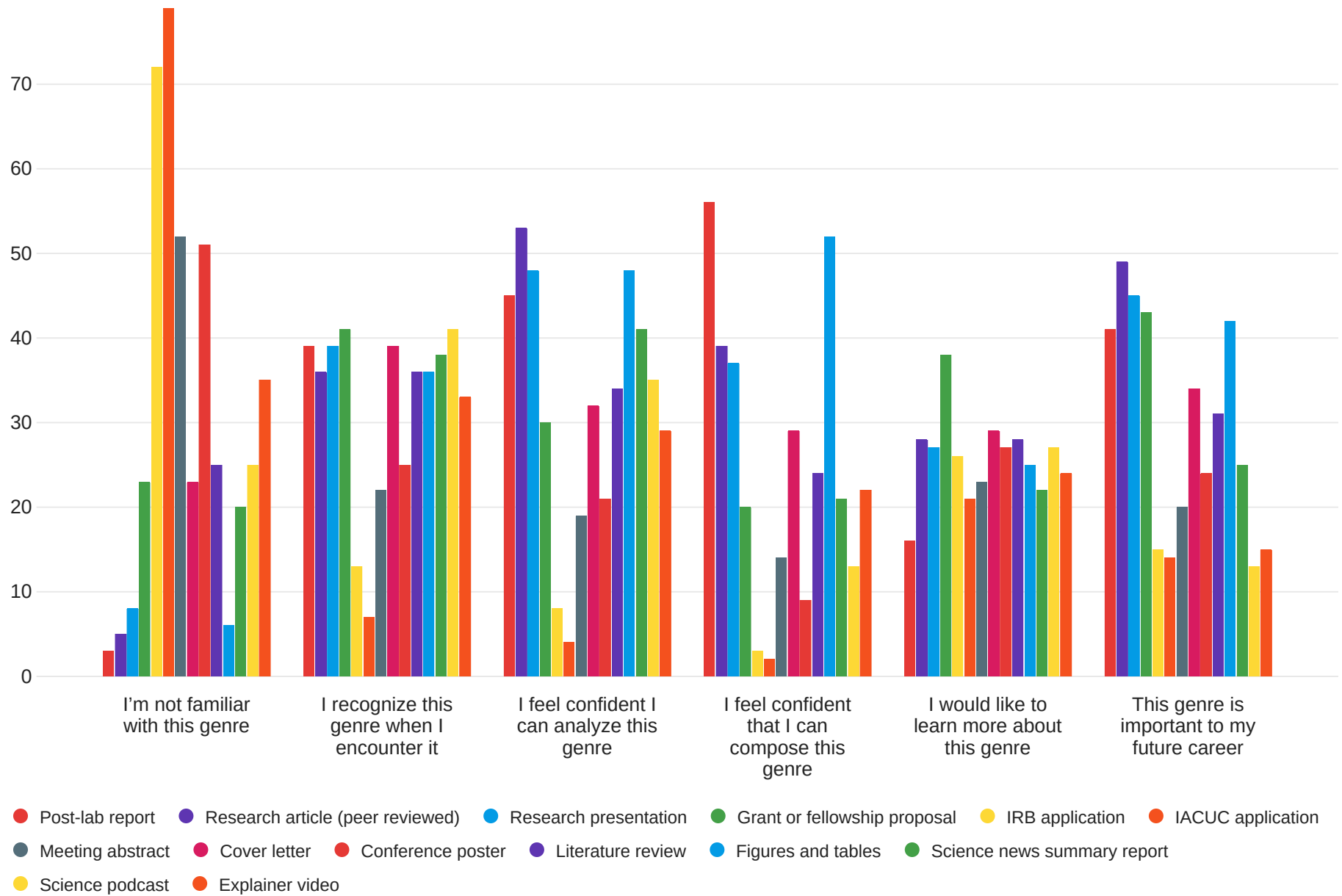
Q70 - How would you characterize your experience with group writing in NE 203 or NE/BI 218?



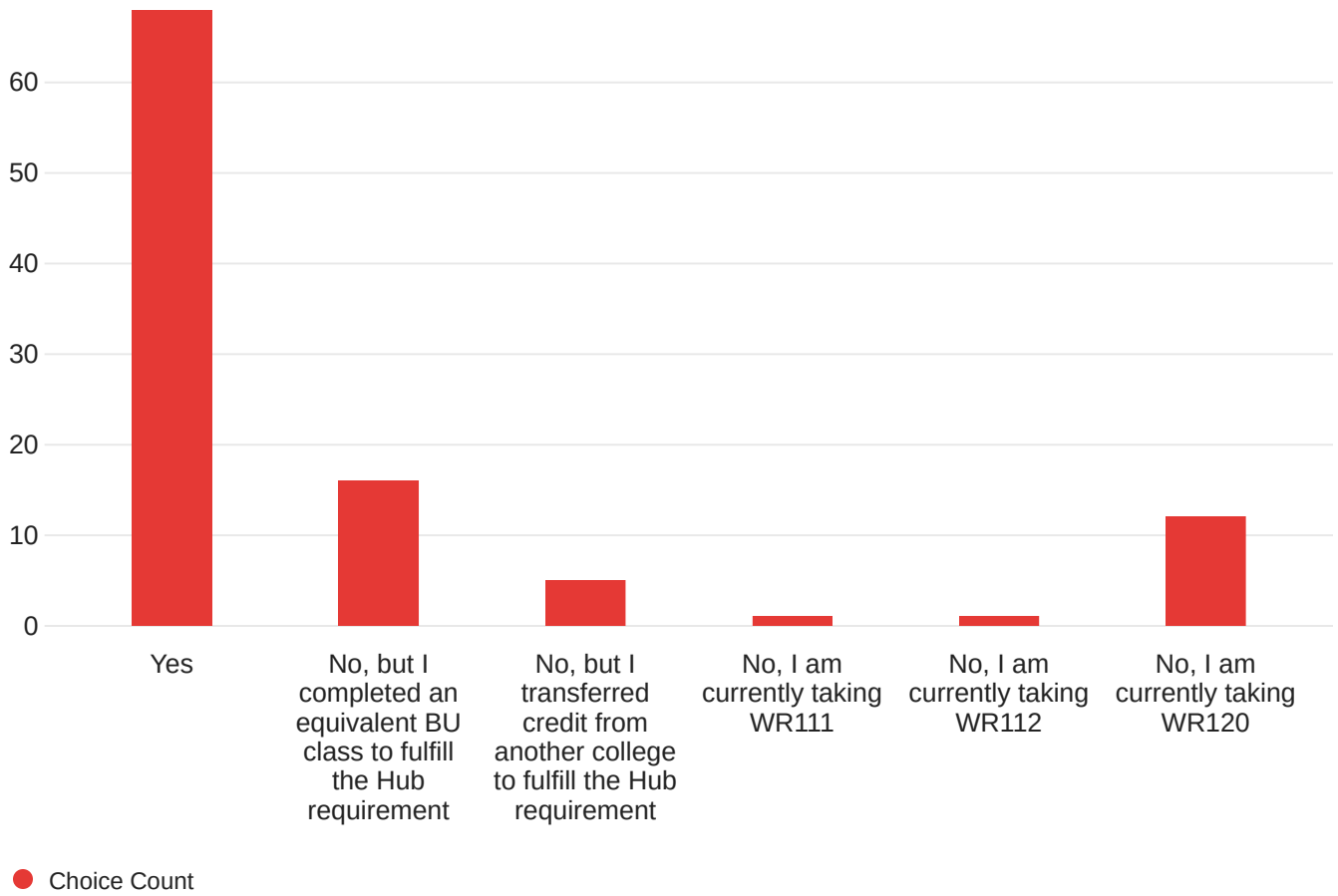
Q71 - How prepared do you feel for the writing you would do for each of the follo...



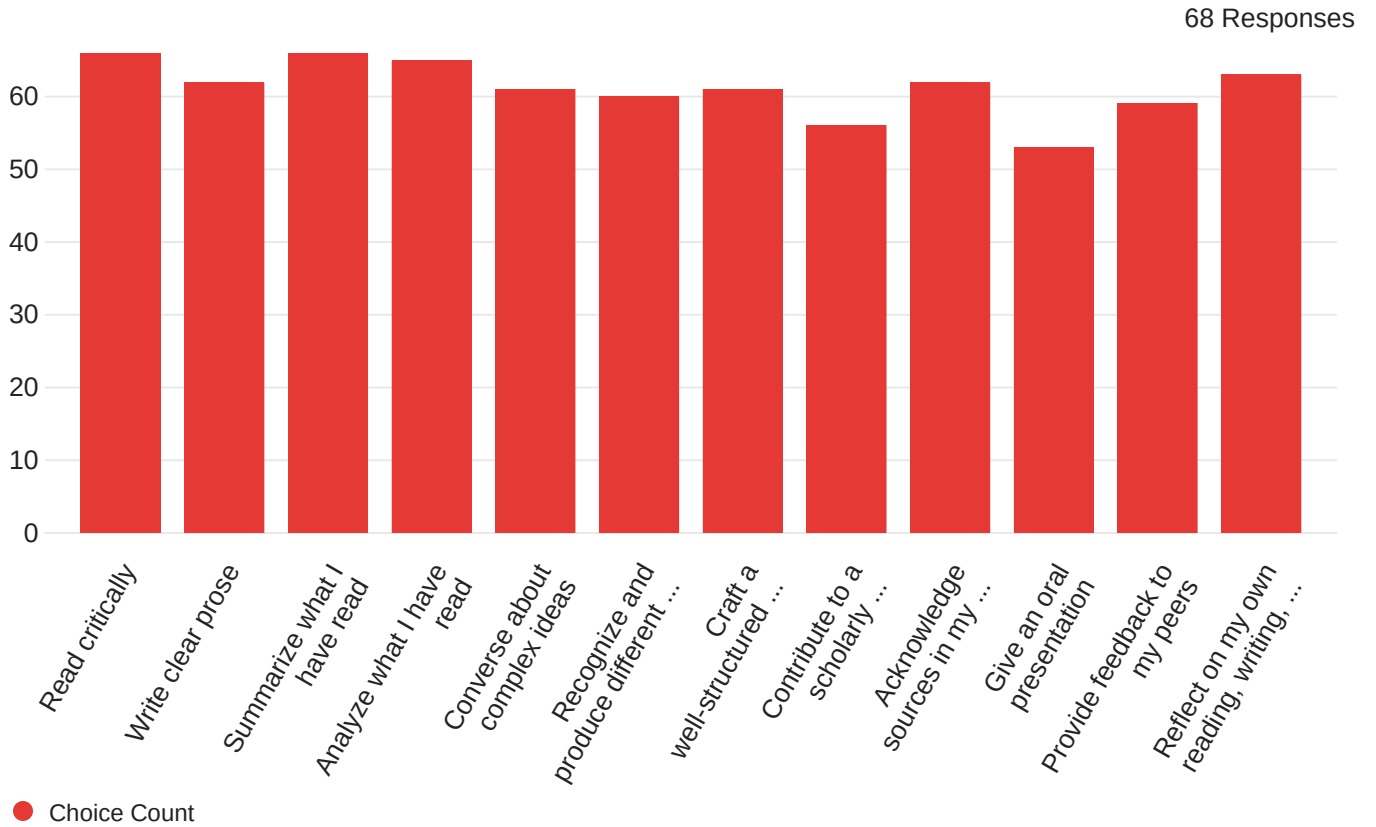
Q72 - For each genre below, choose ALL THAT APPLY:



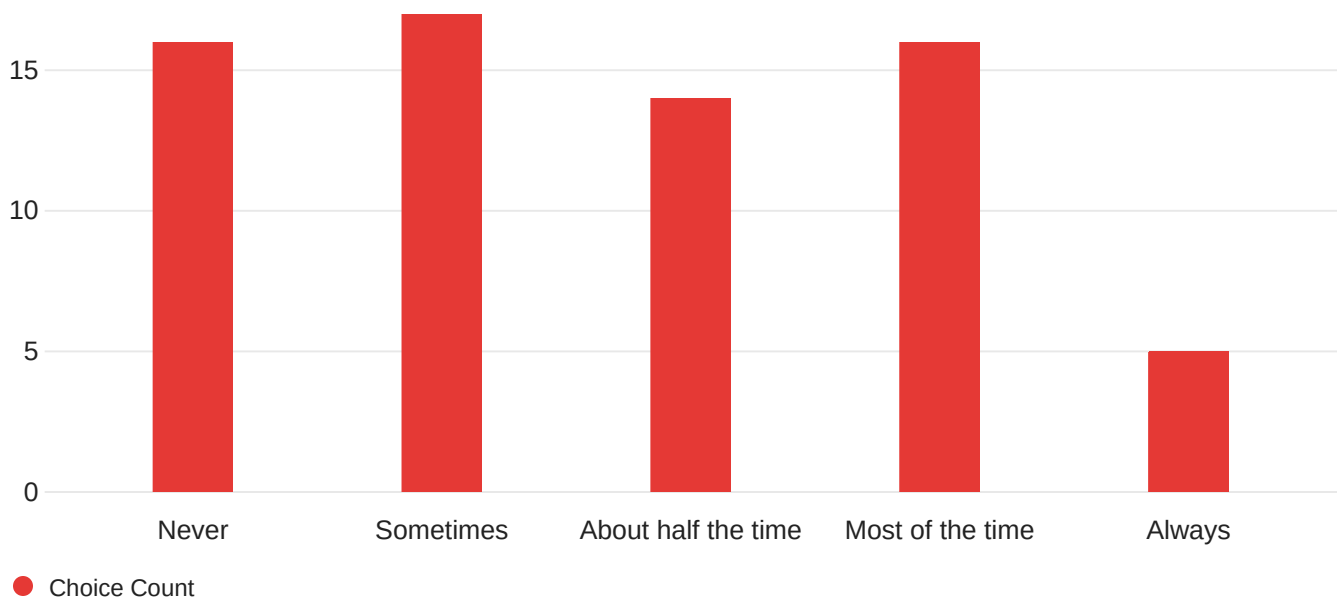
Q98 - Have you completed WR120?



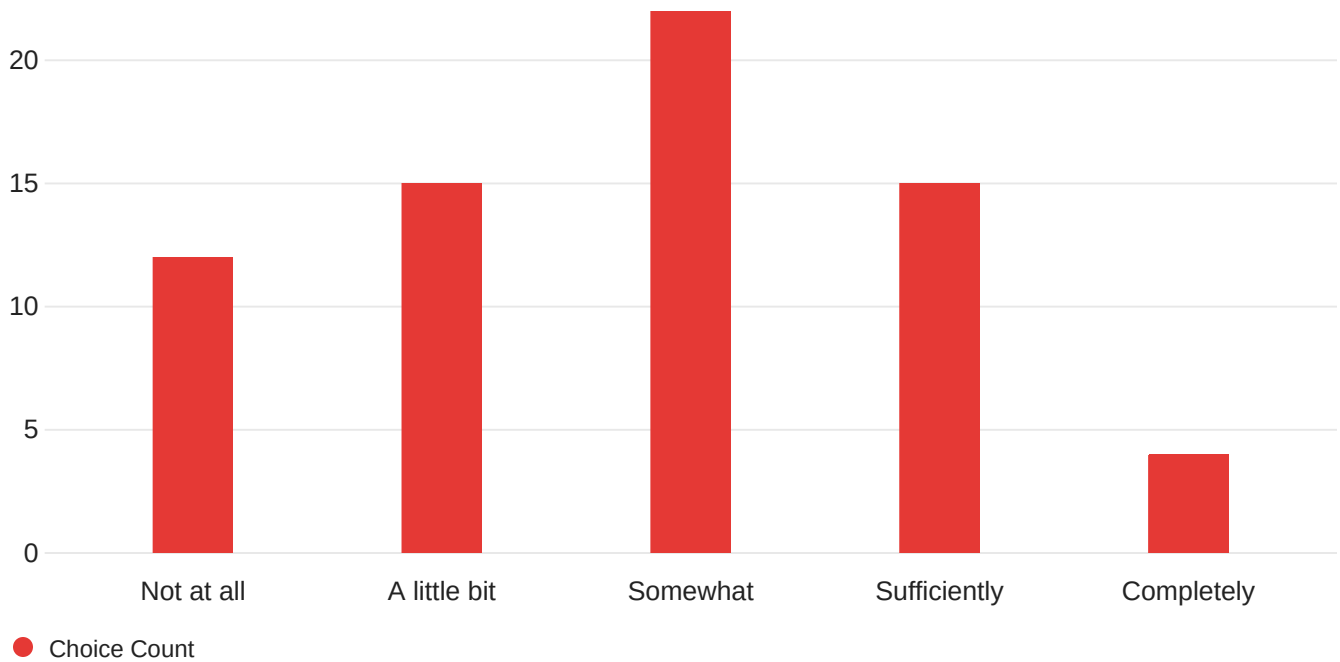
Q74_1 - After I completed WR 120, I felt prepared to: (choose ALL THAT APPLY)



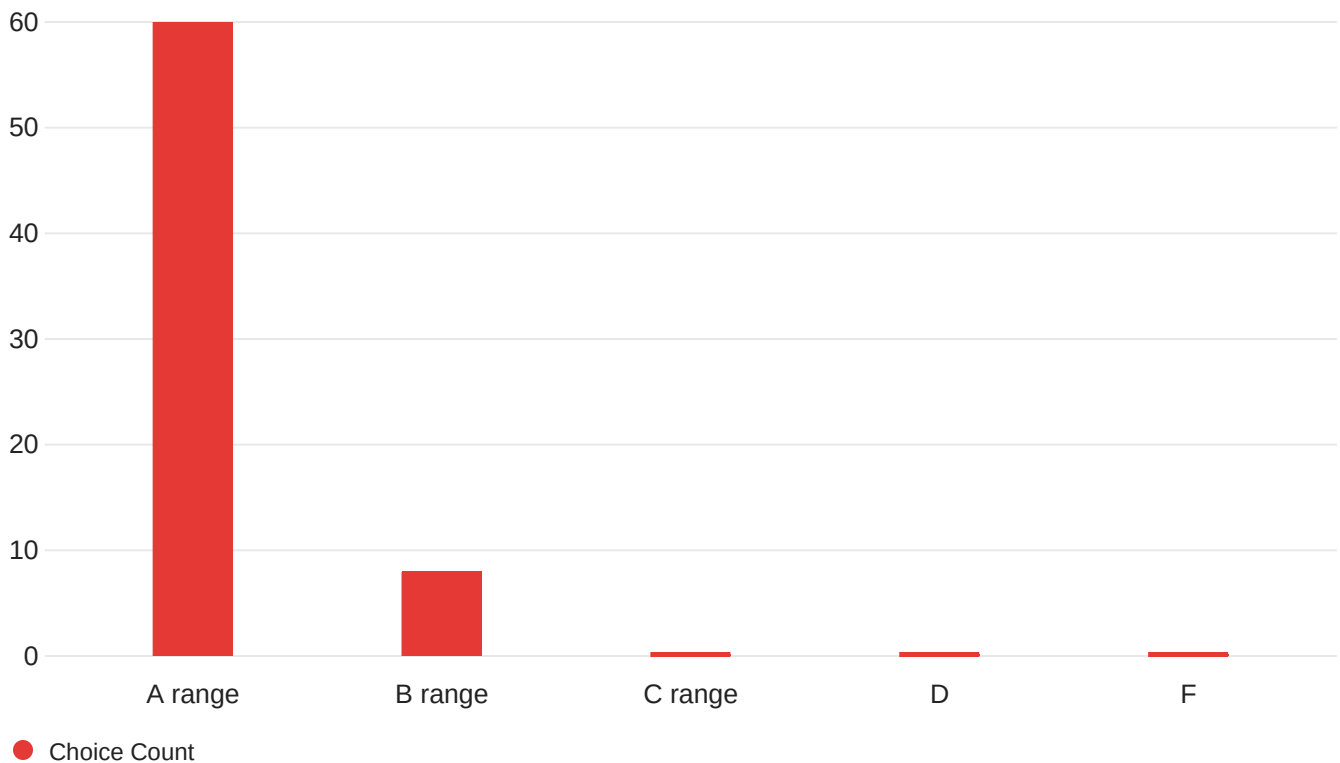
Q75 - How often have you used skills you learned in WR120 in your Neuroscience writing?



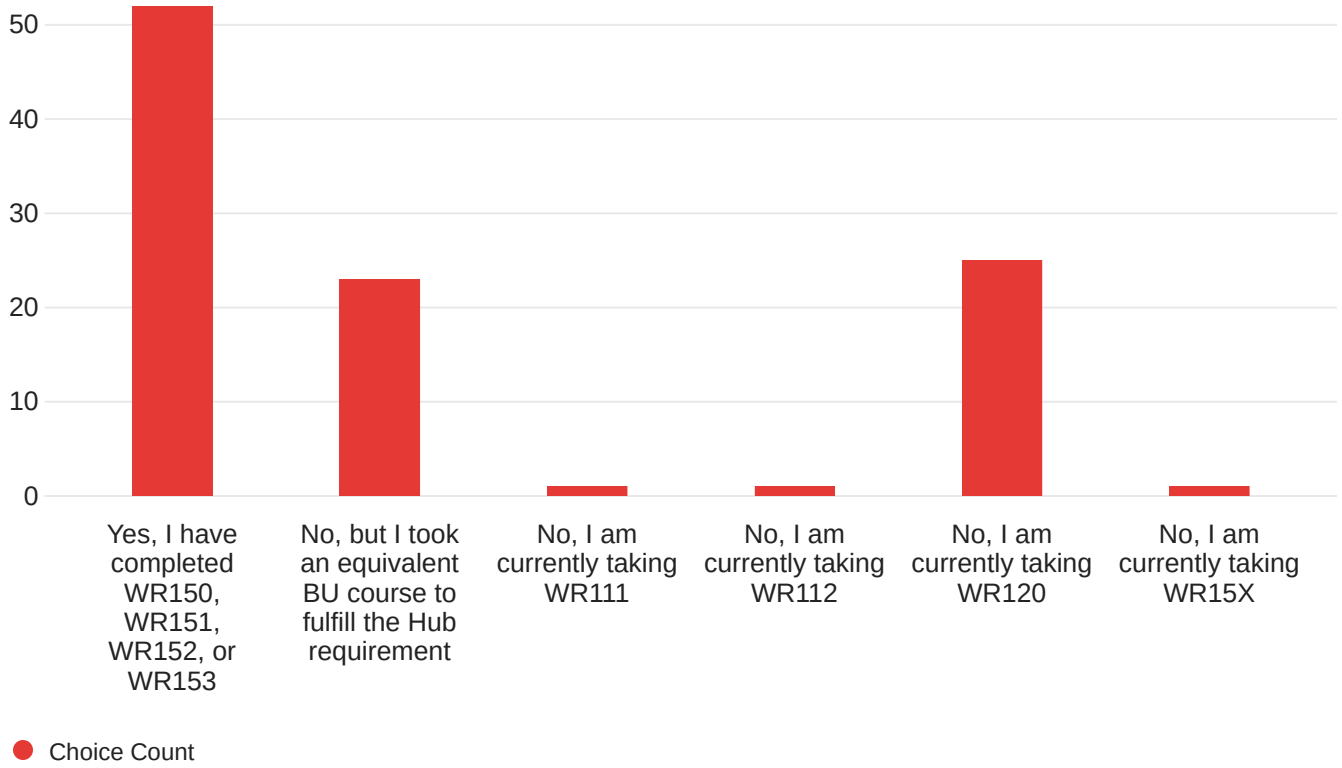
Q76 - To what extent did WR120 prepare you for writing in Neuroscience?



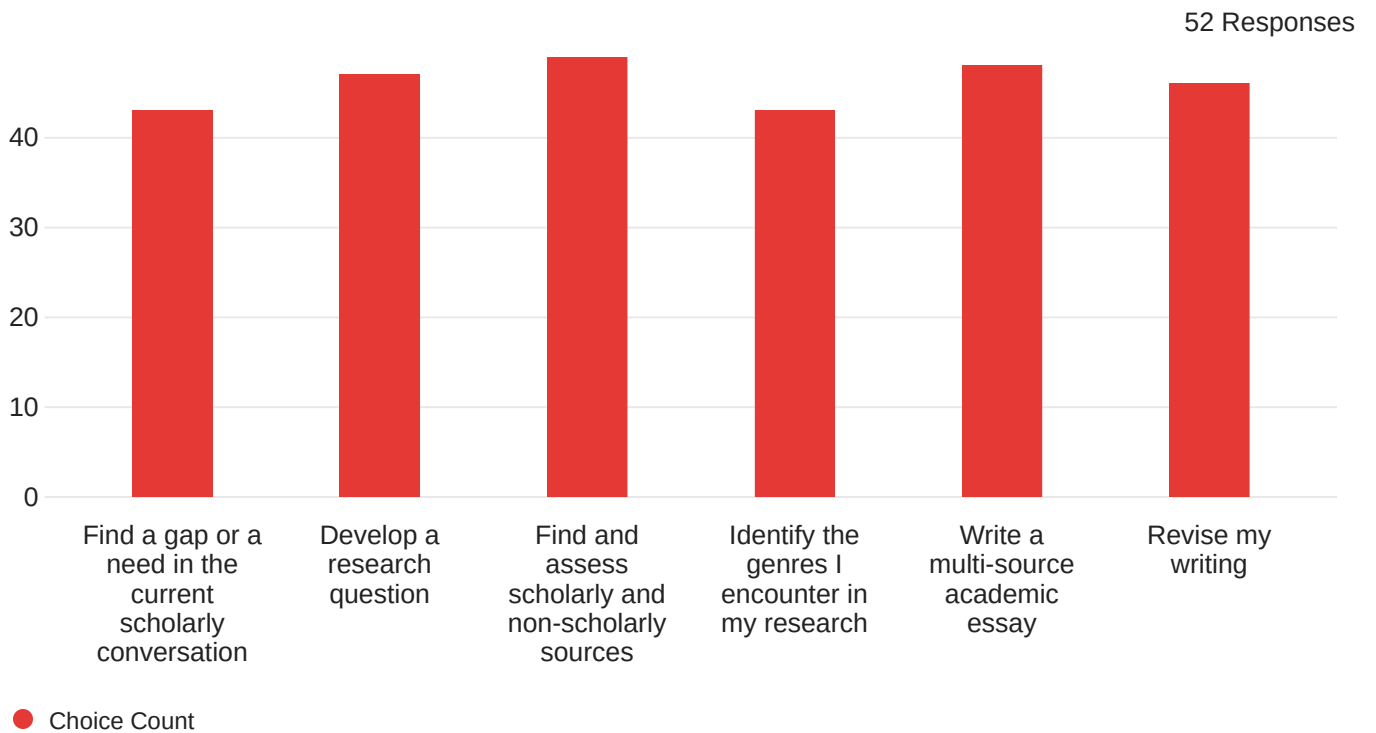
Q77 - What grade did you receive in WR120?



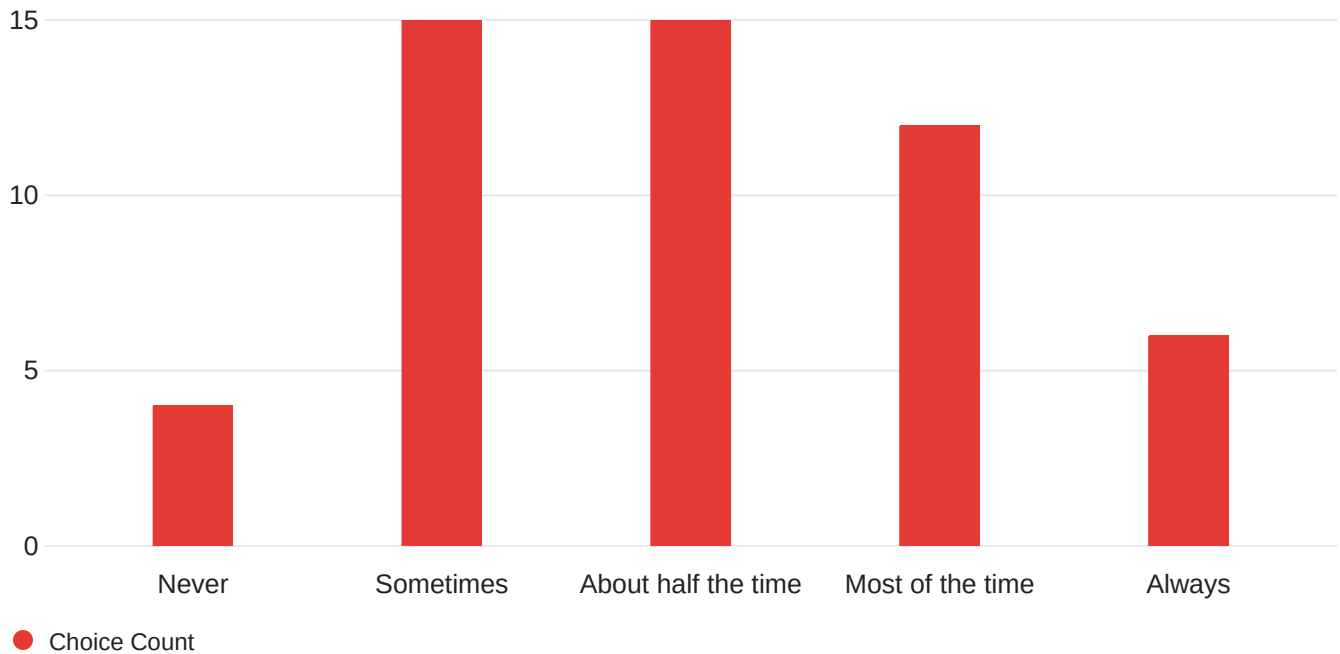
Q99 - Have you completed WR150, WR151, WR 152, or WR153?



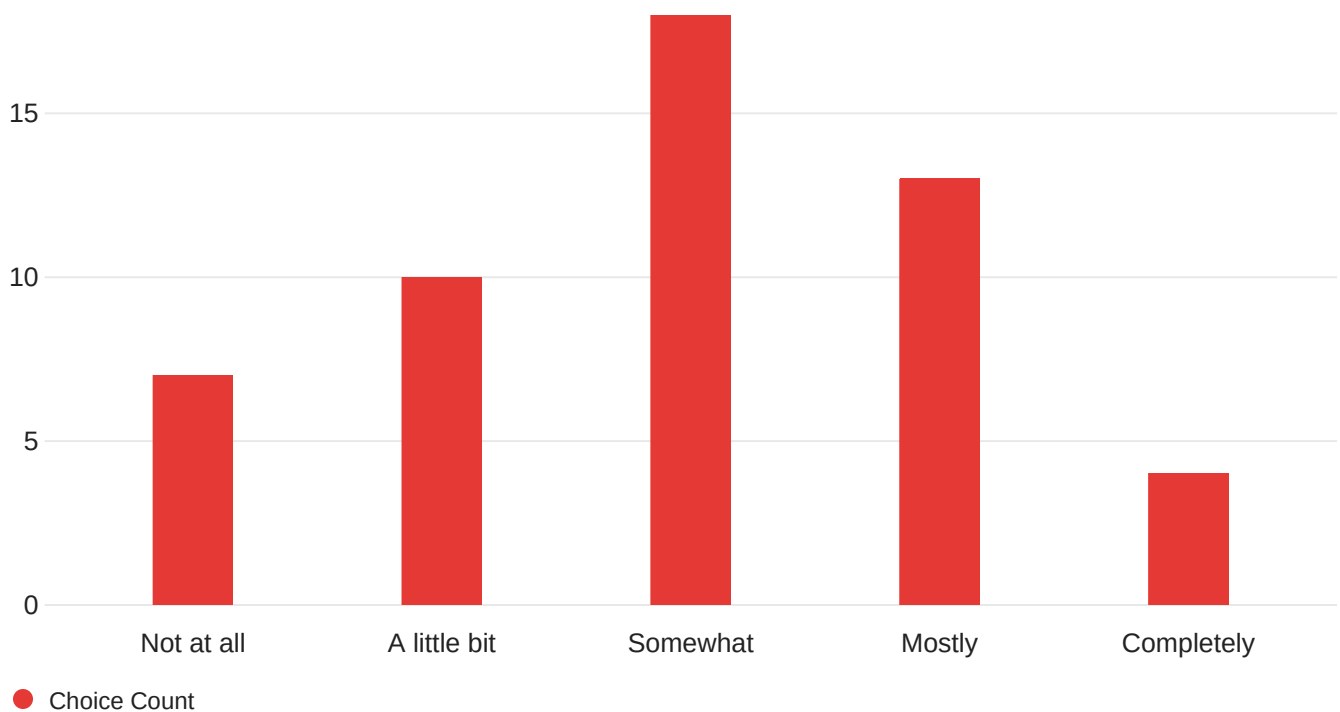
Q79_1 - After I completed WR15X, I felt prepared to: (choose ALL THAT APPLY)



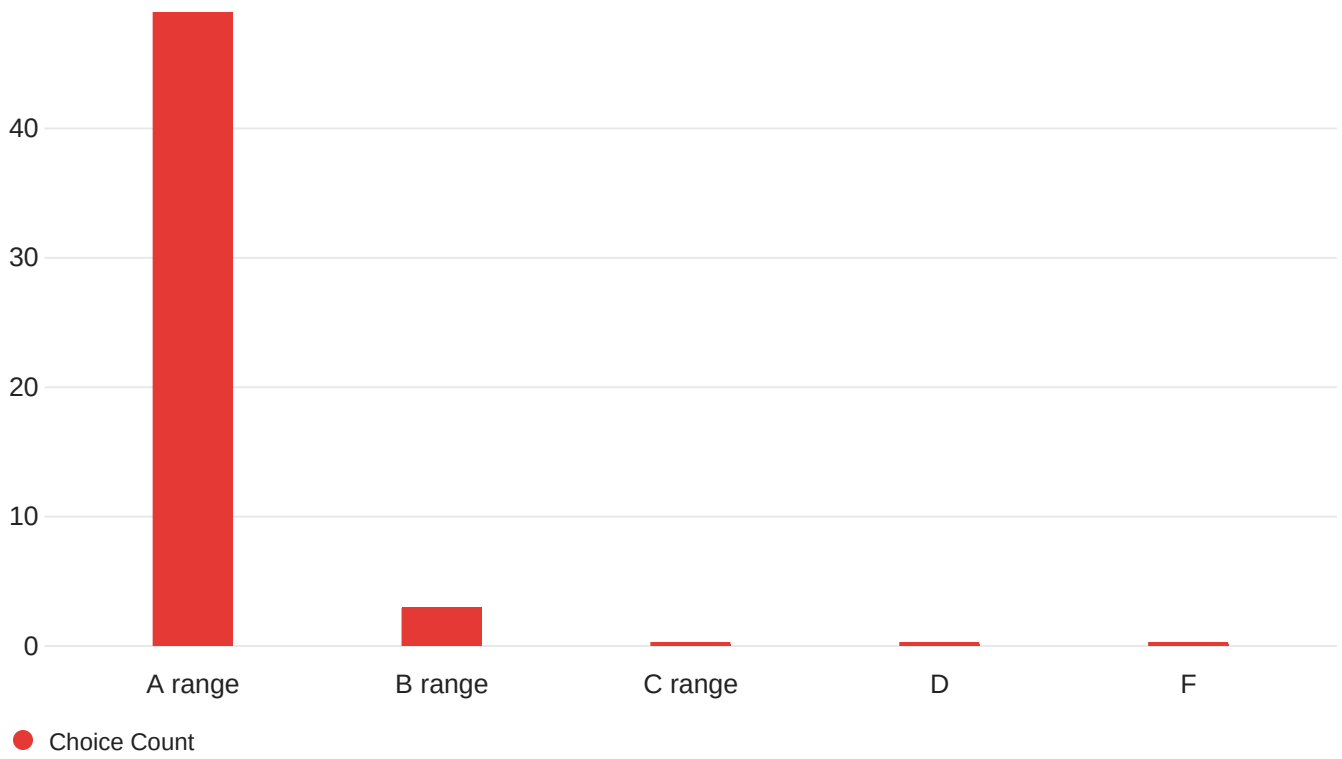
Q80 - How often have you used skills you learned in WR15X in your Neuroscience writing?



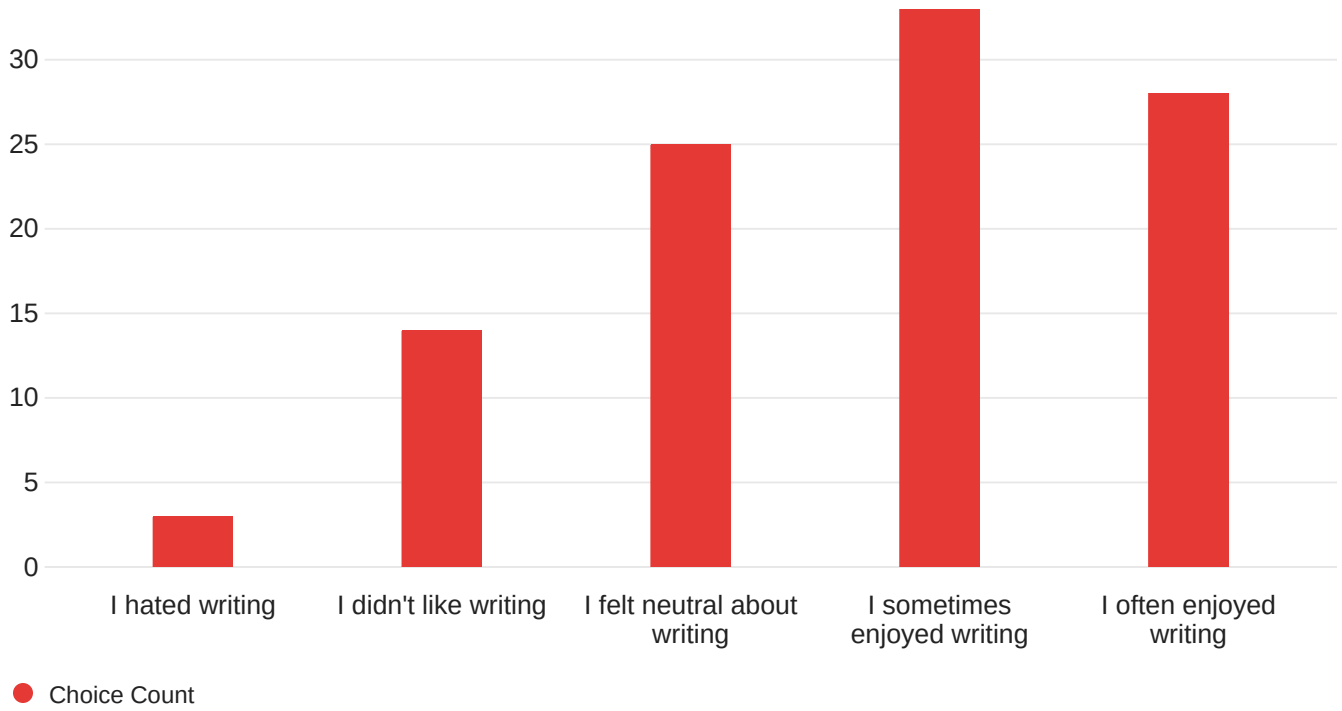
Q81 - To what extent did WR15X prepare you for writing in Neuroscience?



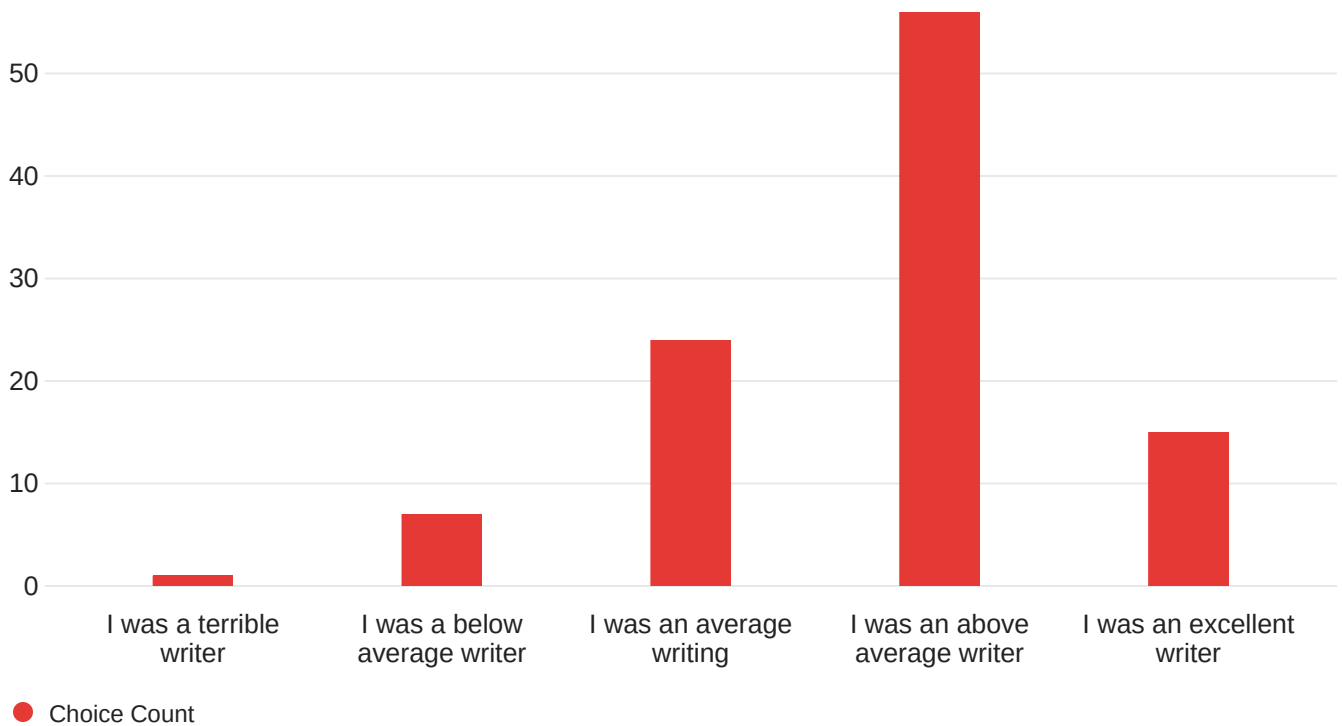
Q82 - What grade did you receive in WR15X?



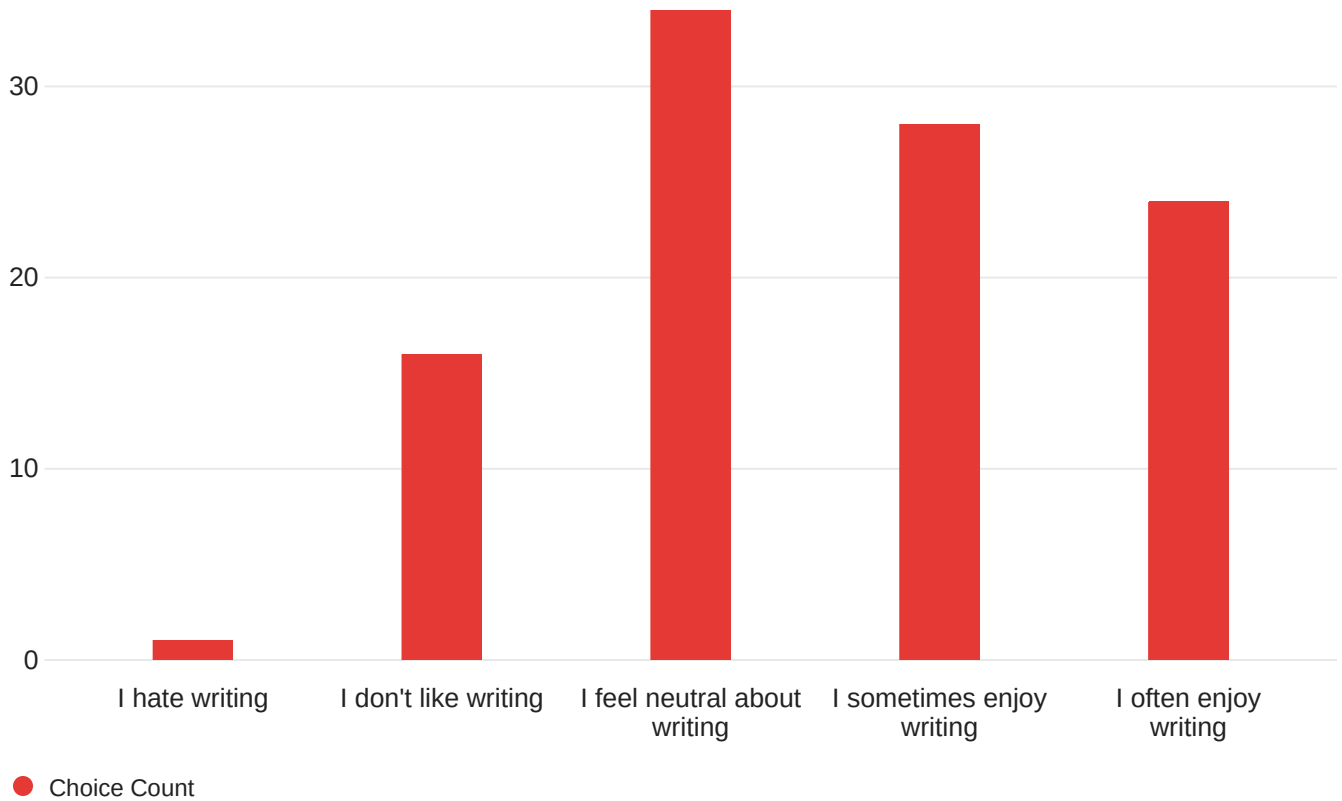
Q83 - When you graduated high school, how would you characterize your relationship with writing?



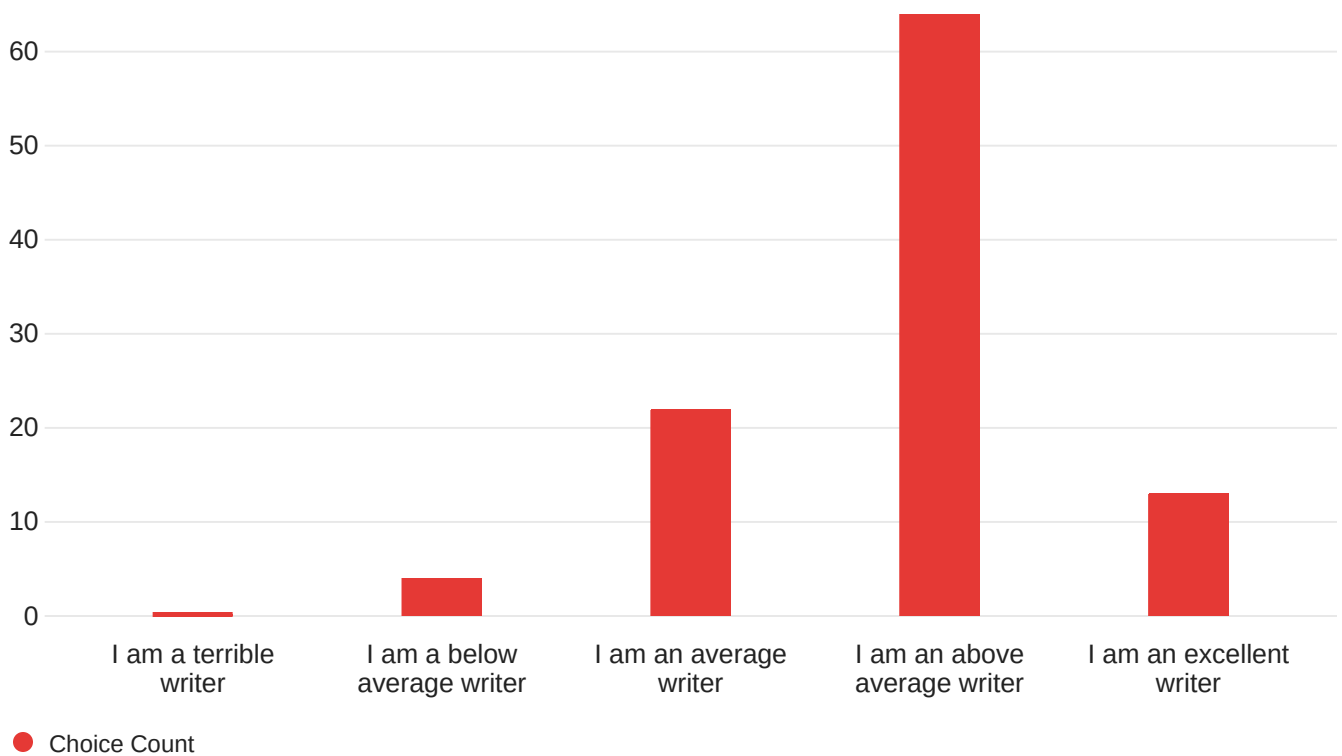
Q84 - When you graduated high school, how would you assess yourself as a writer?



Q85 - How would you characterize your relationship with writing now?



Q86 - How would you assess yourself as a writer now?



Q87 - If your answers have changed between high school and now, to what do you attribute this change?

If your answers have changed between high school and now, to what do you attribute this change?

N/A

they didn't

na

my writing 120 teacher

In high school I wrote mainly in Italian. Now I write in English. My English writing definitely improved.

Higher standards in college

Lack of time management with writing

N/a

They didn't change, but I think my writing level has increased

I have not challenged my self to improve my writing skills outside of class.

My answers haven't changed.

Feeling more confident in my writing

I haven't written in a while

I feel more comfortable writing now.

N/a

my writing 120 class

N/A

writing course & scientific writing

I practice a lot.

Write more often

n/a

Film, Literature and Philosophy

N/A

Group projects in particular are difficult to do writing for

:)

Topics i wrote about t

N/A

being in a more academically advanced environment and mostly doing scientific writing, which I had no prior experience with.

I'm just pretty tired. I know writing is necessary/important, but I see it more as an obligation rather than something I enjoy.

n/a

College writing has often been less engaging

it didnt

They haven't changed

Writing science papers as opposed to writing essays on literature

Writing reports related to neuroscience interest me much more than any other basic writing class assignments

I used to enjoy writing for fun in my free time but because I have less free time now than I did in high school, I do not do this very often anymore.

i write less overall now, and less often creatively

n/a

Sometimes it feels like more of a chore just because my overall workload has increased.

N/a

The lack of exposure and support

Practice

N/A

writing more about interesting things and that are not so formulaic like in highschool

Getting more practice and introduced to college level writing.

More perspective about the talent of writers around me

More writing practice

The different expectations between "high school-level writing" and "College-level writing." I had to unlearn a lot of things that I had learned about writing in high school for college-level writing so it felt as if I was learning how to write all over again.

N/A

I have experienced burnout since then

I haven't been able to write creatively at all in college, especially this year, so I tend to enjoy it less

The writing skills I learned in my research lab and from my philosophy major

my answer has not changed

Have done a lot of writing

N/A

NA

I still don't like it but I'm more confident in my ability and have learned some subtle things to improve the quality somewhat.

na

Practice, new information

Being able to talk to people knowledgeable in the field I am researching

N/A

N/a

Experience and writing in science is quite different from high school writings

more intense writing classes and more guidance of higher level writing

n/a

Less stress about writing.

being more exposed to different writing styles and prompts

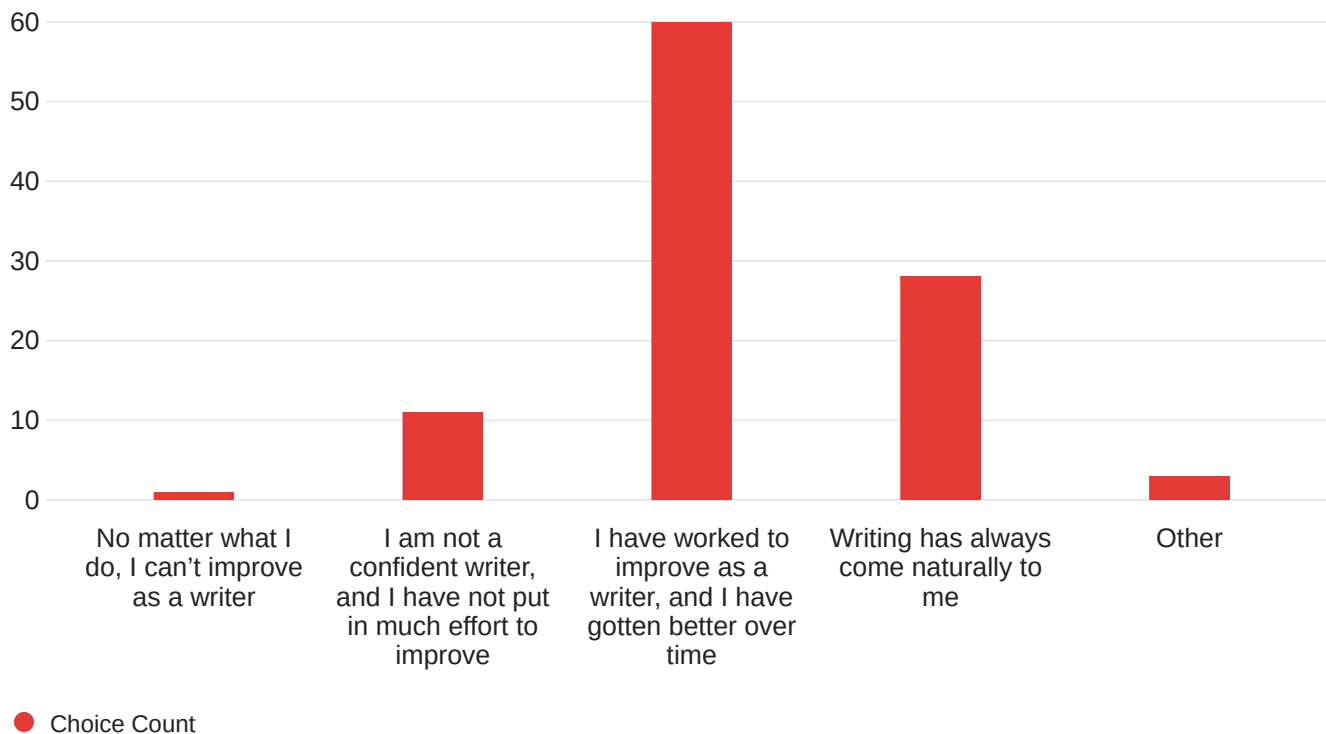
im overworked now

N/A

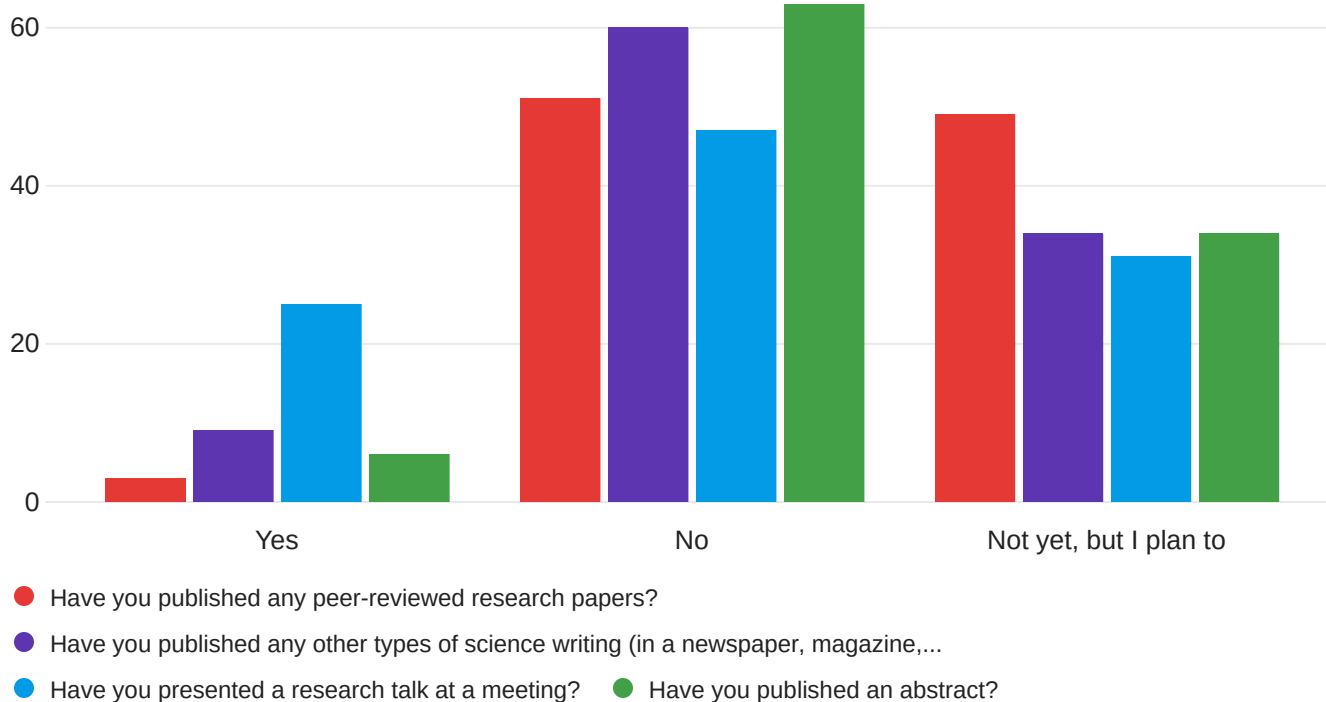
Less writing assignments in college

Exposure to academic settings

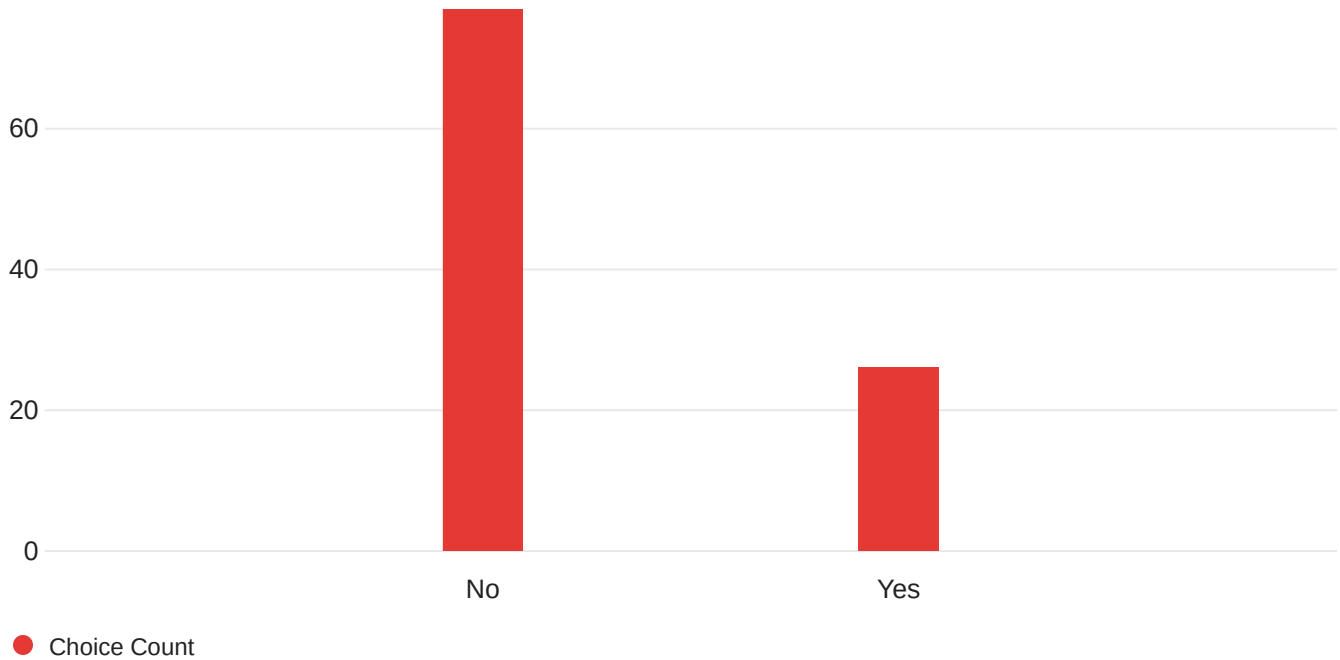
Q88 - Choose the answer that you feel most closely fits your experience:
- Selected Choice



Q89 - Respond to the following questions about your current or future publication...



Q90 - Are you willing to talk further with researchers about your experiences with writing instruction?



Q91 - If so, please enter your email address so we can contact you:

If so, please enter your email address so we can contact you:

gtatev@bu.edu

kdunson@bu.edu

Briyonce@bu.edu

Jzilic@bu.edu

Djks@bu.edu

mckenna@bu.edu

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