

NOVA Institutional Effectiveness Audit of Professional Readiness: 2019-20

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Institutional Effectiveness Audit of Professional Readiness: 2019-2020

Executive Summary

This section summarizes key findings from the Office of Strategic Insights' 2019-2020 *Institutional Effectiveness Audit of Professional Readiness*. [VCCS General Education Policy \(5.0.2\)](#) defines professional readiness as: "The ability to work well with others and display situationally and culturally appropriate demeanor and behavior. Degree graduates will demonstrate skills important for successful transition into the workplace and pursuit of further education." This audit examines data gathered from all programs and disciplines performing professional readiness (PR) assessments. This audit is used to summarize the college-wide assessment process and the evidence of student learning in professional readiness.

1. Submission and Quality of Professional Assessments
 - 51 educational programs, standalone certificates, and disciplines without degrees submitted professional readiness assessments in 2019-2020.
 - Based on the rubric used by the Office of Strategic Insights, the overall quality of 2019-2020 professional readiness assessment reports was excellent. On average, 93 percent of disciplines and programs attained a score that meets expectations (90-100 percent).
2. Sample Size and Course Embedded Professional Readiness Assessments
 - 5,403 NOVA students, across campuses and modalities, took part in the professional readiness assessment process.
 - Approximately 55 percent of educational programs and 67 percent of disciplines used existing student learning outcomes to operationalize professional readiness.
3. Operationalizing Professional Readiness
 - 80 percent of exams and 85 percent of rubrics used clearly align with the VCCS definition of professional readiness.
 - Programs and disciplines used 500 different assessment items (e.g., exam questions, sections of a rubric) to assess professional readiness in 2019-2020. The most common components of professional readiness assessed at NOVA in 2019-2020 were expertise/knowledge in the field (assessed 129 times) and application of knowledge (assessed 97 times). These components of PR are the sub-components of professional knowledge.
4. Meeting Educational Target Goals
 - 85 percent of students met or exceeded the target goals set by their program or discipline.
 - 37 disciplines and programs met or exceeded their target goals.
5. Actions to Improve Student Learning and the Assessment Process
 - Programs and disciplines implemented 230 actions to improve professional readiness assessment and student learning as a result of this year's assessment.
 - 51 percent of the actions were in the area of curricular changes.
 - 35 percent of the actions focused on assessment improvements.

Introduction

The State Council of Higher Education for Virginia (SCHEV) and the Virginia Community College System (VCCS) define general education as a core set of knowledge, abilities, and skills essential to the undergraduate curriculum to optimize student success for work and life. The six general education content areas prescribed by the Virginia Community College System (VCCS) for all system college curricula are: civic engagement, critical thinking, professional readiness, quantitative literacy, scientific literacy, and written communication. At NOVA, these crucial skills and knowledge are called core learning outcomes (CLOs). Core learning outcomes are developed in general education courses and practiced and honed in individual fields of study. The teaching and assessment of these skills and knowledge are developed throughout a student's program. Educational degree programs and disciplines without degrees at NOVA assess general education core learning competencies annually.

Prior to 2017-2018, VCCS required its colleges, including NOVA, to assess general education core competencies using standardized assessment measures chosen by the VCCS. In 2017-2018, NOVA implemented course embedded assessments, a direct measure using students' actual coursework, for CLO assessments. This decision was based on recommendations from NOVA's Ad Hoc Committee on General Education Assessment, established in 2016, and SCHEV *Policy on Student Learning Assessment and Quality in Undergraduate Education* adopted in July 2017.

The VCCS General Educational Policy (5.0.2) defines professional readiness (PR) as, "the ability to work well with others and display situationally and culturally appropriate demeanor and behavior. Degree graduates will demonstrate skills important for successful transition into the workplace and pursuit of further education." In an era where new employees often seem unaware of the hidden curriculum of work, professional readiness is an essential part of community college education.¹ This audit analyzes how well NOVA students achieved the skills and abilities associated with the professional readiness core learning outcome in 2019-2020.

The assessment of professional readiness is part of a larger three-year cycle assessing NOVA's six core learning outcomes (Table 1). Each year, the College's disciplines and programs assess at least one of two scheduled CLOs for college-wide reporting. NOVA initiated the three-year assessment cycle in 2017-2018, and that year assessed critical thinking and quantitative literacy. Professional readiness and scientific literacy were assessed for the first time in 2019-2020.²

¹ Gen Z new employees often ghost their jobs in the same way they ghost relationships. This is an indicator that they do not understand the hidden curriculum of work. *In A Hot Labor Market, Some Employees Are 'Ghosting' Bad Bosses* Nat'l Public Radio (July 2019); Kelve Brown *et al* *Promotion of New Working Environments -Flexible Worktime/Place*. Journal of the Academy of Business and Economics 19.1.(2019).

² Information on the scientific literacy assessment may be found in the *Institutional Effectiveness Audit of Scientific Literacy: 2019-2020*.

Table 1. Core Learning Outcome Assessment Schedule 2017-2018 to 2022-2023

Core Learning Outcome	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Assessment Phase →	Complete	Complete	Complete	Data Collection	Preparing	Not Started
Civic Engagement		X			X	
Critical Thinking	X			X		
Professional Readiness			X			X
Quantitative Literacy	X			X		
Scientific Literacy			X			X
Written Communication		X			X	

All educational programs' and disciplines' *CLO Reports* address four broad areas of the assessment process: the learning outcome that was assessed; the assessment method; the assessment results; and how the results will be used to continuously improve student learning (Table 2).

Table 2. Reporting Areas for Annual Planning and Evaluation Report and The Core Learning Outcomes Report ³

SLOs, CLO, and Program Goals	Assessment Methods	Assessment Results	Use of Results
<i>What was assessed?</i>	<i>What methods were used? Who was assessed?</i>	<i>When did the assessments take place? What were the results? Have the results improved over time? What areas need improvement?</i>	<i>What actions have been implemented in the past to improve student learning? What actions will be taken in the future to improve student learning based on the results of the assessments?</i>

This *Institutional Effectiveness Audit of Professional Readiness: 2019-2020 Report* describes and analyzes the assessment reports provided to the Office of Strategic Insights by NOVA's educational programs and disciplines without degrees. This report is divided into five sections:

- Section I discusses educational programs' and disciplines' participation in the 2019-2020 professional readiness assessment and the quality of assessment reporting
- Section II reviews examples of how educational programs, standalone certificates, and disciplines operationalized professional readiness and analyzes the impact of sample sizes
- Section III describes the achievement targets established by disciplines and programs
- Section IV highlights the changes made in assessment and student learning
- Section V concludes the report.

³ Programs submit a full *Annual Planning and Evaluation Report*, while disciplines submit an attenuated version (only one SLO and one CLO) called a *Core Learning Outcome Report*. For purposes of reading clarity, *CLO Report* will be used to refer to both documents.

Section I: Submission and Quality of Professional Readiness Assessments

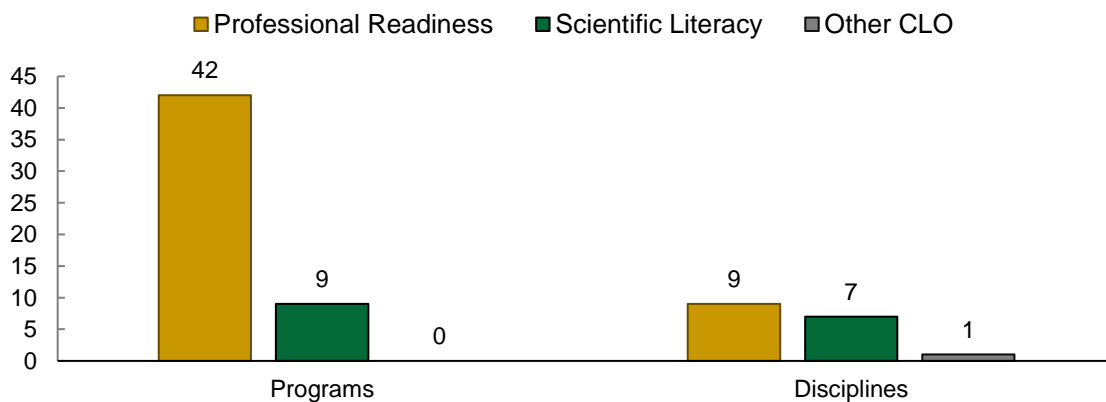
A. Submission of Reports

In 2019-2020, programs and disciplines could choose between assessing professional readiness or scientific literacy. Despite the disruption in education and assessment caused by COVID in Spring 2020, 42 educational programs and nine disciplines without degrees assessed professional readiness (Figure 1).

Participation was not limited to the programs and disciplines involved in the General Education curriculum at NOVA. All college bound programs and disciplines, applied/terminal programs, and the Medical Education Campus participated in the assessment of professional readiness. The compiled [Professional Readiness Core Learning Competency Assessment Report: 2019-2020](#) containing these assessment documents can be found on the Office of Strategic Insights' webpage.

Figure 1 illustrates the number of programs and disciplines assessing professional readiness and scientific literacy.⁴ For more information about the scientific literacy assessment, see the [Scientific Literacy Core Learning Competency Assessment Report: 2019-2020](#).

Figure 1. Programs and Disciplines Assessing Core Learning Outcomes: 2019-2020



B. Quality of Assessment Reporting by Programs and Disciplines

The Office of Strategic Insights evaluated the quality of the 51 educational programs' and disciplines' professional readiness assessment reports using a rubric to score each section of their reports: (1) how disciplines and programs operationalized the core learning outcome, (2) the assessment method used, (3) the assessment results, and (4) how the results were used to improve student learning and/or the assessment process.⁵ The rubric awards points for the quality of reporting in each of these four sections. The sections are broken down into several sub-sections, to create clarity for the program or discipline receiving the report. Points are awarded for addressing the variety of components of the report: two points for meeting the requirement, one point for partially meeting it, and zero points for not meeting the requirement.

⁴ An additional CLO assessment, on civic engagement, was conducted by Political Science.

⁵This data set includes the four multidisciplinary degree reports (Liberal Arts, Social Sciences, General Studies, and Science). To avoid counting data twice, some tables and figures do not include the multidisciplinary degree data, as they are a composite of discipline reports already in evidence. This is noted with the relevant tables and figures.

Based on the total points and resulting overall percentage score, reports are classified by performance: meeting expectations, mostly meeting expectations, partially meeting expectations, and not meeting expectations (Table 3).

Table 3. Quality of Reporting in the Core Learning Outcome Reports: Rubric Scale

Score on Rubric	Color	Performance Level
90%-100%	Dark Green	Meeting expectations
80-89%	Light Green	Mostly meeting expectations
70%-79%	Yellow	Partially meeting expectations
Below 70%	Red	Not meeting expectations

For the 2019-2020 assessments, disciplines and programs scored in the top two performance levels on their Professional Readiness Core Learning Outcomes Reports, meeting expectations and mostly meeting expectations, as displayed in Table 4. These numbers indicate a high level of success in this third year of CLO assessment at NOVA as well as a commitment to useful data collection, analysis, and subsequently, improving the assessment culture.

Table 4. Professional Readiness Assessment Rubric Results: 2019-2020

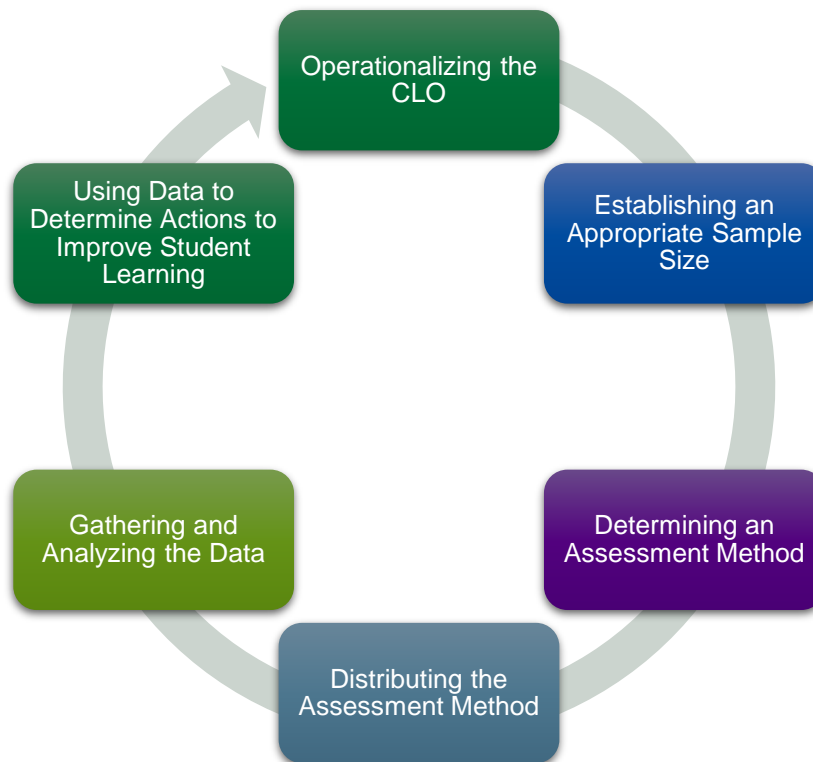
Area of the Report	Educational Programs	Disciplines Without Degrees	Programs and Disciplines
CLO Criteria	97.6	87.5	92.6
Assessment Methods	97.1	89.3	93.2
Results	96.4	92.6	94.5
Use of Results	93.0	91.1	92.1
TOTAL	96.0	89.5	92.7

Section II: Course Embedded Assessments

Examining core learning outcomes using course embedded assessment relies on educational programs' and disciplines' ability to align the VCCS definitions of the core learning outcomes with an appropriate course assignment and effectively operationalizing the CLO. Some disciplines and programs use existing student learning outcomes (SLOs) to assess different core learning outcomes (Figure 2). Faculty consult their curriculum map, which indicates the courses that address the SLOs and CLOs assessed each year. After determining the course most closely aligning with the CLO being assessed, faculty operationalize the CLO to reflect the skills or abilities expected in the selected course(s).

An effective CLO assessment cycle includes: operationalizing the CLO; establishing an appropriate sample size across courses, campuses, and modalities (i.e., on campus, online, hybrid, or off-site dual enrollment); determining the assessment method; distributing the assessment to faculty teaching the selected course sections; gathering and analyzing data; and making decisions about actions to take to improve student learning and the assessment process based on the assessment results (Figure 2). This latter part can be referred to as closing the loop but includes two additional aspects: writing the report and disseminating this information to the program/discipline faculty. To implement this cycle of assessment, discipline chairs and assessment leads rely on their full-time and part-time faculty, deans, and other administrators.

Figure 2. The Assessment Process Cycle



A. Operationalizing Professional Readiness

Programs and disciplines begin with the VCCS definition of professional readiness, and then operationalize the CLO to reflect the skills and competencies taught in their courses. Disciplines and programs may consult the Office of Strategic Insights to ensure that the operational definitions appropriately align with the VCCS definitions (see Appendix B, Tables 1 and 2). What follows are examples of program and discipline operational definitions of professional readiness, using current student learning outcomes:

World Languages: “Students will identify culturally and situationally appropriate expressions to use in dialogues featuring speaking in a professional setting.”

Drivers Education, Certificate: “Students will be able to create a competent classroom lesson plan for Driver Education students under the age of nineteen.”

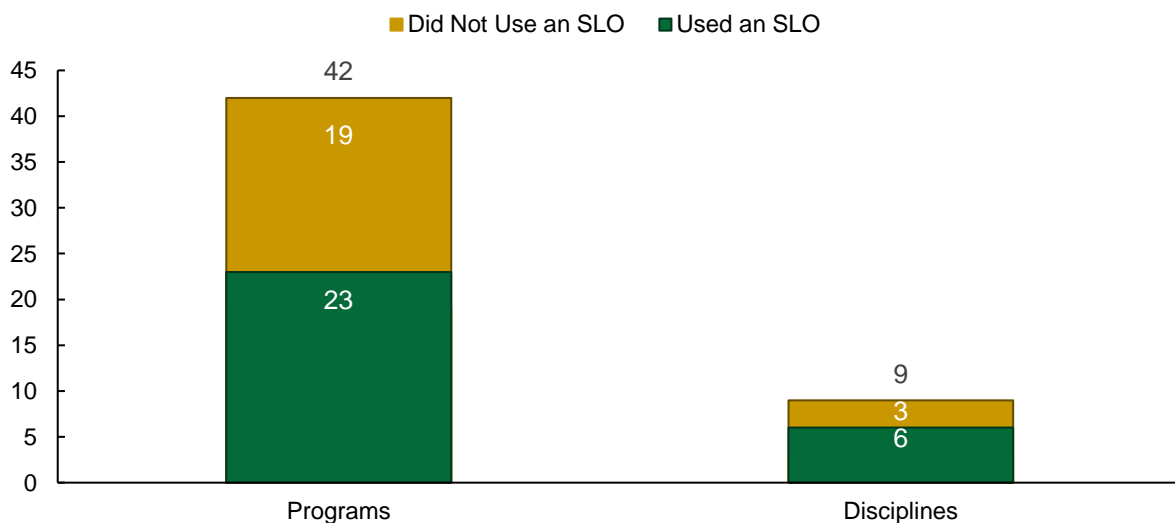
Substance Abuse Rehabilitation, Certificate: “Prepare information for use with a client that includes facts about the disease, potential for relapse, and codependency.”

Biotechnology, A.A.S.: “Effectively communicate scientific concepts, strategies, and opinions and present it to their peers.”

As the examples above indicate, disciplines and programs sometimes use existing student learning outcomes to assess college-wide core learning outcomes. In 2019-2020, approximately 55 percent of educational programs and 67 percent of disciplines used one of their student learning outcomes to operationalize professional readiness (Figure 3). This indicates that these assessments of PR have been completed in the past and/or will be assessed in the future.

Currently, disciplines and programs have over 320 student learning outcomes related to professional readiness, and interestingly, all programs and disciplines have at least one student learning outcome related to professional readiness. The widespread existence of professional readiness SLOs, and the significant use of SLOs to assess professional readiness (PR) during the 2019-2020 assessment cycle, indicates a high degree of integration of college-wide learning goals at the program and discipline level.

Figure 3. Professional Readiness Assessments Operationalized Using a Student Learning Outcome

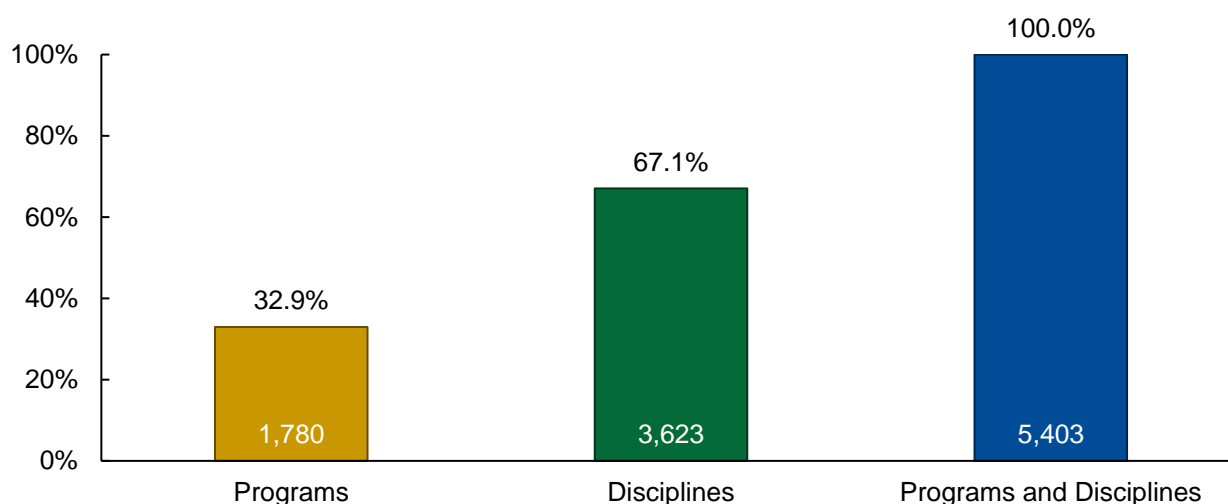


B. Sample Sizes

At NOVA, the faculty choose appropriate course(s) to assess each core learning outcome. If a program or discipline chooses a course with a small number of class sections, it is customary to assess all sections. If the course has multiple sections (10+), disciplines and programs ask the Office of Strategic Insights to create a sample from a representative sub-set of courses offered across all campuses/modalities of the College. This sample typically equates to approximately one third of the total sections offered.

The assessment of professional readiness involved 5,403 students in 2019-2020⁶ (Figure 4). Approximately 33 percent of those students were assessed in their educational programs and 67 percent of students were assessed in a discipline course. In Spring 2020, 46,419 students were enrolled at NOVA.⁷ This means that nearly 12 percent of NOVA students participated in professional readiness assessment in Spring 2020.

Figure 4. Professional Readiness Student Sample



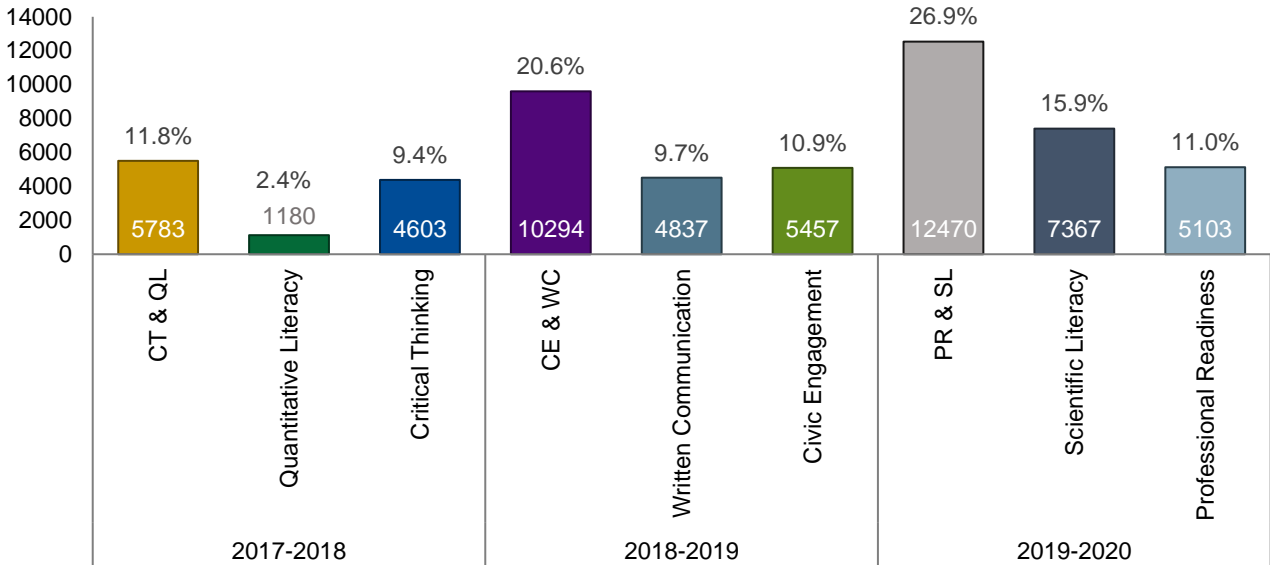
2019-2020 saw the completion of NOVA's first complete cycle of core learning outcomes assessment. All six core learning outcomes were assessed in this three-year period. As Figure 5 indicates NOVA has had an upward trajectory with regard to the number and percentage of NOVA students participating in CLO assessments. The 2019-2020 CLO assessments included 12,770 students (5403 in professional readiness and 7367 in scientific literacy); an increase of 2,476 students from the previous year.⁸ The 2017-2018 assessment of CLOs assessed 12 percent of the student population, while 2018-2019 assessment of CLOs captured just over 20 percent of the student population, and the 2019-2020 CLO student sample size increased to approximately 27 percent of the student population (Figure 5).

⁶ The Student Development (SDV) student sample (2,266 students) is included in all calculations in this report, except those regarding target data. Student Development, using a new method, did not provide a target score during this round of PR assessment.

⁷ Data on student enrollment can be found in the NOVA Fact Book.

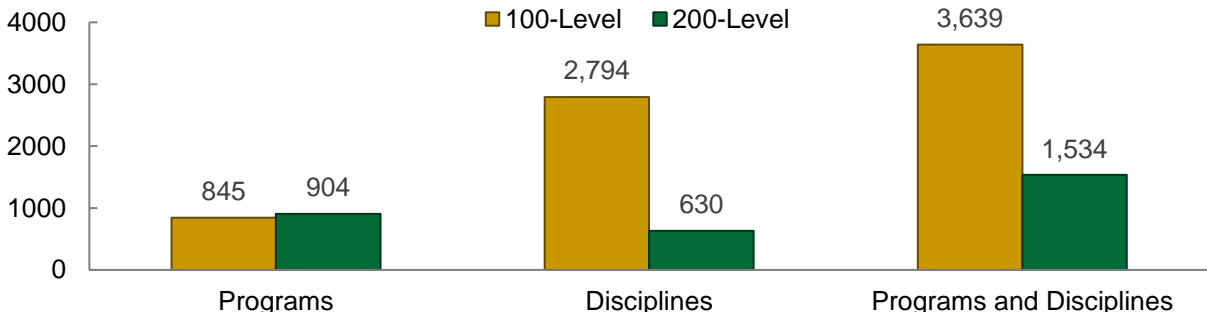
⁸ The Office of Strategic Insights recognizes that there may be some overlap between assessments; specifically, we may occasionally assess the same student in two different PR, or SL (etc.) assignments. As we don't ask for student identification numbers from most programs and disciplines, we cannot determine the exact level of overlap, but we assume it is small.

Figure 5. Student Sample Size by Core Learning Outcome: 2017-2018 to 2019-2020



Disciplines and programs can choose what courses to use for each CLO assessment. The Office of Strategic Insights categorizes CLO assessments into two categories: those conducted in 100-level and 200-level courses. The majority of CLO assessments take place in 100-level courses. In 2019-2020, this distinction is especially notable for the professional readiness assessment. Just over 600 students were assessed at the 200-level by disciplines, while at the 100-level, 2,794 students were assessed (Figure 6). Programs had a much more even distribution with 845 students assessed in 100-level courses and 904 assessed in 200-level courses (Figure 6). In total, 3,639 students were assessed in 100-level courses and approximately half that number (1,534 students) in 200-level courses.

Figure 6. Professional Readiness Student Sample Size by Course Level and by Program and Discipline⁹



The average number of students assessed in 100- and 200-level courses offers insight into current assessment practices. Disciplines' 100-level courses tend to have a larger number of

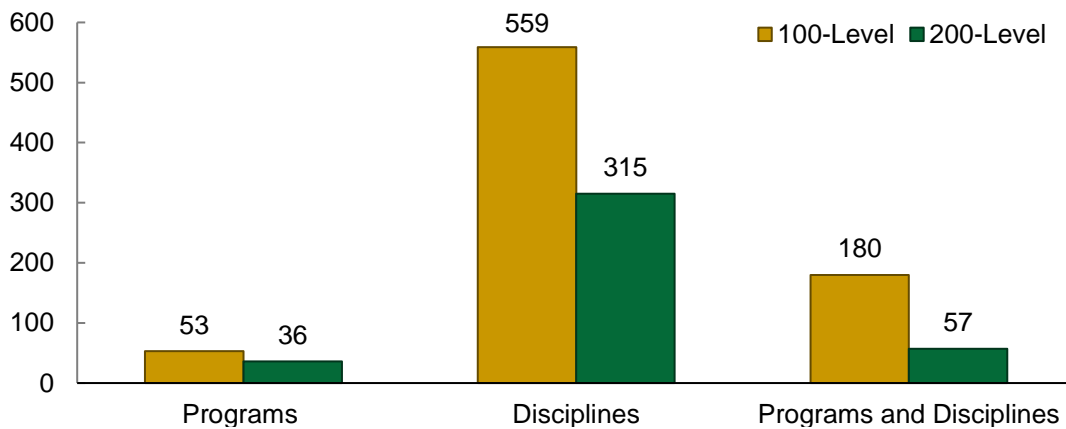
⁹ EMS and Religion assessed students in 100 and 200-level courses. They did not disaggregate this data by course level. Therefore, their student samples are not considered in the target data tables disaggregated by course level.

students since they typically transfer as general education requirements to four-year institutions. In 2019-2020, the average number of program-enrolled students assessed for PR was 180 students at the 100-level and 57 students at the 200-level (Figure 7). Breaking this down, discipline courses assessed an average of 559 students across all course sections in the 100-level courses while programs assessed an average of 53 students in their 100-level courses.

Meanwhile, 200-level courses tend to have a smaller number of students as the focus shifts to practicing and mastering the skills learned in the 100-level courses; this is predominantly seen among programs rather than disciplines. The average number of students assessed by the disciplines in 200-level courses is still higher when compared to the program averages.

Disciplines assess an average of 315 students per course at the 200-level, while programs averaged 36 students per course at the 200-level (Figure 7).

Figure 7. Average Professional Readiness Student Sample Size by 100 and 200-Level Courses by Program and Discipline



Section III: Measuring Student Achievement in Professional Readiness

Course embedded assessment requires a minimum threshold of success to demonstrate student learning. At NOVA, this minimum threshold, or target goal, is determined by the faculty of each educational program and discipline using a variety of measures: national certification exams; standards determined by state licensing agencies or accrediting bodies; criteria designed by the discipline’s national association body (e.g., [The American Chemicals Society’s Guidelines for Lab Safety for Chemistry](#)); or by faculty using their professional expertise.

Target goal thresholds are commonly set at a student performance level of 70 percent or better on an assignment or exam. Success regarding target goals signals student achievement of the competencies being assessed. For CLO assessments, it also signals college-wide student learning in the general education competencies outlined by VCCS. The College aggregates program and discipline student data, across all campuses and learning modalities, to examine student performance on a given CLO. The target goal data is shared with faculty and the public via NOVA’s website, campus TV monitors, working groups, the campus-wide Daily Flyer, workshops, and email distributions. The Office of Strategic Insights also encourages faculty to share this data during program and discipline meetings.

Section III focuses on: (a) the methodologies used to assess professional readiness (e.g., how programs/disciplines assessed this CLO and the effectiveness of their assessment method), and (b) how, and to what degree, programs, disciplines, and students met the target goals.

A. Methods for Assessing Professional Readiness

Programs and disciplines use a variety of definitions and methods to assess students’ professional readiness (PR) skills. In order to analyze professional readiness assessments college-wide, the Office of Strategic Insights collated the data from all PR assessment measures (e.g., assignment descriptions, exams, and rubrics), noting key terms used. Eight sub-components of PR emerged and were then categorized into two broad components: professional knowledge and professional skills and abilities. From an analysis of professional readiness assessments across the College, the following components of professional readiness were identified (Table 5).

Table 5. Major Categories Used to Operationalize Professional Readiness

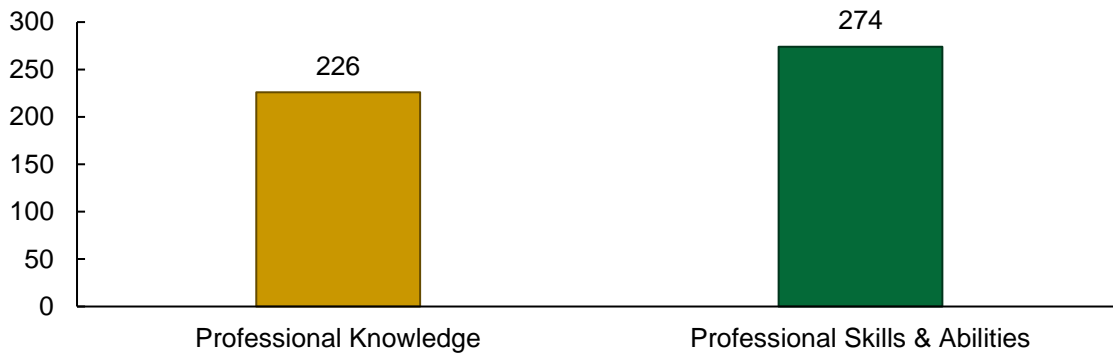
Component	Description
Professional Knowledge	<i>Expertise/Knowledge in the Field</i> Students’ knowledge of concepts/ideas/theories related to the field with the expectation that the student will be able to utilize it in practice.
	<i>Application of Knowledge</i> Students’ ability to apply concepts/theories/ideas into practice through scenarios, practicums, observatory assessments, etc.
Professional Skills and Abilities	<i>Oral Presentation</i> Students’ ability to effectively present information, which may include: <ul style="list-style-type: none"> • the ability to use claims and evidence with a particular audience in mind • use of supportive material • organization of content and/or effective delivery
	<i>Writing Skills</i> Students’ ability to communicate clearly in writing, which may include: <ul style="list-style-type: none"> • effectively employing writing mechanics

	<ul style="list-style-type: none"> • conveying key ideas • posing claims supported with credible evidence • disputing alternative ideas
	<p><i>Leadership</i> How well students exhibit leadership skills, which may include:</p> <ul style="list-style-type: none"> • creating a vision for the team • guiding the team to reach a goal • delegating tasks
	<p><i>Teamwork</i> Students' ability to work collaboratively with a team, which may include:</p> <ul style="list-style-type: none"> • how well and how often he/she encourages others to share their opinions/ideas • using the skills, abilities, and knowledge of their team members effectively (collaborating) • not manifesting signs of prejudice or favoritism when managing the team • speaking respectfully with team members • contributing value to the project
	<p><i>Time Management</i> Students' ability to manage their time, whether for an individual project, exam, or group project, which may include:</p> <ul style="list-style-type: none"> • performing a task or set of tasks in a given timeframe • preparing an effective oral presentation with a time limit • completing an exam or practicum in a specified amount of time
	<p><i>Analysis</i> Students' ability to</p> <ul style="list-style-type: none"> • analyze a situation/issue in a professional setting • decipher whether sources are credible • create practical solutions to workplace problems

The professional readiness assessments employed by disciplines and programs were coded using the categories of components listed above. Each item (exam question, element on a rubric) relating to PR assessment was coded using the Table 5. Therefore, the number of items categorized as professional readiness is greater than the number of assessment methods used to assess PR. For instance, students must utilize 29 different professional readiness skills and knowledge to successfully meet the Driver's Education's target goals: knowledge in the field (5 elements), application of knowledge (4), oral presentations (5), writing skills (8), leadership (1), teamwork (1), time management (2), and analysis (3).

Across all rubrics and exams, 500 instances of professional readiness skills and knowledge were coded. Items were coded as professional knowledge 226 times, and items were coded as professional skills and abilities 274 times (Figure 8).

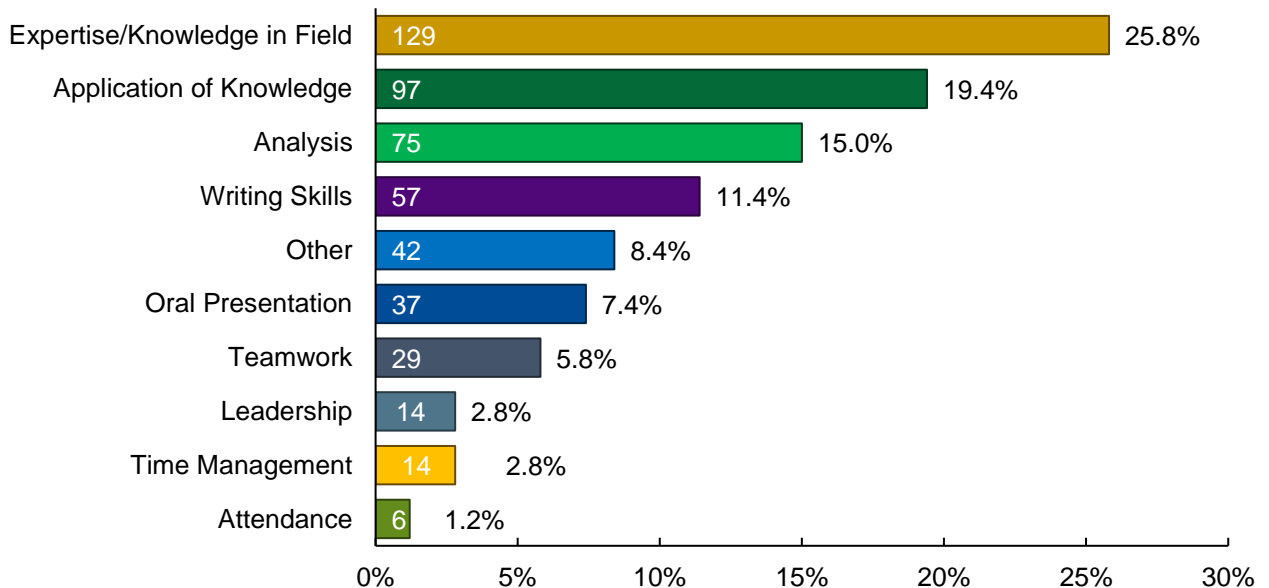
Figure 8. Number of Professional Readiness Components Assessed by Major Category



When disaggregating the data within professional knowledge and professional skills/abilities, interesting trends emerge. The most common components of professional readiness assessed at NOVA in 2019-2020 were expertise/ knowledge in the field (assessed 129 times) and application of knowledge (assessed 97 times; Figure 9). These components of PR are sub-categories of professional knowledge. At 15 percent and 11 percent respectively, analysis and writing skills are the third and fourth most frequently assessed professional readiness skills. Oral presentation (7 percent) rounds out the top five PR skills assessed.

In the next round of PR assessments (2022-2023), the Office of Strategic Insights will encourage programs and disciplines to consider diversifying their assessment of PR, as half of the items assessed in 2019-2020 fell into two of eight sub-categories.

Figure 9. Number of Professional Readiness Components Assessed by Sub-Category



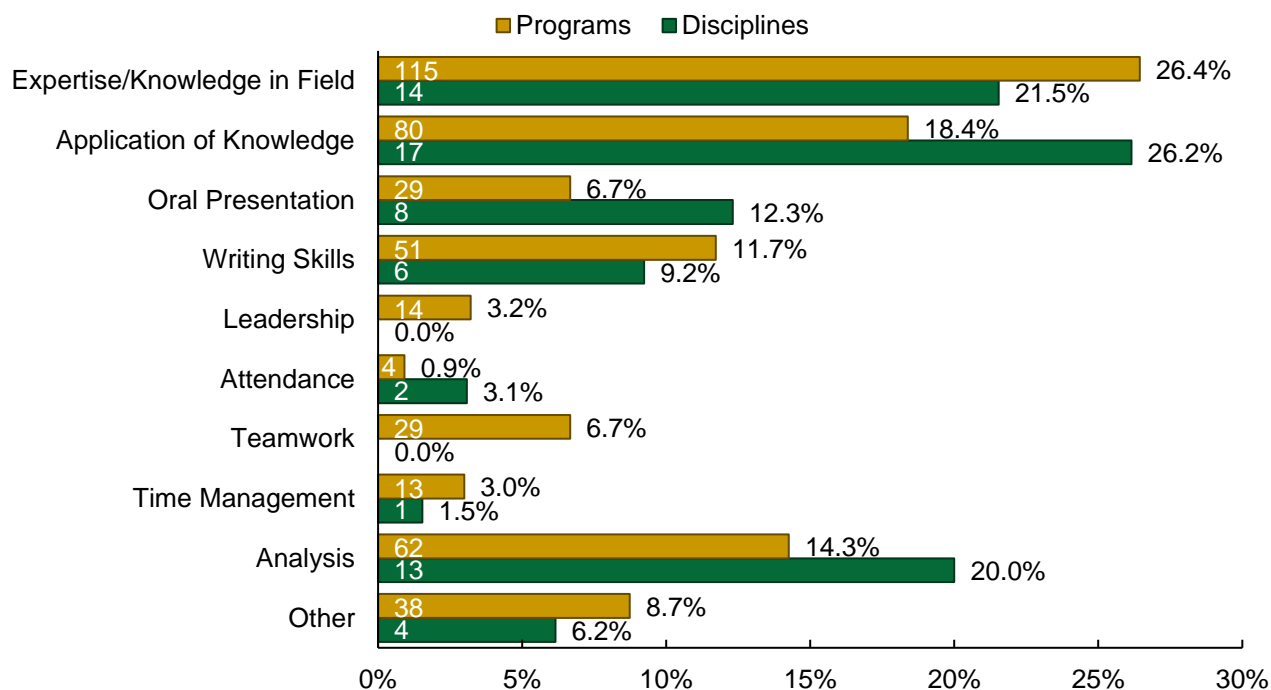
As Figure 10 indicates, when disaggregating PR assessment by disciplines and programs, the top two subcategories assessed reveal interesting trends. Programs assessed PR as professional knowledge 115 items, 26 percent of all program assessments of PR. Disciplines

assessed professional readiness using professional knowledge 14 times (22 percent). Programs assessed 80 items (18 percent) using application of knowledge. Conversely, disciplines assessed the application of knowledge using 17 items (26 percent; Figure 10).

Programs rounded out the top five subcomponents used to assess PR with analysis (15 percent), writing skills, (11 percent), and other (9 percent). Disciplines filled out the top five subcategories used to assess PR with analysis (20 percent), oral presentation (12 percent), and writing skills, (almost 12 percent; Figure 10).

Students in discipline courses learned how to apply what they have learned while students in program courses spent time building knowledge and expertise in their field (Figure 10). This is of particular importance because, given the nature of disciplines and programs, the logical assumption is that the opposite would happen; disciplines would focus on building knowledge while programs focused on applying knowledge. Figure 10 shows another interesting trend. As mentioned in the beginning of this audit, there are certain skills employers are looking for among recent graduates (e.g., effective oral communication, critical thinking, ethical decision-making, etc.). However, it seems that disciplines focus on these components of professional readiness more so than programs. Specifically, disciplines primarily assessed oral presentation (12 percent) and analysis (20 percent) while programs primarily assessed writing skills (12 percent) and teamwork (7 percent).

Figure 10. Professional Readiness Components Assessed by Disciplines and Programs

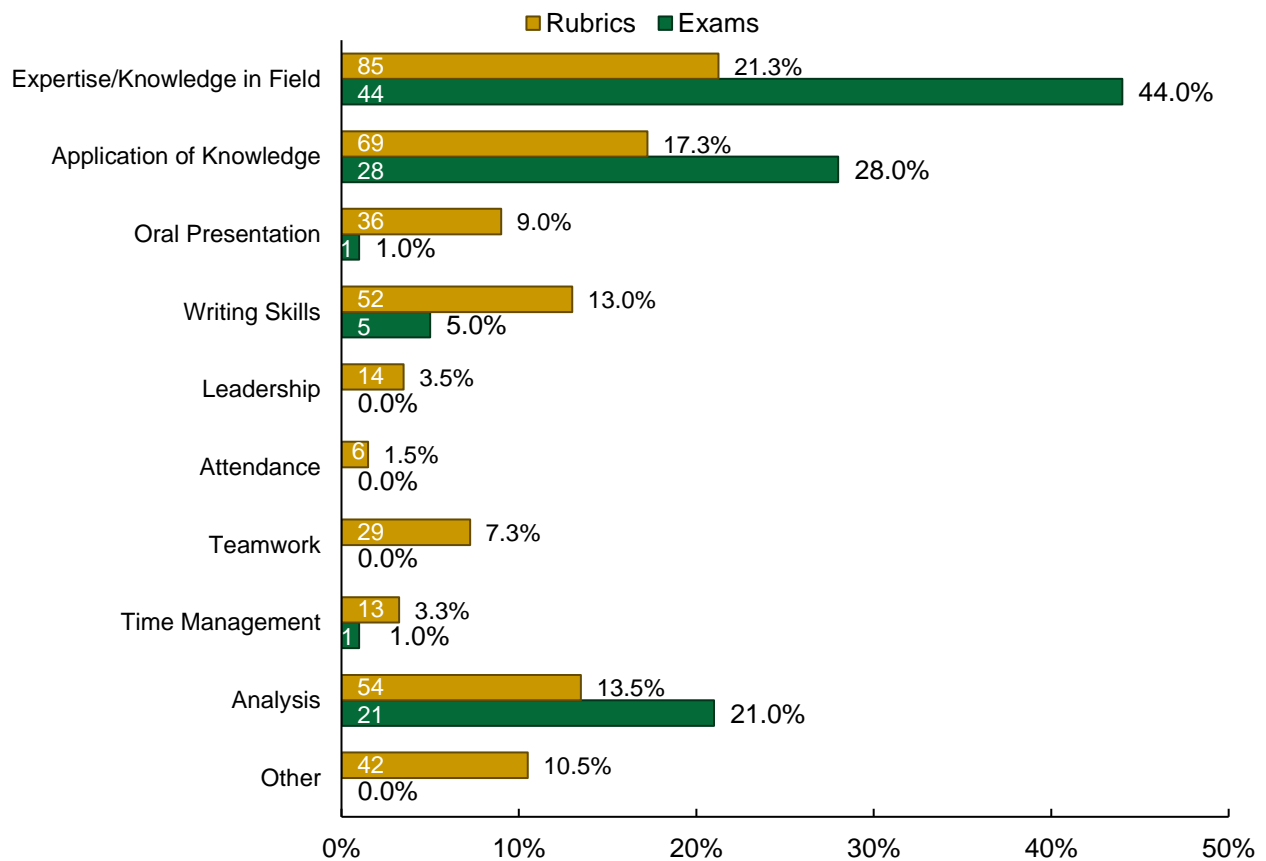


Rubrics and exams were examined to determine the PR subcategories that they addressed (Figure 11). Rubrics assessed all eight subcategories, with 21 percent of rubrics assessing knowledge of the field, and most subcategories were assessed fairly evenly on rubrics, hovering

between 7 and 17 percent. The three least-assessed subcomponents on rubrics were leadership (4 percent), time management (3 percent), and attendance (1.5 percent).

Exams assessed PR primarily using knowledge in the field (44 percent), along with application of knowledge (28 percent), and analysis (21 percent). Ninety-three percent of all exam items assessing PR fell into one of those three categories.

Figure 11. Professional Readiness Categories by Assessment Method



B. Assessment Measures’ Alignment with the Professional Readiness Competency

The Office of Strategic Insights analyzed program and discipline PR assessments in terms of how well NOVA assessment measures aligned with the VCCS definition of professional readiness (Table 6). Assessment methods were examined for their alignment with relevant operational definitions of professional readiness. The clarity of the operational definitions of professional readiness used on rubrics and exams was also examined. Sample sizes were categorized (small, medium, or large). Finally, student achievement on the assessment was compared to the target goal set by the faculty.

Table 6. Categorizing Professional Readiness Assessment Methods and Target Data

Category	Description
Operationalized definition	Program/discipline provided an operationalized definition of the CLO that is clear, measurable, and relates to the VCCS definition of the CLO; includes actions students will take to demonstrate learning of this outcome (e.g., demonstrate proficiency in certain areas, analyze data, interpret information, etc.).
Sample Size	<i>Small Sample Size:</i> Samples with 33 students or fewer.
	<i>Medium Sample Size:</i> Samples between 34 and 69 students.
	<i>Large Sample Size:</i> Samples over 70 students.
Outcome-Method Alignment	Method/assignment used clearly measures the operationalized CLO.
Rubric/Measure	<i>Rubric in APER:</i> Separate Rubric/assessment measure and/or grading scale was not provided but was explained in the APER.
	<i>No Rubric Provided:</i> No rubric was provided either with the APER submission email or in the APER.
	<i>Assignment-Specific Rubric:</i> Rubric evaluates the CLO being assessed and provides at least one of the following: a. Clear description of grading criteria/grading scale and/or b. a clear description of the pedagogical purpose of assignment.
	<i>Generic Rubric:</i> A rubric contains two or more of the following problems: <ul style="list-style-type: none"> • it uses a generic rubric that does not directly address the assignment (for example, using a CT rubric that does not address the particulars of the paper/presentation being assessed); • a rubric which does not address the specifics of the assignment; the grading scale is not provided; and/or no pedagogical purpose is presented.
	<i>Misaligned Rubric:</i> The rubric does not directly evaluate the CLO being assessed.
Examination	<i>Outcome-Specific Examination:</i> The exam questions evaluate the assessed CLO by addressing 3 or more aspects of the CLO.
	<i>Generic Examination:</i> The exam questions touch on the CLO in general terms, or only tangentially relate to the CLO. Only assessed 2 or fewer of the concepts and/or is unrelated to the CLO.
	<i>Misaligned Exam:</i> The exam does not test for knowledge, skills, or abilities related to the CLO.
Other	

Using the categories in Table 6, the Office of Strategic Insights coded 44 PR rubrics and exams.¹⁰ Thirty-seven assessment measures met the criteria in Table 6 for an assignment-specific rubric or an outcome-specific exam. This means that 84 percent of assessment measures align with the VCCS definition of professional readiness (Figure 12) and that these exams and rubrics effectively assessed the components and/or subcomponents of professional readiness delineated by NOVA. Given this is the first year collecting PR assessments, this level of alignment is higher than expected. However, NOVA will continue working with faculty to align rubrics and exams with the NOVA definition of professional readiness for the next assessment in 2022-23.

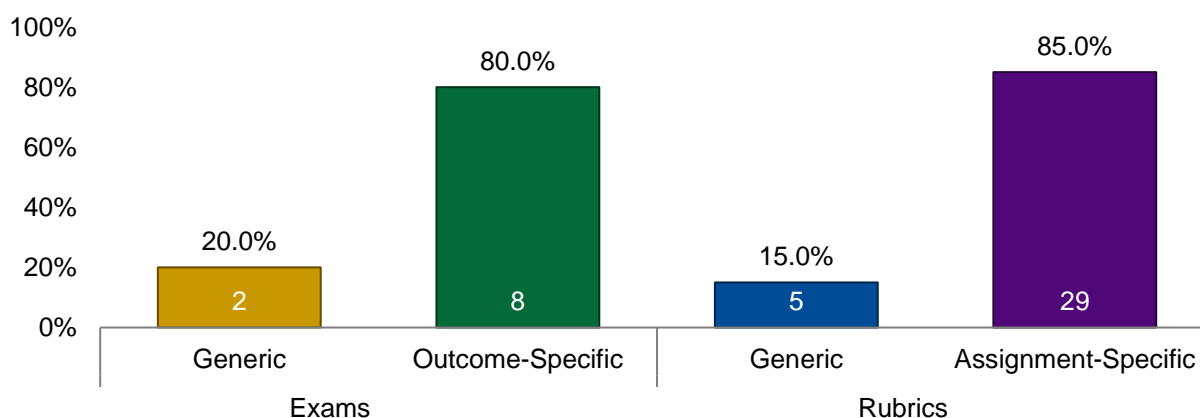
¹⁰ Programs and disciplines used 50 rubrics and exams to assess PR. SDV used a survey, which was not coded. Six exams and rubrics were not supplied to the Office of Strategic Insights; therefore 44 assessment measures were coded.

Figure 12. Professional Readiness Assessment Measures as Generic or Specific



Exams were used by 10 programs and disciplines, and rubrics were used by 34 programs and disciplines to assess professional readiness. Eighty percent of PR exam questions were coded as Outcome-Specific (Figure 13). This means that exam questions evaluated professional readiness by addressing at least 3 of the 10 professional readiness subcomponents described in Table 6. Eighty-five percent of rubrics were coded as Assignment/Outcome-Specific. This means that the rubrics clearly state grading criteria and the purpose of the assignment. This specificity makes the assignment more easily understood by students. Extensive research suggests that clear guidelines for content and assessment on an assignment improves student success on an assignment.¹¹

Figure 13. Professional Readiness Exams and Rubrics by Generic or Specific Content



Below are some examples of Assignment-Specific Rubrics from the 2019-2020 PR assessments:

Drivers Education had students create a lesion plan with a partner from class. The rubric covered eight components of professional readiness. Additionally, the rubric assessed professional readiness with 29 different items (Appendix C).

Biotechnology students analyzed and formatted raw scientific data and prepared a written report. This assignment was assessed for professional readiness using a rubric that

¹¹ Almarode, J., & Vandas, K. (2018). *Clarity for Learning: Five Essential Practices that Empower Students and Teachers*. New York: Corwin.

evaluated the organization of data, the accurate analysis of data, presentation of data via charts, and analysis of the results. The rubric used a binary grading scale (meets expectations/does not meet expectations) to differentiate student performance in each area (Appendix D).

Below are examples of Outcome-Specific Exams:¹²

Economics students responded to multiple choice questions relating to market structures, monopoly, supply and demand, market equilibrium, and elasticity. These questions focused on professional knowledge in the field which students will need upon graduation.

Cybersecurity students were asked to identify the duties of a variety of cybersecurity jobs. The goal of this exam was to help students identify professions they may be interested in pursuing. The questions connected job titles with the relevant expertise/knowledge required.

C. Achieving Professional Readiness Target Goals

Target goals are set by programs and disciplines to measure student success in professional readiness. They allow disciplines and programs to investigate the success of the curriculum in preparing students in this area and the extent to which students mastered the required skills and material. Programs and disciplines then analyze the assessment results and take actions to improve student learning.

The Office of Strategic Insights compiles the program and discipline data to analyze how well individual disciplines and programs are meeting their target goals. In addition, the Office of Strategic Insights aggregates the student data to analyze how well students are meeting PR targets college wide. The data discussed below provides information on these two related areas: student achievement of PR skills and program/discipline achievement of target goals. Target goal success is rated in one of four categories: exceeded target (i.e., results are 10 percent or more than the set target); met target; partially met target; or did not meet target.

Overall, 5,403 students participated in the assessment of professional readiness at NOVA. However, the data below reports on 3,137 students, a subset of the total number of students participating in PR assessment.¹³ A college-wide sample of 3,137 students still provides robust data for the College, but the Office of Strategic Insights will work with programs and disciplines for the next PR assessment to ensure that the target data sample represents all students assessed.

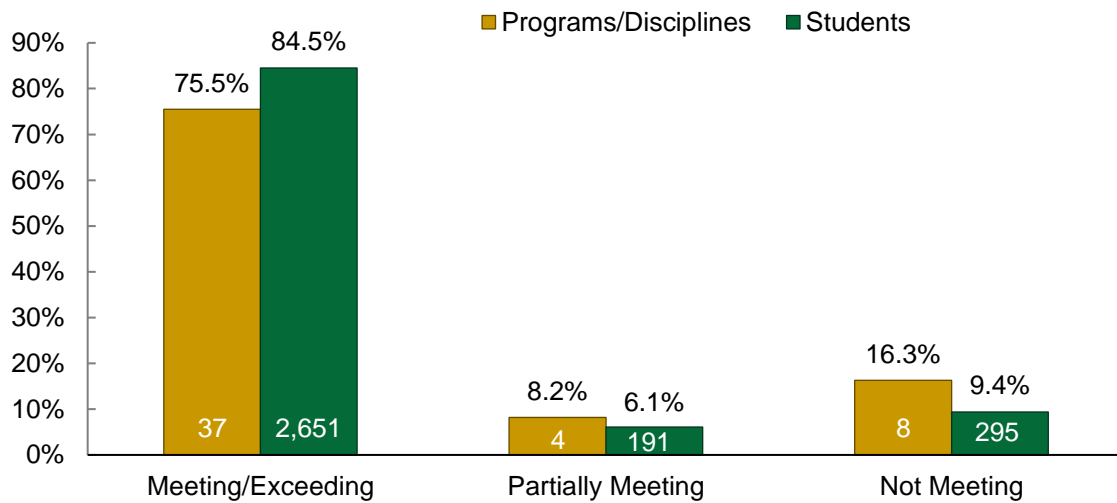
As indicated by Figure 14 approximately 85 percent of the 3,137 students assessed met or exceeded their program/discipline's target goal. Another 6 percent of students partially met their target goals. Therefore, over 90 percent of students exceeded, met, or partially met the professional readiness target goals set for them by their program or discipline.

Disciplines and programs performed much like the students, with 76 percent of programs and disciplines meeting or exceeding their target goals (Figure 14). Another 8 percent of programs and disciplines partially met their target goals; therefore, approximately 84 percent of programs and disciplines exceeded, met, or partially met their professional readiness target goals.

¹² Copies of the exam questions are not provided, as this is a public document.

¹³ SDV created a new assessment and did not set target goals; therefore, their data is not included in this section.

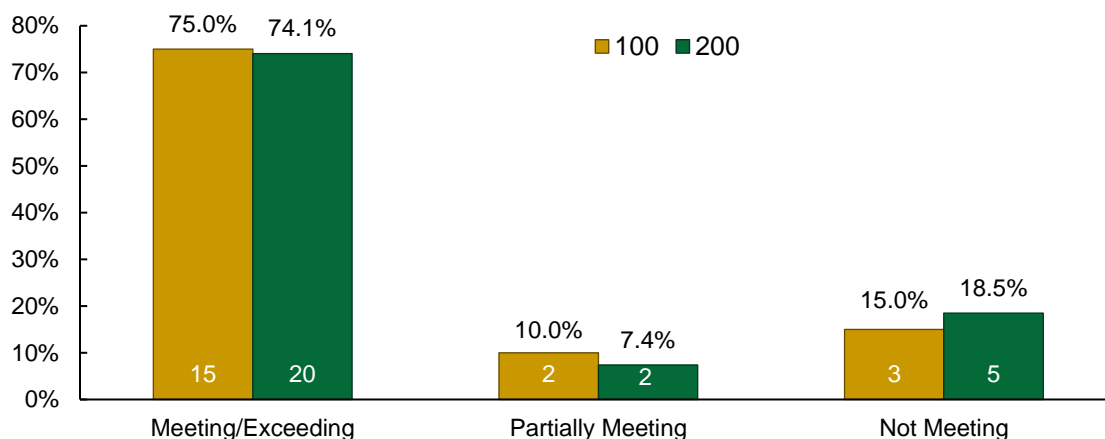
Figure 14. Professional Readiness Target Scores by Students and Programs/Disciplines¹⁴



When disaggregating program and discipline target goal data by 100-level and 200-level courses, the success rate of disciplines and programs is about even (Figure 15). Seventy-five percent of NOVA courses assessing students at the 100-level, and 74 percent of 200-level courses, met or exceeded their targets. For those programs/disciplines partially meeting their goal, the outcomes at the 100-level and 200-level are also comparable (100-level: 10 percent; 200-level 7 percent). Disciplines and programs not meeting their targets continue to work with their faculty, their dean, and the Office of Strategic Insight to improve student learning and assessment practices.

¹⁴ EMS and Religion assessed 100 and 200-level classes but did not disaggregate the data. Their assessments are not included in the graphs disaggregated by 100- and 200-level classes.

Figure 15. Programs' and Disciplines' Achievement of Professional Readiness Targets by 100-Level and 200-Level Courses

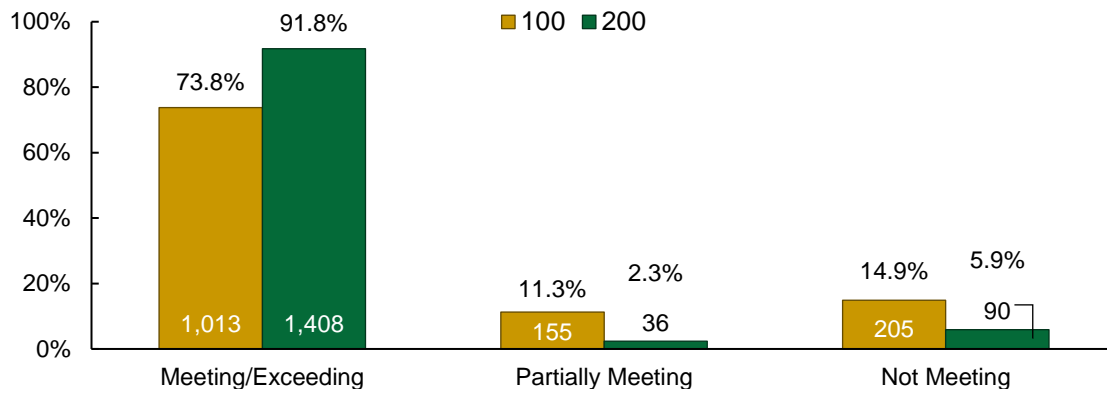


The discussion above relates to the achievement of target goals by programs and disciplines. Figure 16 details the disaggregated student data in 100- and 200-level courses. It provides information about the number of students across the College who are achieving target goals when it comes to their professional readiness knowledge and skills. The student data indicates that students perform well in professional readiness at both levels.

At the 100-level, 74 percent of students are meeting/exceeding the target goals (Figure 16). Another 11 percent of students assessed at the 100-level partially met their goals. At the 200-level, 92 percent of students met or exceed their target goals. Another 2 percent of students in 200-level courses partially met the target goals set by their program/discipline.

This means that 200-level students are more successful in demonstrating mastery of PR skills while 100-level students are only partially successful. While there is a disconnect, the data supports the logical explanation: 200-level students are typically further along in their studies and therefore, had more time and opportunity to develop their PR skills. Although 100-level students are not as successful as 200-level students, the level at which they meet expectations is acceptable. Faculty will continue to reconceive of their approach to professional readiness at the 100-level to improve student success.

Figure 16. Students' Achievement of Professional Readiness Targets by 100-Level and 200-Level Courses



Section IV: Actions to Improve Student Learning

Using assessment results to improve the assessment and learning process is essential to continually improving student learning. Therefore, closing the loop, or using assessment results to make improvements, is the last step (before the cycle begins again). Many disciplines and programs start this process by presenting assessment findings to the faculty, followed by brainstorming ways to improve student learning. The faculty use the assessment results to determine alterations to the processes and to improve assessment and/or learning. This section of the audit examines the changes presented in the Use of Results section of the *APERs* and *CLO Reports*.¹⁵ These annual reports detail the assessment methods and results for each program and discipline. The changes outlined in the Use of Results discussion are coded into 5 major categories: curriculum specific actions, changes regarding program resources, changes regarding co-curricular resources, changes in the assessment process, and changes made at the college-level (Appendix A17 for Descriptions and Examples of Major and Subcategories and Appendix A19 for Use of Results by Subcategory in Descending Order of use). Each category has sub-categories as displayed in Table 7. The aggregation of this data allows for the assessment of the college-wide changes used to improve the assessment process and student learning.

Table 7. Use of Results Codes: Major and Subcategories

Major Category	Subcategories
Curriculum-Specific	Curricular Change
	Course Revision
	Pedagogy
	Subject-Matter Expert Feedback
Program Resources	Financial
	Human Resources
	General Resources
Co-Curricular Resources	Co-Curricular Opportunities
	Academic Support/Advising
SLO Assessment Process	SLO Assessment Change
	Data Analysis Method Change
	Student Learning Outcome Change
	Target Increased
	Target Decreased
	Target Clarified
	Sample Size
	Communication on the Assessment Process
College Level Changes	Dual Enrollment
	Articulation Agreement
	Recruitment/Marketing

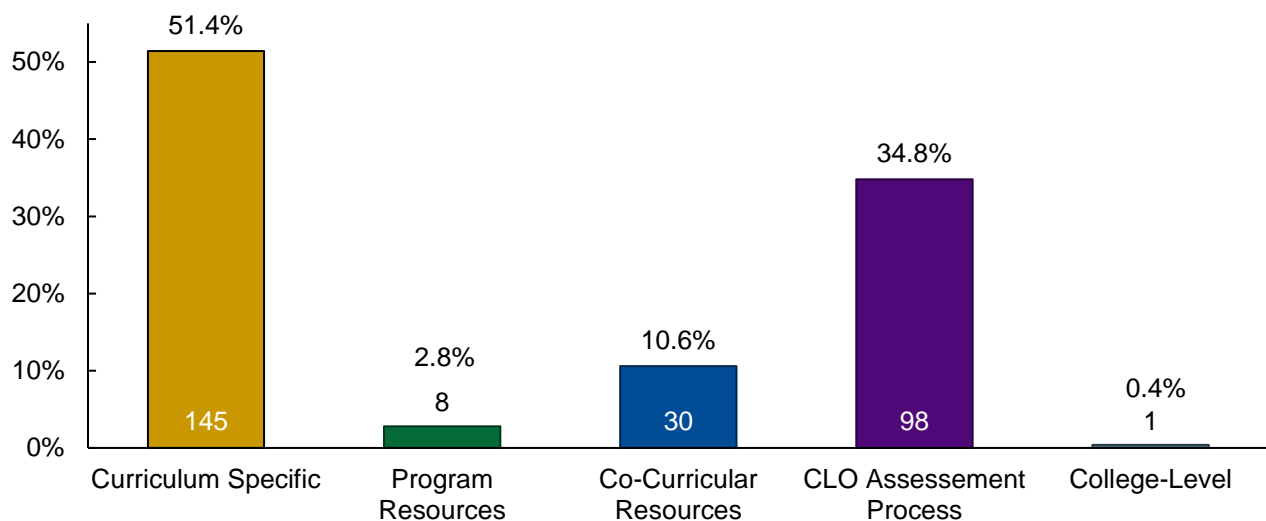
¹⁵ As a reminder, programs report using the Annual Planning and Evaluation Report (APER). They report on their SLOs, CLOs, and program goals. The disciplines without degrees submit an abridged report, which focuses on the core learning outcomes assessments for the college.

A. Analysis of Actions for Improvement by Major Category

In 2019-2020, 51 programs and disciplines assessed professional readiness. Programs made 231 actions for improvement as a result of the assessment process, while disciplines made 51 actions. Collectively, they created 282 actions to improve student learning and the assessment process (Figure 17). This averages to approximately five actions taken per program/discipline (see Appendix Table A16). This demonstrates that disciplines and programs use their assessment data to plan and seek improvements.

Fifty-one percent of the actions reported relate to improving the curriculum (Figure 17). This was the most frequently used category of actions in 2019-2020. At almost 35 percent, changes to the assessment process were the second most frequently mentioned action by programs and disciplines. Programs and disciplines tend to make, or plan for, changes in areas over which they have control. Therefore, disciplines and programs carefully consider other options before requesting major improvements to resources (new faculty, facilities, etc.) or undertaking college-level changes.

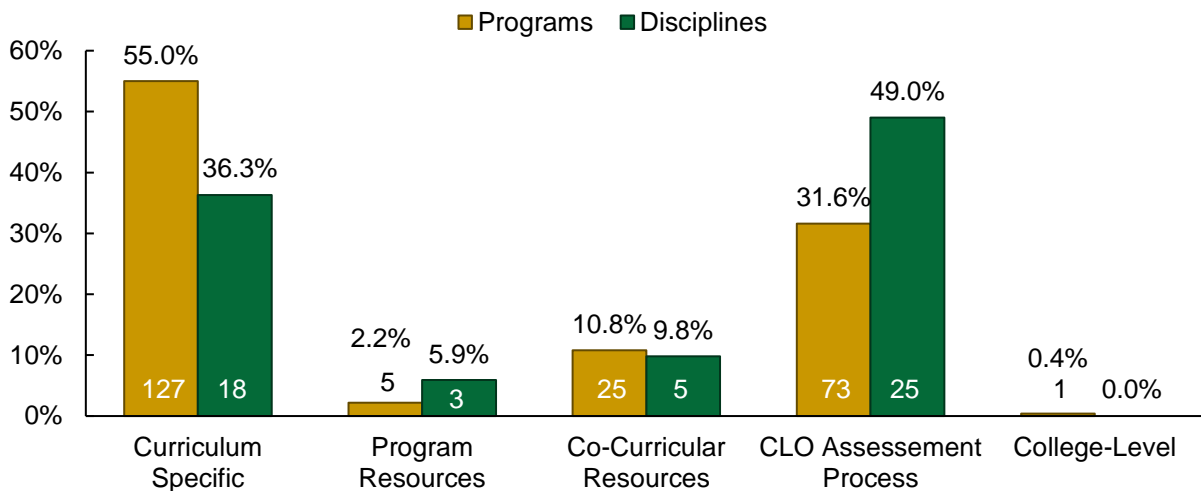
Figure 17. Actions for Improvement by Major Category



Data disaggregated by program and discipline reveals that disciplines and programs are at different stages in the assessment process (Figure 18). Changes to the curriculum and the assessment process are the two most frequently noted actions made to improve assessment and student learning. It is best practice to refine data collection and analysis techniques prior to making curricular changes.

As mentioned previously, 2017-2018 was the first-year disciplines reported on their assessment process. In line with best practice, 49 percent of the disciplines' changes are in their assessment process (Figure 18). Meanwhile, programs tend to have more developed assessment processes, thus most of their actions, 55 percent, are curricular specific. Programs, however, continue to improve the assessment process with almost 32 percent of their actions being assessment oriented.

Figure 18. Program and Discipline Actions for Improvement by Major Category



B. Actions to Improve Program and Discipline Assessment Processes by Subcategories

In 2019-2020, disciplines and programs made 98 changes to improve their assessment process (Figure 19). The most frequent changes in the assessment process concerned improving the communication between the CLO Lead (or steering committee) and the program or discipline faculty. Communication with NOVA administrators counts in this category as well. CLO Leads (or steering committees) are creating best practices for helping faculty administer the assessment measure, communicating the need to spend more time on a topic in class, and communicating assessment results, which are all forms of interactions coded as changes in communication. Changes in communication accounted for 43 percent of all changes in the assessment process made by disciplines and programs (Figure 19). This attention to improving the dissemination of information to the faculty (full-time and part-time) and administrators denotes an appreciation for closing the loop. Closing the loop ensures all faculty can use the assessment data to improve student learning.

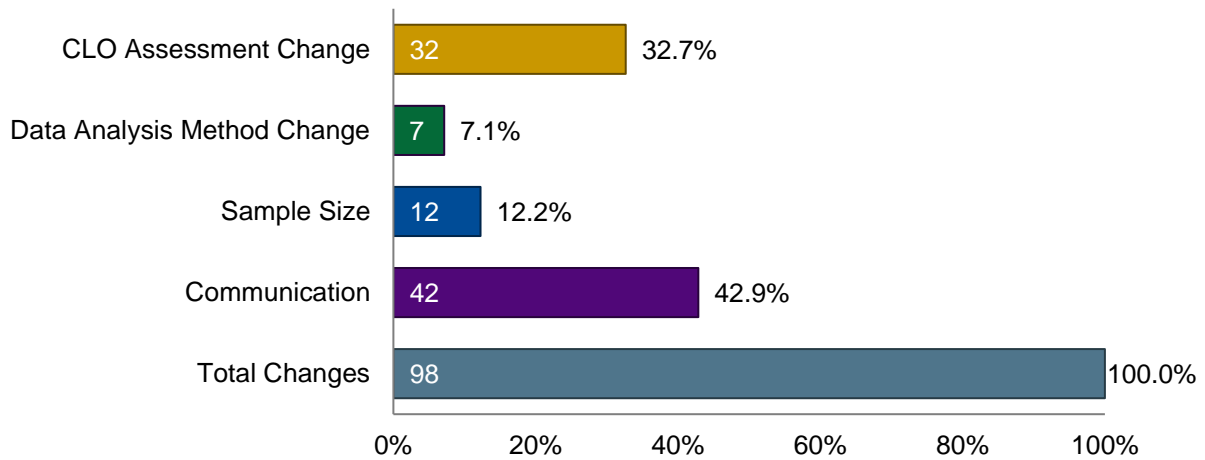
The subcategory CLO Assessment Change refers to an assessment change focused on the core learning outcome (often a program or discipline SLO) and how it is measured. This includes implementing a new assessment or changing items on an existing assessment. It also refers to the addition of disaggregated data on the CLO, allowing the program or discipline to further break down the subcomponents of professional readiness to determine specific areas needing improvement. Disciplines and programs made almost 33 percent of their assessment related changes in this area (Figure 19).

The subcategory Data Analysis Method Change refers to an assessment change related to the change or modification in the collection or analysis of data. Examples might include modifying or creating a new rubric/exam or implementing new methods for collecting data. Disciplines and programs made 7 percent of their assessment changes in this area. (Figure 19).

The subcategory Sample Size refers to decisions and/or attempts to include more students in the assessment process. Adding off-site dual enrollment students to the sample pools and/or working with NOVA Online to assess those students are a part of changes in sample size. This

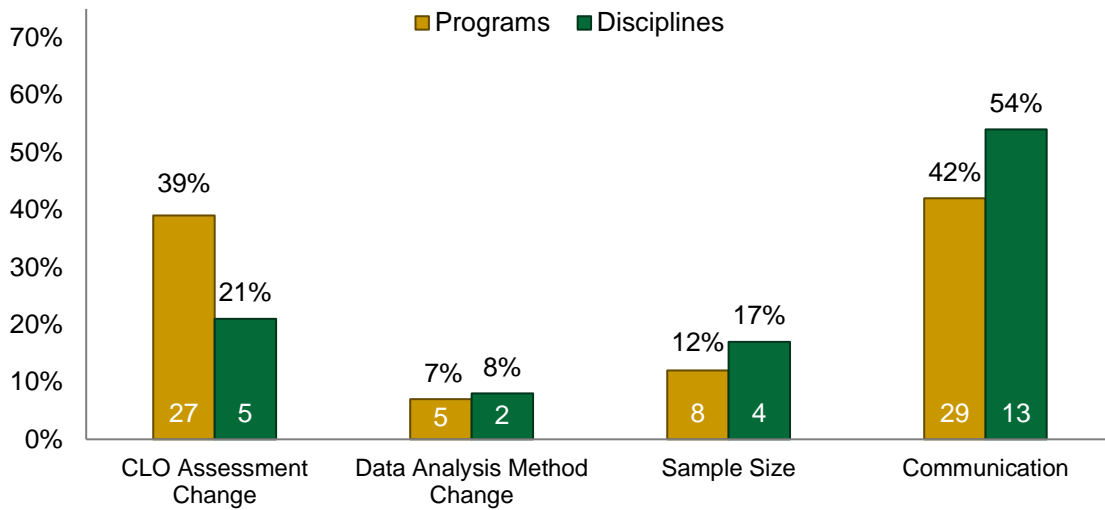
also includes attempts to bring in more participation from the various campus sites. Disciplines and programs made 12 percent of their changes in this area (Figure 19).

Figure 19. Actions to Improve the Professional Readiness Assessment Process



Disaggregating the actions aimed to improve the assessment process yields interesting similarities. Programs and disciplines made most of their assessment related changes in the area of communication (Figure 20). Fifty-four percent of discipline assessment related changes regarded communication. Programs made 42 percent of their assessment related actions to the improvement of communication. CLO assessment change was the second largest area of assessment process changes made by programs and disciplines. Programs made 39 percent of their assessment related changes in this category, while disciplines made 21 percent. Data analysis method and sample size changes made by disciplines and programs trended together. Disciplines and programs made less than 10 percent of their total assessment related changes to data analysis, and just over 10 percent of their total assessment related changes to sample size changes.

Figure 20. Actions by Programs and Disciplines to Improve the Professional Readiness Assessment Process



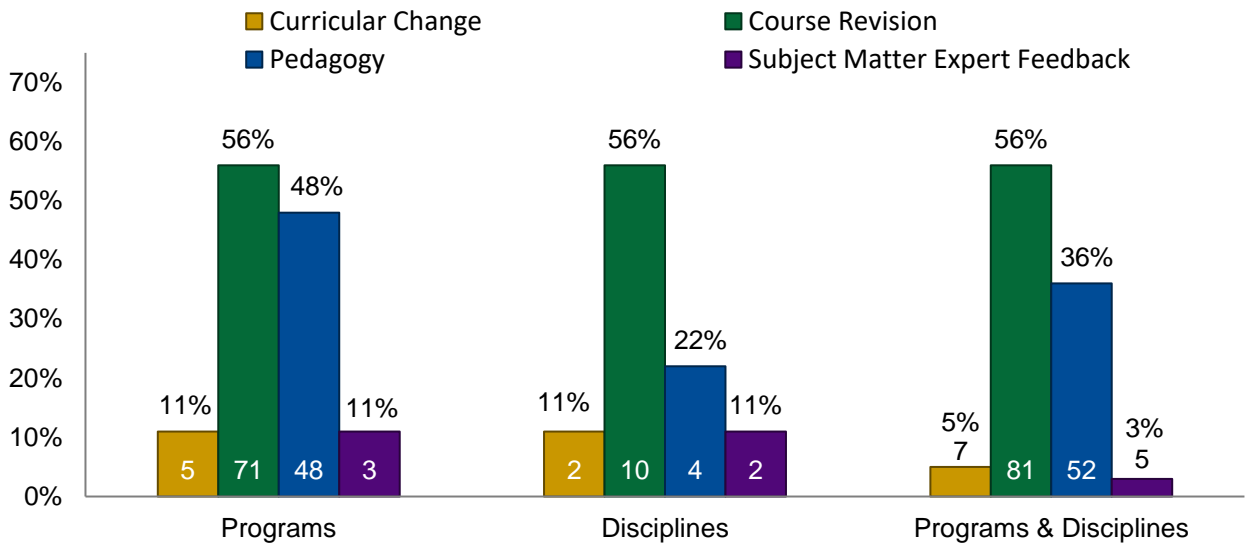
C. Curriculum Actions by Programs and Disciplines to Improve Professional Readiness

Curriculum-specific actions are meant to improve course content and forms of instruction. Curriculum specific changes fall into the following categories: curricular change (change to the degree requirements); course revision (modifying course content, adding review sessions, or modifying assignments); pedagogical changes (revising the means of delivering course content, such as adding more discussion, new technology); and subject matter expert feedback (seeking recommendations from employers, experts in the field, or an accreditation body). Forty-two programs made 127 curriculum specific changes; nine disciplines made 18 curriculum specific changes (Figure 21). Together programs and disciplines made 145 curriculum specific changes.

Programs and disciplines made most of their curriculum specific changes relating to course revision. As Figure 21 indicates, programs and disciplines made 81 course revisions, or 56 percent of all curriculum specific changes. Disciplines implemented ten course revisions while programs made 71 course revisions.

The second most frequently curriculum specific change mentioned by programs and disciplines is pedagogy. Programs and disciplines together made 52 pedagogical changes, which is 36 percent of all curriculum specific changes made. Disciplines reported four pedagogical changes, or 22 percent of all the curriculum specific changes made by disciplines. Programs reported 48 pedagogical changes, or 22 percent of all the curriculum specific changes made by programs (Figure 21).

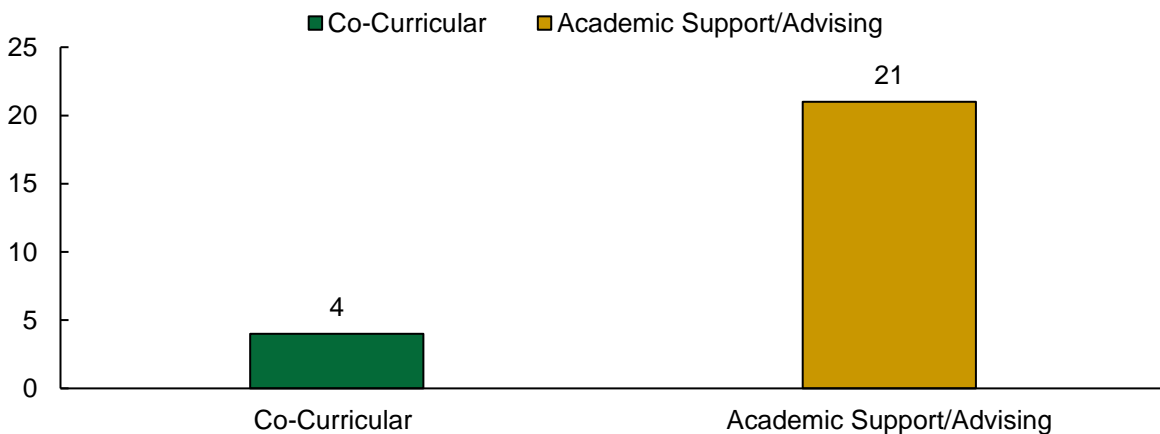
Figure 21. Curriculum Actions by Programs and Disciplines to Improve Professional Readiness



D. Co-Curricular Actions Implemented by Programs and Disciplines to Improve Professional Readiness

Co-curricular activities are educational opportunities happening outside the classroom/digital class space. Academic support and advising are co-curricular activities aimed at improving student learning. Support activities range from faculty connecting students with peer tutors and/or academic support services like the Career Counseling, the Writing Center, Science and/or Math lab. Programs made 21 changes to related to academic support and advising and four changes with other co-curricular activities (Figure 22). Disciplines did not take any actions in this area in 2019-2020.

Figure 22. Co-Curricular and Advising Actions by Programs to Improve Professional Readiness



Section V: Conclusion

As highlighted in this audit, program and discipline CLO assessments are evaluated in four areas: (1) assessment participation, (2) quality in reporting and assessment, (3) the most utilized components of the CLO assessed, and (4) how well disciplines and programs close the loop.

The 2019-2020 assessments (PR and SL) saw a 24 percent increase in student participation compared to 2018-2019 and a 96 percent increase compared to 2017-2018.¹⁶ The Office of Strategic Insights compares each assessment year's sample size to see if numbers continue to rise, or if numbers of students participating depend on the core learning outcome being assessed. Specifically, 5,403 students across modalities took part in the professional readiness assessment process. Students were assessed in courses from 42 educational programs and standalone certificates and 9 disciplines without degrees. In terms of quality, the 2019-2020 professional readiness assessment reports by programs and disciplines have remained steady with 92 percent meeting expectations (rubric scores between 90-100 percent).

Of the 51 disciplines and programs, 43 percent used their existing student learning outcomes to assess professional readiness. Additionally, 80 percent of programs' and disciplines' rubrics and 85 percent of their exams clearly aligned with the VCCS definition of professional readiness. Disciplines and programs assessed professional readiness primarily as professional skills and abilities (55 percent) compared to professional knowledge (45 percent). The most common components assessed included expertise/knowledge in the field, application of knowledge, analysis, writing skills, and oral communication.

According to the 2019-2020 assessment reports, disciplines and programs created 282 actions to improve professional readiness learning and assessment. Programs primarily made curriculum-specific changes (55 percent) while disciplines focused on assessment process changes (49 percent).

¹⁶ The Office of Strategic Insights recognizes that there may be some overlap between assessments; specifically, we may occasionally assess the same student in two different PR, or SL (etc.) assignments. As we don't ask for student identification numbers from most programs and disciplines, we cannot determine the exact level of overlap, but we assume it is small.

Appendix A: Data Tables for Professional Readiness Audit

Table A1. Programs and Disciplines Assessing Core Learning Outcomes: 2019-2020

	Core Learning Outcome: Professional Readiness
Program	42
Discipline	9
Total	51

Table A2. Professional Readiness Assessments Operationalized Using Student Learning Outcomes

	# of Reports	# Using SLOs	Percentage
Program	42	23	54.8
Discipline	9	6	66.7
Programs and Disciplines	51	29	56.8

Table A3. Overall Student Sample Size

	#	%
Programs	1780	32.9
Disciplines	3623	67.1
Total	5403	100

Table A4. Comparison of Sample Sizes and Population Percentage: 2017-2018 to 2019-2020

	2017-2018 (49,011 Students Enrolled in Spring 2018)			2018-2019 (50,011 Students Enrolled in Spring 2019)			2019-2020 (46,419 Students Enrolled in Spring 2020)		
	CT	QL	CT & QL	CE	WC	CE & WC	PR	SL	PR & SL
CLO Assessed									
Sample Size	4603	1180	5783	5457	4837	10297	5103	3137	8237
% of Population	9.4	2.4	11.8	10.9	9.7	20.6	11.0	6.7	17.7

Note: CT = Critical Thinking; QL = Quantitative Literacy; CE = Civic Engagement; WC = Written Communication; PR = Professional Readiness; SL = Scientific Literacy

Table A5. Professional Readiness Sample Sizes by Course Level and by Program and Discipline

	100-Level	200-Level
Programs	845	904
Disciplines	2794	630
Total	3639	1534

Table A6. Average Professional Readiness Student Sample Size by 100 and 200-Level Courses by Programs and Disciplines

	Average Sample Size	
	100-Level	200-Level
Programs	53	36
Disciplines	559	315
Programs and Disciplines	180	57

Table A7. Number of Professional Readiness Components Assessed by Major Category

	#	%
Professional Knowledge	226	45.2
Professional Skills & Abilities	274	54.8
Total	500	100

Table A8. Types of Professional Readiness Assessed by Subcategory

	#	%
Professional Knowledge		
Expertise/Knowledge in Field	129	25.8
Application of Knowledge	97	19.4
Professional Skills & Abilities		
Oral Presentation	37	7.4
Writing Skills	57	11.4
Leadership	14	2.8
Attendance	6	1.2
Teamwork	29	5.8
Time Management	14	2.8
Analysis	75	15.0
Other	42	8.4
Total	500	100

Table A9. Professional Readiness Components Assessed by Programs and Disciplines

	Programs		Disciplines	
	#	%	#	%
Professional Knowledge				
Expertise/Knowledge in Field	115	26.4	14	21.5
Application of Knowledge	80	18.4	17	26.2
Professional Skills & Abilities				
Oral Presentation	29	6.7	8	12.3
Writing Skills	51	11.7	6	9.2
Leadership	14	3.2	0	0
Attendance	4	0.9	2	3.1
Teamwork	29	6.7	0.0	0.0
Time Management	13	3.0	1	1.5
Analysis	62	14.3	13	20.0
Other	38	8.7	4	6.2
Total	435	100	65	100

Table A10. Professional Readiness Categories Used in Assessment Measures

	Rubrics		Exams	
	#	%	#	%
Professional Knowledge				
Expertise/Knowledge in Field	85	21.3	44	44.0
Application of Knowledge	69	17.3	28	28.0
Professional Skills & Abilities				
Oral Presentation	36	9.0	1	1.0
Writing Skills	52	13.0	5	5.0
Leadership	14	3.5	0	0.0
Attendance	6	1.5	0	0.0
Teamwork	29	7.3	0	0.0

Time Management	13	3.3	1	1.0
Analysis	54	13.5	21	21.0
Other	42	10.5	0	0.0
Total	400	100	100	100

Table A11. Effectivity of Rubrics and Exams by Discipline Group

	Rubrics					Exams				
	# of Rubrics	Assignment-Specific		Generic		# of Exams	Outcome-Specific		Generic	
		#	%	#	%		#	%	#	%
Program	29	25	86.2	4	13.8	8	6	75.0	2	25.0
Discipline	5	4	80.0	1	20.0	2	2	100.0	0	0.0
Total	34	29	85.0	5	15.0		8	80.0	2	20.0

Table A12. Professional Readiness Target Scores by Programs and Disciplines

	Programs		Disciplines		Overall	
	#	%	#	%	#	%
Exceeded	16	38.1	2	28.6	18	36.7
Met	16	38.1	3	42.9	19	38.8
Partially Met	2	4.8	2	28.6	4	8.2
Did Not Meet	8	19.0	0	0.0	8	16.3
Total	42	100	7	100	49	100

Table A13. Programs' and Disciplines' Achievement of Professional Readiness Targets by 100-Level and 200-Level Courses

	100-Level Courses						200-Level courses					
	Programs		Disciplines		Overall		Programs		Disciplines		Overall	
	#	%	#	%	#	%	#	%	#	%	#	%
Exceeded	7	43.8	0	0.0	7	35.0	9	36.0	1	50.0	10	37.0
Met	6	37.5	2	50.0	8	40.0	9	36.0	1	50.0	10	37.0
Partially Met	0	0.0	2	50.0	2	10.0	2	8.0	0	0.0	2	7.4
Did Not Meet	3	18.8	0	0.0	3	15.0	5	20.0	0	0.0	5	18.5
Total	16	100	4	100	20	100	25	100	2	100	27	100

Table A14. Professional Readiness Target Achievement by Sample Size: All Level Courses

	Number of Students	
	#	%
Exceeded	1124	35.8
Met	1527	48.7
Partially Met	191	6.1
Did Not Meet	295	9.4
Total	3137	100

**Table A15. Professional Readiness Target Achievement by Sample Size:
100-Level and 200-Level Courses**

	100-Level Courses						200-Level courses					
	Programs		Disciplines		Overall		Programs		Disciplines		Overall	
	#	%	#	%	#	%	#	%	#	%	#	%
Exceeded	107	12.7	0	0.0	107	7.8	197	21.8	621	98.6	818	53.3
Met	533	63.1	373	70.6	906	65.9	581	64.3	9	1.4	590	38.5
Partially Met	0	0.0	155	29.4	155	11.3	36	3.9	0	0.0	36	2.3
Did Not Meet	205	24.3	0	0.0	205	14.9	90	2.8	0	0.0	90	5.9
Total	845	100	528	100	1373	100	904	100	630	100	1534	100

Table A16. Average Number of Use of Results per Discipline Group: 2019-2020

	Annual Reports Submitted	Total # of Use of Results	Average # of Use of Results
Program	42	231	5.5
Discipline	9	51	5.7
Total	51	282	4.5

Table A17. Descriptions and Examples of Changes by Major Categories and Subcategories

Major Category	Subcategory	Description
Curriculum Specific	Curricular Change (CC)	Curricular change to degree program, e.g., added a course or other requirement; changed sequence of courses, paradigm shift—i.e., change in program focus based on industry standards and evolving technology; change in time schedule (when classes are offered); added courses online or in hybrid format; added/increased number of sections of a course to accommodate more students; coordinated course scheduling with other campuses, designing a common course syllabus, competitive admission, designing a common course curriculum; changed entrance requirements/prerequisites to program, e.g., require completion of MTH 151 or ENG 111 before entering program, changed GPA requirement; requirement of computer competency test before program placed.
	Course Revision (CR)	Revised existing course or courses; added or revised assignment, tests, readings, projects; modified assignment; modified course content, changed textbook; added or modified study guides, checklists, or other course handouts; revisited course topics for greater comprehension; emphasized/improved content; posted material online; added rubric; added review session or practice test; revised time spent on topic, remediation.
	Pedagogy (P)	Revised methodology of delivering course material, e.g., less lecture, more student involvement, more interactive or experiential activities (lab); integrated learning technology (video, Blackboard), smaller class size, added or replaced some in person courses with on-line or hybrid courses (differs from offering entire degree program on-line); added peer learning methods.
	Subject Matter Expert Feedback (SMEF)	Sought recommendations from external and internal stakeholders, e.g., employers, on-site clinical coordinator/supervisor, program advisory board/committee, accreditation body, faculty cluster, program review.
Program Resources	Financial (F)	Requested additional fiscal resources; allocated funds from other budget area to focus on achieving SLO.

	Human Resources (HR)	Provided faculty or adjuncts with development or training, e.g., faculty attend teaching workshops or conference to keep current with industry changes; hired new faculty.
	General Resources (GR)	Utilized external partners as guest speakers or resources for students; physical resources, e.g., new software, computers, open lab time, expansion of physical space.
Co-Curricular Resources	Co-Curricular (Co-C) Opportunities	Coordinated opportunities to engage in learning outside classroom: e.g., faculty and students interaction outside classroom; optional field trips; internships (if not a part of course), social gatherings, career fairs, speakers, study sessions, participation in professional or student organizations.
	Academic Support/ Advising (AS)	Connected students with peer tutors; referred to NOVA Academic Support Resources like Writing Center, Science Lab, Math Lab; referred student to see academic advisor, counselor; improved or increased faculty advising and guiding students on degree related topics; program placement, transfer info sessions for 4 year colleges; orientation activities.
College Level	Dual Enrollment (DE)	Allowed students to take program courses during high school.
	Articulation Agreement (AA)	Increased number of transferrable credits to specific 4 year institutions; Agreement with 4 year institution to accept NOVA graduates; change/update transfer requirements with transfer partners.
	Recruitment/ Marketing (R/M)	Efforts to increase access, e.g., outreach to high schools, non-traditional students, non-declared students.
CLO Assessment Process	CLO Assessment Change (AC)	Changed or added to the assessment method for the SLO; broke out SLO components and assessed those individually.
	Data Analysis Method Change (DAC)	Changed or modified data analysis method, e.g., developed a new rubric; added indirect measures such as surveys or student self-assessment.
	Core Learning Outcome Change (CLO)	Refined or modified student learning outcome(s).
	Target Increased (TI)	Increased target for success, e.g., increased the target number of students achieving a certain score on an assessment from 70% to 80%; increased the target assessment score from 60% to 70%.
	Target Decreased (TD)	Decreased target, e.g., decreased the target number of students achieving a certain score on an assessment from 90% to 80%; decreased the target assessment score from 100% to 90%.
	Target Change (TC)	Target was created/determined; target was revised or modified to be more clear or specific; target was changed (e.g., changing graduation target from percent/number increase per year to a percent of program placed students each year).
	Sample Size (SS)	Improved/increased sample size, e.g., assessed more sections of a course; assessed more courses for the same SLO; increased faculty/campus participation in assessment.
	Communication on Assessment Process (C)	Communicated with faculty to clarify or revise the assessment process; discussions/training about implementing the assessment (e.g., standardizing processes and procedures).
Other	Other (O)	Please specify

Table A18. Use of Results by Major Category: 2017-2018

Use of Results Major Categories												
	Curriculum-Specific		Program Resources		Co-Curricular Resources		Assessment Process		College-Level		Total	
	#	%	#	%	#	%	#	%	#	%	#	%
Program	127	55.0	5	2.2	25	10.8	73	31.6	1	0.4	231	100
Discipline	18	35.3	3	5.9	5	9.8	25	49.0	0	0.0	51	100
Total	145	51.4	8	2.8	30	10.6	98	34.8	1	0.4	282	100

Table A19. Use of Results by Subcategory in Descending Order: 2017-2018

Subcategory	Number of Changes	% of Total
Course Revision	81	28.7
Pedagogy	52	18.4
Communication on Assessment Process	42	14.9
CLO Assessment Change	32	11.3
Academic Support/Advising	26	9.2
Sample Size	12	4.3
Curricular Change	7	2.5
Data Analysis Method Change	7	2.5
Subject Matter Expert Feedback	5	1.8
General Resources	5	1.8
Co-Curricular Opportunities	4	1.4
Target Increased	3	1.1
Human Resources	2	0.7
Financial	1	0.4
Recruitment/Marketing	1	0.4
Core Learning Outcomes Change	1	0.4
Target Decreased	1	0.4
Dual Enrollment	0	0.0
Articulation Agreement	0	0.0
Target Change	0	0.0
Other	0	0.0
Total	282	100

Table A20. Use of Results by Subcategory: Curriculum-Specific

Use of Results Sub- Category: Curriculum-Specific Professional Readiness [2019-2020]								
	Curricular Change		Course Revision		Pedagogy		Subject-Matter Expert Feedback	
	#	%	#	%	#	%	#	%
Program	5	71.4	71	88.6	48	92.3	3	60.0
Discipline	2	28.6	10	12.3	4	7.7	2	40.0
Total	7	100	81	100	52	100	5	100

Table A21. Use of Results by Subcategory: Program Resources

Use of Results Sub- Category: Program Resources Professional Readiness [2019-2020]						
	Financial		Human Resources		General Resources	
	#	%	#	%	#	%
Program	0	0.0	1	50.0	4	80.0
Discipline	1	100.0	1	50.0	1	20.0
Total	1	100	2	100	5	100

Table A22. Use of Results by Subcategory: Co-Curricular Resources

Use of Results Sub- Category: Co-Curricular Resources Professional Readiness [2019-2020]				
	Co-Curricular Opportunities		Academic Support/Advising	
	#	%	#	%
Program	4	100.0	21	80.8
Discipline	0	0.0	5	19.2
Total	4	100	26	100

Table A23. Use of Results by Subcategory: Assessment Process

Use of Results Sub- Category: Assessment Process Professional Readiness [2019-2020]																
	CLO Assessment Change		Data Analysis Method Change		CLO Change		Target Increased		Target Decreased		Target Clarified		Sample Size		Communication	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Program	27	84.4	5	71.4	1	100.0	3	100.0	0	0.0	0	0.0	8	66.7	29	69.0
Discipline	5	15.6	2	28.6	0	0.0	0	0.0	1	100.0	0	0.0	4	33.3	13	30.9
Total	32	100	7	100	1	100	3	0.0	1	0.0	0	0.0	12	100	42	100

Table A24. Use of Results by Subcategory: College-Level

Use of Results Sub- Category: College-Level Professional Readiness [2019-2020]						
	Dual Enrollment		Articulation Agreement		Recruiting/Marketing	
	#	%	#	%	#	%
Program	0	0.0	0	0.0	1	100.0
Discipline	0	0.0	0	0.0	0	0.0
Total	0	0.0	0	0.0	1	100.0

Appendix B: Operational Definitions of Professional Readiness

Table B1. Professional Readiness Operationalized Definitions by Programs

Program Name	Operationalized Definition
100-Level Courses	
<i>Drivers Education, C.S.C.</i>	Students will be able to create a competent classroom lesson plan for Driver Education students under the age of 19.
<i>Air Conditioning and Refrigeration, A.A.S.</i>	ESCO exam on Basic Refrigeration and Charging Procedures.
<i>Dental Assisting, A.A.S.</i>	Students obtained and recorded vital sign measurements after being trained throughout the semester.
<i>Diagnostic Medical Sonography, A.A.S.</i>	Understand the documentation guidelines for various providers and disciplines; Apply policies, regulations and standards to the management of health information. Determine compliance of health record content with the organization.
<i>Health Information Management, A.A.S.</i>	Understand the documentation guidelines for various providers and disciplines; Apply policies, regulations and standards to the health information. Determine compliance of health record content within the organization.
<i>Personal Training, C.S.C.</i>	Students will be able to demonstrate correct procedures for cardiopulmonary resuscitation and use of an automated external defibrillator (AED).
<i>Engineering Technology, A.A.S.</i>	Students will be able to demonstrate interpersonal/human relations skills to promote and complete prescribed project tasks and meet project goals and objectives.
<i>Information Technology, A.A.S.</i>	Be able to define OSI reference model and layers.
<i>Horticulture Technology, A.A.S.</i>	Use library, internet, and professional resources to prepare proper horticulture information to prepare and write an informational, research, or opinion paper.
<i>Nursing, A.A.S.</i>	Practice professional behaviors that encompass the legal/ethical framework while incorporating self-reflection, leadership, and a commitment to recognize the value of life-long learning.
<i>Public History & Historic Preservation, C.S.C.</i>	Students will synthesize knowledge of historical preservation/public history with practical experience in the field.
<i>Cinema, A.F.A.</i>	Incorporate visual language into cinema projects.
<i>Graphic Design, A.A.S.</i>	To represent mathematical information numerically, symbolically, and visually, using graphs and charts.
<i>Liberal Arts: Theatre Studies, C.S.C.</i>	Students will be able to present material to an audience.
<i>Music, A.A., A.A.A.</i>	Students will effectively research and write topics in the areas of music/jazz and popular music.

<i>Visual Art, A.F.A.</i>	Evaluate a work of art using critical thinking and an accurate vocabulary.
200-Level Courses	
<i>Business Administration, A.S.</i>	Students will demonstrate skills important for successful transition into the workplace and pursuit of further education.
<i>Hospitality Management, A.A.S.</i>	Students will demonstrate skills important for successful transition into the workplace and pursuit of further education.
<i>Marketing, A.A.S.</i>	Students will make a sales presentation incorporating the marketing mix elements to achieve customer satisfaction.
<i>Administration of Justice, A.A.S.</i>	Rather, the question concepts are a broad overview of key knowledge requirement to measure professional readiness. For example, questions related to legal concepts, first officer on the scene (of a crime) responsibilities, and gathering evidence.
<i>Early Childhood Development, A.A.S.</i>	Knowing about and upholding ethical standards and other professional guidelines.
<i>Paralegal Studies, A.A.S.</i>	Demonstrate skills important for successful transition into the workplace and pursuit of further education.
<i>Social Sciences: Teacher Education Specialization, A.S.</i>	Students will describe the requirements to earn a professional teaching license in the state of Virginia including endorsement courses, professional courses and required assessments.
<i>Substance Abuse Rehabilitation Counselor, Certificate</i>	Prepare information for use with a client that includes facts about the disease, potential for relapse, and codependency.
<i>Architecture Technology, A.A.S.</i>	Students will be able to decide and describe how buildings are constructed.
<i>Automotive Technology, A.A.S.</i>	Along with their regular SLO, students will also turn in a properly written repair order as a part of their CLO assessment to ensure they can properly communicate what is needed to repair/adjust the vehicle to the service writer or customer. Student Learning Outcome 5: Students will perform preliminary inspections and procedures needed to prepare a vehicle for alignment by checking and assessing vehicle ride height, tire condition and inflation.
<i>Construction Management Technology, A.A.S.</i>	Students will successfully identify and demonstrate skills necessary to manage human resources related to the construction industry.
<i>Dental Hygiene, A.A.S.</i>	Provide care to a diverse population who present with slight, moderate, and advanced periodontal disease and other oral conditions.
<i>Medical Laboratory Technology, A.A.S.</i>	Practice and discuss principles of professional conduct and the significance of continuing professional development.
<i>Medical Laboratory Technology: Phlebotomy, C.S.C.</i>	Approval of a national certification affirms the professional readiness to assume the complete range of tasks and responsibilities of a Phlebotomist.

<i>Respiratory Therapy, A.A.S.</i>	Clinical adjunct faculty assess students on their professionalism when students report to the hospitals for their clinical rotations.
<i>Veterinary Technology, A.A.S.</i>	Communicate effectively in an ethical, legal, and professional manner with veterinary clients and the veterinary health care team.
<i>Cybersecurity, A.A.S.</i>	Students will understand a range of career paths within cybersecurity.
<i>Information Systems Technology, A.A.S.</i>	Be able to define the OSI reference model and layers
<i>American Sign Language to English Interpretation, A.A.S.</i>	Students will demonstrate work habits, collaboration, respect, flexibility and initiative, cultural sensitivity, communication, and problem-solving skills.
<i>Professional Writing, Certificate</i>	Professional readiness in a portfolio course encompasses a wide variety of attributes ranging from respectful and timely communication to producing high quality work.
<i>Biotechnology, A.A.S.</i>	Effectively communicate scientific concepts, strategies, and opinions and present it to their peers.
<i>Social Sciences: Geospatial Specialization, A.S.</i>	Students will demonstrate skills important for successful transition into the workplace and pursuant of further education.
<i>Interior Design, A.A.S.</i>	Students were evaluated based on the development of a cover letter and resume for the Business Procedure class.
<i>Music Recording Technology, Certificate</i>	Students will complete a mock recording session with a client.
<i>Photography and Media, A.A.S.</i>	Students will create a model release form and utilize it for a photoshoot.
Both 100- and 200-Level Courses	
<i>Emergency Medical Services, A.A.S.</i>	The EMS Advanced Life Support Student will demonstrate competent effective behavior, related to emergency medical care, which is an essential attribute in order to successfully enter the workplace. This will be measured by the Program's Affective Behavior Assessment tool.

Table B2. Professional Readiness Operationalized Definitions by Disciplines

Discipline Name	Operationalization
100-Level Courses	
<i>Art History</i>	Apply information literacy skills to research art history.
<i>Communication</i>	Students will be able to orally communicate ideas to a listener with verbal and nonverbal fluency.
<i>History</i>	Students were instructed on the importance of on-time, regular attendance in the classroom, with connections made between attendance and success in work, academic, and personal work. Students will regularly attend class.

<i>World Languages</i>	Students will identify culturally and situationally appropriate expressions to use in dialogues featuring speaking in a professional setting.
200-Level Courses	
<i>Economics</i>	Students will be able to analyze graphs, tables, and statistical economic data.
<i>Geography</i>	Students will determine which technology to use to best accomplish workplace tasks and solve workplace problems. They will display proficiency with ubiquitous technology applications and use technologies successfully to communicate new information.
Both 100- and 200-Level Courses	
<i>Religion</i>	Visit a previously unfamiliar religious event/community and report on that experience.

Appendix C: Drivers Education Professional Readiness Rubric

Student Names:

Lesson Plan Template

Directions: Use this template to create a lesson plan with your partner.

- You will need to have a time designation for each component in this template. This should be indicated on your written lesson plan.

Lesson Topic:

1. SOL's covered in the lesson: (PowerPoint Slide #1)

2. Lesson Objective: (PowerPoint Slide #1)

3. List the materials needed for your lesson: no slide required

4. Agenda: (PowerPoint Slide #2) list what the students will be learning today:

5. Bell Ringer/HOOK (duration?): (PowerPoint Slide #3) What can students do in the first few minutes of class to get them interested/thinking about the topic?

6. Introduction (duration?): Tell students what they are going to learn and your objectives. Outline why students should learn this material. (PowerPoint Slide #4- you can include exactly what you're writing here on a slide...add a picture or detail to make it interesting :)

7. Content (duration?): Describe what content the students should be learning during the lesson. (PowerPoint Slide #5-you will have 1-2 slides of content for your lesson. You'll quickly go over this material with the student prior to starting your anchor activity).
(List the key content from the Modules. Write the slides numbers and the basic content being taught in your lesson)

8.Guided Practice/Activity (duration?): How can you teach us the material through an activity? HANDS ON – CLASS INVOLVEMENT!

Provide Bulleted Directions:

(Provide specific directions on how your activity is going to be performed. Please be as detailed as possible.)

Modification: What will be your **modification**?

9. Assessment: How will students demonstrate what they have learned?

Formative: What will you do with the class as a formative assessment. **BE SPECIFIC!!!**
Remember, your formative assessment can be part of your anchor activity OR closure.

Summative: On the last page of your written lesson plan, include the summative assessment. **The students will NOT take the quiz during your presentation.**

- 10 question quiz on the topic content. ***Include the answers to your assessment.***

10. Closure (duration?): Review & summarize what has been learned.

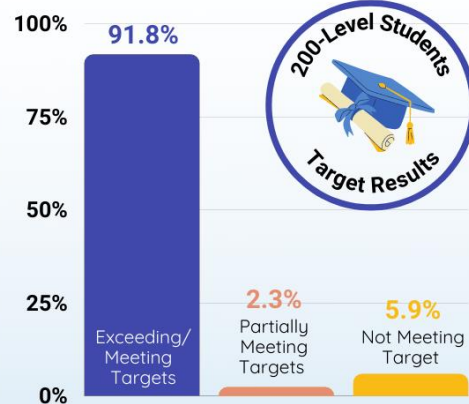
Appendix D: Biotechnology Professional Readiness Rubric

BIO 255 Module 1 Assignment-Spreadsheet and Word Rubric			
Criteria	Ratings		Pts
Spreadsheet - Organization of Data	10.0 pts Meets Expectations The data should be logically organized. Formatting such as color, borders, bold etc. should be used to guide a reader's eyes to important data.	0.0 pts Does not Meet Expectations	10.0 pts
Spreadsheet - Correct and accurate use of formulas	25.0 pts Meets Expectations Use the functions and formulas in the spreadsheet programs to do the analysis and calculations. Each cell will be evaluated for the proper use of formulas. DATA reported in the spreadsheet should NOT be calculated outside of the program.	0.0 pts Does not Meet Expectations	25.0 pts
Spreadsheet - Presentation of Charts	15.0 pts Meets Expectations Every chart created in this assignment will have an X and Y axis. These should be properly labeled. Additionally each chart should be titled and contain other information as indicated in the provided assignment guide.	0.0 pts Does not Meet Expectations	15.0 pts
Word - Formatting of Document	10.0 pts Meets Expectations Properly formatted using the screen shot provided in the assignment guide.	0.0 pts Does not Meet Expectations	10.0 pts
Word - Description of research project and experiment	8.0 pts Meets Expectations Based on the research article, and in your own words, provide background necessary for a science peer to understand your report.	0.0 pts Does not Meet Expectations	8.0 pts
Word - Insert Chart into document	2.0 pts Meets Expectations Presence of the same chart created in the spreadsheet program, transferred by copy/paste, screen shot etc.	0.0 pts Does not Meet Expectations	2.0 pts
Word - Analysis of Results	10.0 pts Meets Expectations Meaningful and accurate interpretation of analyzed data as guided by the research article provided in the assignment guide.	0.0 pts Does not Meet Expectations	10.0 pts
Total Points: 80.0			

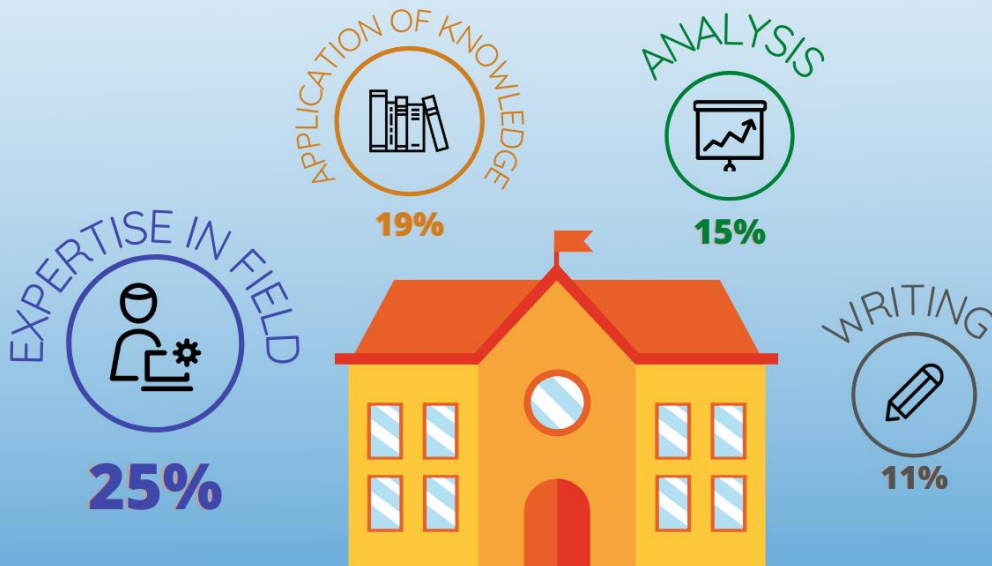
PROFESSIONAL READINESS

A NOVA Core Learning Outcome

The ability to work well with others and display situationally and culturally appropriate demeanor and behavior.



What does Professional Readiness mean at NOVA?



PATHWAY TO THE AMERICAN DREAM—NOVA’S STRATEGIC PLAN 2017-2023

THE NOVA COMMITMENT

As its primary contributions to meeting the needs of the Commonwealth of Virginia, Northern Virginia Community College pledges to advance the social and economic mobility of its students while producing an educated citizenry for the 21st Century.

THE STRATEGIC PLAN GOALS AND OBJECTIVES¹

To deliver on this commitment, NOVA will focus its creativity and talent, its effort and energy, and its resources and persistence, on achieving three overarching goals—success, achievement, and prosperity. It will strive to enable **Every Student to Succeed, Every Program to Achieve, and Every Community to Prosper**. These strategic goals are grounded in our college’s commitment to equity, excellence, empathy, evidence, and economic and social mobility (NOVA’s 5Es).

GOAL 1: Every Student Succeeds

- **Objective 1:** Adopt a college-wide approach to advising
- **Objective 2:** Achieve equity in student outcomes

GOAL 2: Every Program Achieves

- **Objective 3:** Establish comprehensive, fully-integrated, Informed Pathways (high school to NOVA to four-year college/university) for every program
- **Objective 4:** Sustain and, where needed, establish effective, equity-minded NOVA collegewide processes, protocols, policies, and accountabilities for services and programs
- **Objective 5:** Align NOVA’s culture, structure, and talent management/development with its access and equity mission and commitment to inclusive excellence
- **Objective 6:** Stabilize, grow, and sustain resources required to support mission and innovation

GOAL 3: Every Community Prospers

- **Objective 7:** Elevate and empower NOVA as the region’s leading workforce provider across all essential and high demand industry sectors

¹ Strategic Plan Objectives were revised in Fall 2020.

NOVA

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