

Understanding Student Experiences with Commercial Contract Cheating and Other Outsourcing Behaviours

Research Report

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Statements and Declarations

The authors have no conflict of interest/competing interests to declare that are relevant to the content of this report.

Ideas and opinions represented in this research report are those of the researchers.

All authors contributed to the study conception and design. Material preparation, data collection, and analysis were performed by Corrine D. Ferguson, Margaret A. Toye, Christina Carver, and Tonisha Pictin. Statistical procedures were completed by Corrine D. Ferguson. The first draft of the report was written by Corrine D. Ferguson and Margaret A. Toye, and all authors commented on previous versions of the report. All authors read and approved the final report.

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Abstract

Purpose: The primary goal of the project was to better understand post-secondary student experiences of contract cheating and the stress students encounter while completing their programs.

Methods: Survey research methodology, using well-established measures from contract cheating research and research on the stress process were used to collect closed and open-ended responses from career program learners in a community college in Alberta. Responses were collected in Survey Monkey, an online survey tool, from 916 participants in October 2021.

Results: Survey results overall indicated student involvement in contract cheating. Differences between commercial contract cheating and sharing behaviour were revealed. High levels of stress were reported, and type of stress varied across contract cheating behaviour.

Implications: The results of this study add to the continually growing body of knowledge of academic integrity in Canada. They will also expand on knowledge of the stress students experience and the personal and social resources they have access to while completing their programs and how this may relate to contract cheating.

Key Words: contract cheating, academic integrity, academic dishonesty, plagiarism, stress

Introduction

This research project involved a collaboration between the Alberta Council on Academic Integrity (ACAI) and Bow Valley College. The research explored post-secondary student experiences of contract cheating and stress students encounter while completing their programs.

Project Objectives

The objectives of this research project were developed in response to discussions that took place between collaborators during a meeting in January 2021. The objectives were published in the research project brief in April 2021 (Ferguson et al., 2021).

The objectives of this research project were to:

1. Address the need for more information about contract cheating in Alberta that will inform / advocate for policy to protect students.
2. Involve students as partners in research to develop a sense of agency around academic integrity.
3. Expand research by exploring stressors and resources outside the educational context toward a more comprehensive understanding of contract cheating.
4. Inform college communities toward the development of supports for students.

Research Questions

To meet these research objectives, we posed the following as a general research question to guide this research:

- What are post-secondary student experiences with contract cheating?

To answer this broad question, we posed six specific research questions:

1. How prevalent is contract cheating at a community college in Alberta?
2. How do students engage in contract cheating?
3. What are student perceptions of support provided by teaching and learning at the college?
4. How do learners who engage in contract cheating experience stress?
5. What personal and social resources do those who engage in contract cheating have access to?
6. How can including students as partners in research develop a sense of agency around academic integrity?

Note that RQ4 and RQ5 deviate from those specified in the project brief (Ferguson et al., 2021). They have been modified to clarify that we sought to describe experiences, not to explore causal relationships.

To address the research questions, the project involved two parts.

Part A: An online self-report survey of post-secondary student behaviours. Questions also included demographic information, as well as information regarding stressors, and access to personal and social resources. Data collected from this survey addressed RQ1 through 5. A timeline of the project can be found in Appendix C.

Part B: Student Researchers were asked to complete a short survey prior to undertaking the research and then again at the conclusion of the research. Questions focused on their pre and post knowledge of contract cheating and their experiences as partners in research. Data collected from student researchers will address Research Question 6. As Part B requires that student researchers have completed their role in the main project (after their term as student researchers is over) following research ethics protocol, Part B of this research is currently underway and was not complete at the time of writing this report.

Literature Review

We began this research project with the intent to contribute to the much-needed knowledge of contract cheating in Canada as at the time there was little published on the topic (Eaton & Edino, 2018; Lancaster, 2019). However, since then there has been significant contributions to this body of knowledge from key researchers across the country, many of which have been captured in Eaton & Christensen Hughes' (2022) recent publication of *Academic Integrity in Canada: An Enduring and Essential Challenge* (first in a series). In the brief review that follows we identify important contributions and gaps in research on contract cheating which this study has attempted to fill.

Research on academic dishonesty and contract cheating in Canada has been influenced by foundational early work completed by Christensen Hughes & McCabe (2006). More recent work on violation behaviour has since been published (e.g., Jurdi, Hage, & Chow, 2011; Eaton et al., 2019; Rossi et al., 2019; Stoesz & Los, 2019; Oluwagbohunmi et al., 2021; Usick & Stoesz, 2021). Some of this work has focused on educational interventions (e.g., Stoesz & Los 2019) while other work has focused on types of commercial contract cheating services (e.g., Kurz & Chibry, 2021; Samula & Martin, 2021), student and faculty perspectives (e.g., Oluwagbohunmi et al., 2021; Eaton et al., 2020) and institutional policy (e.g., Stoesz et al., 2019).

Research focusing on explaining contract cheating has found that students report stress as one reason for engaging in this behaviour (Newton, 2018; Selemani et al., 2018) but until recently little work has focused specifically on stress and academic integrity. Studies that have been published from the disciplines of criminology (e.g., Smith et al., 2013; Rundle et al., 2019) or psychology, with the theory of planned behaviour being a common framing (e.g., Tindall et al.,

2021). Recent publications have also pointed to the importance of focusing on mental health and academic integrity (Eaton & Turner, 2020).

Stress process model research, rooted in the sociology of mental health, is plentiful and the model is applied to many outcomes including psychological (e.g., Badawy & Scott, 2020; Anderson et al., 2021), physiological (e.g., Horowitz, 2017; Cohen et al., 2019), behavioural (e.g., Christensen et al., 2017), and social (e.g., Leopold, 2018) outcomes. Studies of behavioural outcomes have focused on alcohol and substance use. Inside the educational context stress process research has included outcomes such as general wellbeing and life satisfaction (e.g., Giancola et al., 2009), and college burnout (e.g., Lucier-Greer et al., 2018).

It was our intent to fill in the gaps and contribute to two bodies of research; adding to what we know about stress and academic integrity by applying the stress process model and extending stress process model research to include a new behavioural outcome, that of contract cheating in post-secondary education.

Methodology

This research project used survey research design to collect quantitative and qualitative data to answer our research questions.

Participants

The overall population of learners enrolled in career programs at the college in October 2021 was estimated at 6,272 potential respondents across five schools. Estimates were based on program enrollment data accessed by one lead researcher (MAT). Table 1 shows the number of learners in each school and proportion of the total population.

Table 1. Number of Career Program Learners by School

	Population	
	%	<i>n</i>
School of Community Studies (Social Work, Justice, Addiction, Disability, Early Childhood Education, Child and Youth, Education Assistant, Health and Human Services Management)	26.0	1,630
Chiu School of Business (Legal Assistant, Business Administration, Human Resources, Veterinary Office, Medical Office, Hospital Unit Clerk)	36.9	2,317
School of Health and Wellness (PN, Pharmacy Technician, Health Care Aide, Recreation Therapy)	28.1	1,763
School of Technology (Information Technology, Software Development, Interior Decorating, Digital Design, Cyber Security, Kitchen and Bath Design)	7.7	483
Open Studies	1.3	83
Total	100.0	6,272

*Note: A list of career programs was included for each school.

Inclusion Criteria

As the aim of the research was to capture experiences with contract cheating and stress at the post-secondary level, Bow Valley College career program students and Open Studies students registered in Fall 2021 were included in the research. Prior to the research consent was granted to access learner email addresses by program Deans. Institutional email addresses (MyBVC email addresses) were obtained through the student information system by one lead researcher (MAT) and an administrative assistant.

Exclusion Criteria

Our study excludes learners who were on wait lists for career programs, learners who were registered in programs that began in Winter, Spring, or Fall 2022, and learners in the School of Foundational Learning, School of Global Access, and School of Continuing Learning.

Research Ethics Board Approval

The Research Ethics application for this project was submitted May 2021 and approval was granted in June 2021 (see Appendix B). To fulfill REB requirements one lead researcher (CDF) submitted a certificate of completion of the TCPS2 Core tutorial. Student researchers consented to a confidentiality agreement prior to the start of the research project. Note that one lead researcher (CDF) held the position of Vice Chair, Research Ethics Board and did not take part in the review of the application.

Protection of Privacy

Due to the sensitive nature of the topic under study and potential resistance to self-disclose violation behaviour because of fear of formal repercussion by the institution it was imperative that we provided a safe environment for learners to share their experiences. To do so we focused on protecting respondent's private information by restricting access to contact information, data files, and communication as well as ensuring survey responses were not identifiable.

Student researchers played a pivotal role in creating this environment as they were involved in the recruitment of participants and acted as the point of contact during the administration of the survey.

Informed Consent

The consent protocol for the study followed the guidelines set out by TCPS2 (2018) and efforts were made to ensure consent was free, informed, and ongoing.

At the time of the study, lead researchers (CDF, MAT) held positions of influence at the college (instructor, associate dean). To eliminate the possibility of a power imbalance and perceived pressure to participate in the survey, all communication with potential and actual respondents was completed by student researchers. Initial contact with the participants was established by email sent from the project email address. The email introduced the survey, its purpose, highlighted the type of data collected, the voluntary nature of participation, assurances of anonymity, risks and benefits, and remuneration. A copy of the consent form was attached to the email to give students opportunity and time to review and consider if they wanted to participate in the survey. When students accessed the survey from the link, they entered the landing page where they were advised again of the voluntary nature of their participation, assurances of anonymity, purpose of the research, and how the information would be used. Consent was established when respondents clicked "Next" and entered the survey.

To ensure respondent anonymity no personal identifying information was collected in the survey or housed in the raw data file. This meant that once students consented to participate and entered the survey itself, their information could not be identified and therefore could not be withdrawn. This was clearly stated in the consent form. Participants were reminded at regular intervals throughout the survey that all responses were anonymous. Participants also had the option of not answering questions they did not want to answer (i.e., there were no forced answers) and this was communicated in the consent form and on the landing page of the survey.

Modifications to the Application

The following updates were made to the REB application:

- Names of student researchers and final recruitment scripts, particularly the recruitment video created by student researchers, was submitted to REB and approved October 15, 2021.
- The updated questionnaire, following the pretest, received REB approval October 25, 2021.
- A modification request to change the timing and number of reminder email and an addition to the recruitment protocol to include in-person and online recruitment completed by student researchers was approved October 26, 2021.

Survey Instrument

Survey Development

Construction of the survey instrument was guided by previous research on academic integrity and the stress process model, and the research questions specific to this survey. We created the instrument to better understand post-secondary student experiences of contract cheating and stress students encounter while completing their programs (see Appendix A). Lead researchers (CDF, MAT) in collaboration with co-investigators, members of the Alberta Council on Academic Integrity, Contract Cheating working group (SEE, SB) identified topics to be included in the survey. Note that co-investigators represent experts in the field of academic integrity. Measures commonly used in both academic integrity research (McCabe, n.d.; Christensen Hughes & McCabe, 2006; Bretag et al., 2019; Rundle, Curtis & Clare, 2019; Awdry, 2021) and research on the stress process model (Pearlin & Schooler, 1978; Barerra, Sandler & Ramsay, 1981; Pearlin et al., 1981; House & Kahn, 1985; Zimet et al., 1988; Pearlin, 1989; Mattlin et al., 1990; Mirowsky & Ross, 1991; Turner et al., 1995; Krause, 1997; Perry et al., 2001; Avison et al., 2007; Lee & Cohen, 2008; Thoits, 2011; Pearlin & Bierman, 2013; Wheaton et al., 2013; Acharya et al., 2018; Grace, 2021) were used.

For our measure of behaviours, we used the Academic Integrity Violations Inventory from the McCabe Academic Integrity Questionnaire (2003) (McCabe, n.d.) (see Appendix D). This is a widely used measure in academic integrity research more broadly (e.g., Harris et al., 2020; Kasler et al., 2019) and the instrument has been used to assess academic integrity in the Canadian context (Jurdi, Hage, & Chow, 2011; Stoesz & Los, 2019). The inventory was modified to reflect college norms and gender equity. New items were added to capture behaviours common today and documented in recent research (e.g., behaviours related to file sharing sites, e-proctoring) (Lancaster & Cotarlan, 2021; Gonzalez-Gonzalez et al., 2020). Following what has been done in previous research, behaviours were then grouped based on source (i.e., commercial contract cheating, sharing, and individual behaviours) (Bretag et al., 2019).

A stress inventory was developed using various types of events and strains found to be significant and commonly used in stress process model research (see Appendix E). Included in the inventory were stressors defined by role domain (student, work, family) (Turner et al., 1995; Avison et al., 2004; Acharya et al., 2018), duration (life event, chronic strain) (Turner et al., 1995; Avison et al., 2004), reference (personal, network) (Thoits, 1983), interaction (role conflict, role strain) (Pearlin et al., 1981; Pearlin, 1989; Lee & Cohen, 2008), and intensity (traumatic life adversities) (Turner & Lloyd, 1995).

Lead researchers and co-investigators met throughout the questionnaire development process (April to July 2021) to determine final items and questions to be included in the instrument as well as comment on question tone and wording.

Pre-testing

A pre-test of the survey instrument was completed in July 2021. The pre-test team included 2 experts in the field of academic integrity (SEE, SB), 2 lead researchers (CDF, MAT), 2 student researchers (CC, TP) who are representative of the sample under study, 2 college instructors, and 1 applied research representative at the college.

The pre-test procedure was guided by the cognitive interview approach followed by Hilton (2017) (modified procedure originally created by Willis, 2005). Members of the pre-test team were sent a self-complete checklist to assess each question. The checklist focused on question wording to detect readability, level of language, bias, clarity, and sensitivity. Questions related to the structure of the survey instrument were also completed by the team (e.g., survey length, question format, section ordering, skip logic). Short follow-up interviews with the student researchers took place to further clarify comments.

Examination of the pre-test responses was compiled by one lead researcher (CDF) and changes were made to the instrument. The instrument was then entered into Survey Monkey in August 2021 and pre-tested once more to ensure accuracy of transference. The final survey instrument was submitted to the REB for approval in October 2021.

Final Survey

The final survey included both closed and open-ended response questions that gathered information in the areas of demographics, knowledge of policies, perception of the teaching and learning environment, student norms, personal and social resources, stress, and academic integrity violations.

Procedures

Participant Recruitment

As administrators of the survey and primary contact for potential and actual participants, student researchers sent out an initial email (introducing the survey and attaching the consent form) and four reminder emails. All communication with career program students was conducted using a project email address that only student researchers had access to.

The recruitment protocol was to send the initial recruitment email on October 21, 2022, and then on October 25 send the survey link. However, due to problems with technology and mail merges with the project email account, career program learners received a single recruitment email October 25. As day 1 response was unexpectedly low (186 completed), we decided to modify the protocol with respect to the timing and number of reminder email. We also determined that having student researchers attend classes (in-person or virtually) may also help alleviate anxiety about the survey and potentially boost the response. REB approved the Modification of Recruitment Protocol on October 26. Reminder emails were delivered October 27, November 1, November 4, and November 8 to learner MyBVC email addresses. October 26, we contacted associate deans of programs advising them that we were going to contact instructors. An email went out to current instructors of courses in career programs requesting that student researchers attend their class to discuss the survey. Student researchers attended 13 classes in total. At least one class from each school of program was represented.

In addition to email recruitment, a short notice about the survey was published in the Student eNews in the October 18, 25, and November 1 issues. A recruitment graphic (developed by college marketing) went into program pages in Brightspace D2L on October 25 and November 1. SABVC, the college's student association, shared a notice about the research project on their social media platforms.

The student researchers also created a recruitment video which received 158 views (minus researcher views) throughout the survey (as of November 1). This video was shared in Student eNews, on program pages in Brightspace D2L, and on SABVC's Facebook and Twitter feeds.

Incentive

At the end of the survey, participants were invited to enter a draw for one of four \$50.00 gift cards for Amazon or Tim Horton's by clicking on a link that took them to a secure Microsoft Form where they entered their email address. Student researchers had access to the Form and email addresses and distributed electronic gift cards to the addresses provided in December 2021. Participants were informed of the remuneration in the recruitment email, reminder notices, in the consent form as well as on the landing page of the survey.

Analysis and Results

Data collected in Survey Monkey was exported in November 2021 to SPSS for cleaning and analysis. As the survey consisted of closed-ended and open-ended responses, data was analyzed statistically for closed-ended responses and open-ended responses were reviewed, coded by theme, and analyzed.

Data Cleaning

Data cleaning (completed by CDF) involved running frequency distributions, descriptive statistics for all continuous variables, assigning variable labels, value labels and formats for each variable, checking for outliers and inconsistencies, defining missing values, identifying skip patterns and multiple response questions, coding 'other' response categories, recoding and computing new variables, creating scales and indexes, documenting all actions in the data set, and creating a codebook.

Response Rate

A total of 6,271 survey invitations were sent using institutional email addresses for all learners registered in a career program at the college as of October 2021. Of the those sent, 10 email invitations could not be delivered. 916 learners took part in the survey representing a 14.63% response rate ($n = 916/6261$).

Response rates to each of the questions varied and so careful reporting of response rate by question and for each analysis was reported.

Missing Data

Self-report surveys of behaviours that violate academic integrity commonly have low response rates (4-10%) (McCabe, 2005; Bretag et al., 2019; Curtis et al., 2021) and missing data issues (e.g., in Tindall et al., (2021), 359 of the 1077 cases had missing values). Our survey response rate is higher than previous research at 14.63% ($n = 916/6261$). However, there is a substantial amount of missing information. Following recommendations set out by Berchtold (2019) and Gorard (2020), what follows is an analysis and explicit reporting of missing data.

Missing value procedures in SPSS were used to describe the extent, type, location, and pattern of missing data in the survey.

Summary

In Figure 1 the pie charts represent the number and percentage of missing variables (left), cases (center), and individual cells (right) which have at least one missing value. The dot pattern indicates missing data, and the striped pattern indicates complete data. The variables pie shows that 150 variables (100% of those included in the analysis) have at least one missing value. The

cases pie indicates 527 (57.53%) of the 916 cases contains at least one missing value. The values pie indicates that about 27% of all values are missing.

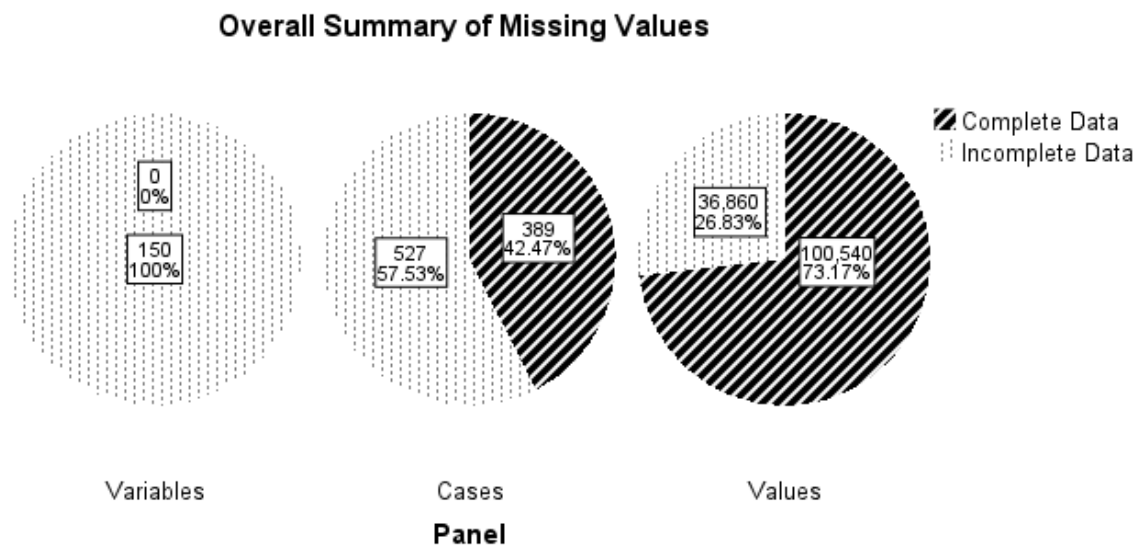


Figure 1. Summary of Missing Data by Variables, Cases, and Values

Type of Missing Data

The summary above indicates that we had a substantial number of missing values. It is important that we ascertain if the missing data occurred at random or if missing information depended on other data values in the survey. If the missing data was Missing Completely at Random (MCAR), we can say that it occurred by chance and deleting the cases with missing values would not significantly change the results.

Little's (1988) test is a widely used test to determine if data are MCAR. It estimates the means and covariances for missing and tests whether a significant difference exists between the means of different missing-value patterns. From the EM Means table, (Table 2) we concluded that the p-value is significant ($p < 0.05$) and therefore, rejected the null hypothesis that the data are MCAR.

Table 2. Little's (1988) MCAR Test

Chi-square	Degrees of Freedom	p-value
25448.737	21496	< 0.000
Significant: p-value < 0.000		

Null hypothesis: missing data is Missing Completely at Random (MCAR)

Because the data were not MCAR, we conclude that missing values were not random, that they occurred in patterns and there may have been influencer variables that could bias the results. It is likely that our missing data were Missing Not at Random (MNAR) due to the sensitivity of the topic of the survey. Exploration of the location and patterns of missing data was therefore

necessary so that we could further explain why the missing data occurred and how it may have influenced the results.

Attrition

Among the 150 variables analyzed, GPA (37.4%), Yearly Income (37%), Number of Children (34.7%), and Racialized Minority (34.4%) were those with the highest percentage missing values. Of the top 10 variables, 8 of those variables with high percentages were demographic variables which were located at the end of the survey. Variables with the lowest percentage missing were those found at the beginning of the survey (e.g., Q1 Informed about policies 0.2%, Q2 Where and how much learned about policies about 4.8%). Three of these variables may also be considered sensitive questions (GPA, Income, Racialized Minority).

Table 3. Number of Missing Cases by Survey Question

Number of Cases	Q1-Informed	Q2-Policy	Q3-Instructor Support	Q13-Commercial Contract Cheating	Q28-Sharing Behaviour	Q46-Individual Behaviour	Q55-Stressors	Q67-School	Q71-Income
389									
29									X
18								X	X
16							X	X	X
27						X	X	X	X
82					X	X	X	X	X
41				X	X	X	X	X	X
82			X	X	X	X	X	X	X
44		X	X	X	X	X	X	X	X

Table 3 shows that the number of cases with missing values increased across the survey. Two participants gave consent but did not complete any questions, 124 participants completed the first 3 questions and 167 completed the first 12 questions. Attrition after Q12 occurs at important points in the survey; 82 respondents drop out of the survey after the commercial contract cheating question, 27 after the sharing question, and 16 after the individual behaviour question.

Jointly Missing

Figure 2 below charts the patterns of missing values by variable with high percentages of missing. Each row shows groups of cases with the same patterns of missing values. Because we have clusters of missing together across the variables it is further evidence of the increase in missing as the survey progresses.

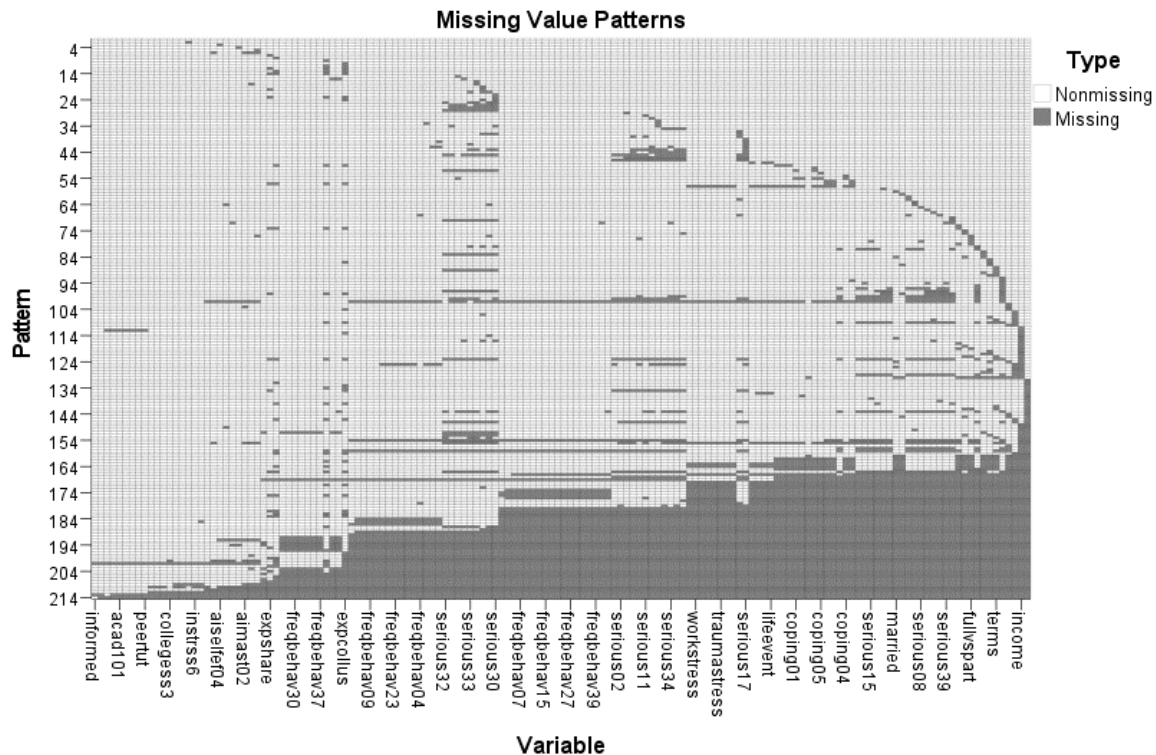


Figure 2. Missing Values Pattern Chart

It also suggests that we have groups of variables that have jointly missing values. For example, the frequency of commercial contract cheating, sharing, and individual behaviours and the perceived seriousness of these behaviours occurred together.

As shown in Table 4, Academic Integrity Violation behaviour questions for both frequency and seriousness showed high percentages of missing values (21.84% - 33.40% missing values) and occurred together. This suggests that the participants that chose not to disclose information about the frequency of their behaviours also did not include their perceptions about the seriousness of the behaviours. The two sections involved sensitive questions and were located next to each other in the survey.

Table 4. Percentage Missing Values for Frequency and Seriousness for Commercial Contract Cheating, Sharing, and Individual Behaviours

	Commercial Contract Cheating^a	Sharing Behaviours^b	Individual Behaviours^c
Frequency of Behaviours	21.84%	27.94%	30.61%
Perceived Seriousness of Behaviours	29.07%	31.64%	33.40%

^a Percentage missing values is an average of the missing values across 9 commercial contract cheating behaviours.

^b Percentage missing values is an average of the missing values across 14 sharing behaviours.

^c Percentage missing values is an average of the missing values across 17 individual behaviours.

The percentage of missing values in Table 4 show an increase with each subsequent question about cheating behaviours for both frequency and seriousness. Note that commercial contract cheating questions about frequency and seriousness occurred first in the survey (Q13) followed by sharing (Q28) and individual behaviours (Q46). Marked attrition is evident following each of these sections.

Perceived seriousness questions experience higher percentage missing values than frequency of behaviours (e.g., 33.40% compared to 30.61% for individual behaviour). As the two occurred together in the survey we suspect that the format of the question in addition to the sensitive nature of the subject matter may account for the higher occurrence of missing information.

Worth noting is the proportion of missing values in four questions that tap perceived student norms. Missing values in the perceived proportional of students at the college engaging in sharing (Q9), commercial contract cheating (Q10), plagiarizing (Q11), and collusion (Q12) are all over 19%. These questions occurred early in the survey where there were fewer missing values reported and so researchers propose that the missing information may be due to the format of the question.

Conclusions

We draw five important conclusions from the missing data analysis and offer possible explanations for why it occurred:

1. **Missing data analysis revealed considerable attrition across the survey.** Researchers acknowledge that this may be a function of the length of the survey. On average it took respondents 15:40 minutes to complete the survey, however, for those indicating they had engaged in behaviours the average time ranged from 24:20 to 26:22 minutes. Research suggests that survey length and topic is related to response rate (and resulting missing data). Fan & Yan (2010) report that surveys thirteen minutes or less seem to be the ideal length for obtaining a high response rate (p.133). Response rate and amount of missing data is also closely related to the topic under study.

2. **Respondents were leaving the survey at key points, specifically after the more sensitive questions.** Sensitive questions include those asking if they engaged in cheating behaviours, how often they engaged, and about perceived seriousness of behaviours. Despite assurances of anonymity in the data collection and confidentiality in reporting, respondents were hesitant to disclose their engagement in socially undesirable behaviours, leading to missing information. As previous research relying on self-reported behaviours has suggested, learners may fear repercussion from the institution (Tourangeau & Yan, 2007) or may actively distance themselves from behaviours that hold a powerful negative stigma (Ariely, 2012).
3. **Existence of a cumulative effect to disclosing cheating behaviours across the survey may also explain exit points.** With each subsequent behaviour section (frequency + seriousness) respondents were less likely to disclose the information about their behaviours and/or leave the survey. Although care was taken to vary the question format across the survey, this may reflect respondent fatigue in answering similar questions. However, respondents were more likely to report engaging in one type of cheating behaviour and not several types suggesting that the missing information may have also been reflective of well evidenced underreporting of cheating behaviours found in the literature (Tourangeau and Yan, 2007). Learners may wish to avoid being perceived as engaging in multiple types of behaviours that violate academic integrity.
4. **Missing data particularly for the perceived seriousness and perceived student norms questions (Q9-12) may also be a direct result of the question format in Survey Monkey not detected in the pre-test.** Respondents were given a behaviour and asked to report on frequency and seriousness side by side and therefore seriousness may have been overlooked depending on the device they used to complete the survey. Similarly, Q9-12 was constructed as a slider question for respondents to choose between 0 and 100% (with the option of manually entering a percentage). Respondents may have had difficulty using the slider option and may not have realized they could manually enter the number.
5. **Missing data does not occur at random and is likely due to the sensitivity of the topic of the survey.** As missing do not appear to be random we conclude that missing data may influence the results of the survey. We follow the lead of previous research and clearly report response rates for each question and analysis (e.g., Bretag et al., 2019). Where possible we demonstrate the impact of missing values on the final results (i.e., comparison of complete and incomplete cases). For example, we see that the means for perception of student norms (Q9-12) differ for missing and present (observed from the separate variances t-test); means for missing data tend to be higher than means for present suggesting more conservative final results on these variables.

Quantitative Analysis

Data analysis was completed by both lead and student researchers (CDF, MAT, CC, TP). Analysis of closed-ended responses were presented in the form of frequencies (and percentages). Appropriate parametric and non-parametric tests (i.e., based on whether the data met the underlying assumptions) were completed to compare groups of interest (e.g., school of program, types of behaviours) for some survey items.

Qualitative Analysis

Student researchers (CC, TP) performed a content analysis on open-ended responses for why respondents engaged in commercial contract cheating behaviours (Q16) and sharing behaviours (Q32), coding the responses based on theme following steps outlined by Erlingsson & Brysiewicz (2017). Open-ended responses to 'other' categories were reviewed and coded by one lead researcher (CDF) (including Q2, 17 - 20, 33, 34, 36, 51, 55, 60, and 63). At the time of this report qualitative analysis of overall experience of commercial contract cheating services (Q21), overall experience of sharing with someone you know (Q37), main reason why they do not engage in commercial contract cheating (Q27) and sharing behaviours (Q45) had not yet been completed.

Survey Validation

Intercoder reliability (ICR) was assessed for the content analysis of responses to the reasons why learners reported they engaged in commercial contract cheating (Q16) and sharing behaviours (Q32) completed by the two student researchers (CC, TP). To assess ICR, we used procedures commonly followed in qualitative research (e.g., Campbell et al., 2013; O'Connor & Joffe, 2020). Student researchers independently created categories based on theme and then coded responses for each of the two questions. A comparison of the two coding schemes for each question revealed 30.4% and 41.7% common themes (respectively). This was followed by a meeting with the two coders and one lead researcher (CDF) where the differences were discussed and coding frame revised, whereby a second round of independent coding took place. The second round of the coding brought the ICR up to 81.0% and 86.8% (respectively). We are confident that the analysis of responses was performed precisely and consistently across coders and that the themes which emerged from the patterns of responses were robust such that they transcend ideas of a single researcher (O'Connor & Joffe, 2020).

Internal consistency of scales and indexes were computed to assess whether items within the scale were consistent in their measurement of the same construct. All scales met the rule of thumb of having a Cronbach's alpha of greater than 0.70 (e.g., mastery $\alpha = 0.85$, $n = 776$; self-efficacy $\alpha = 0.84$, $n = 778$) (Boateng et al., 2018).

We expected to see a significant positive relationship between perceived student norms and frequency of violation behaviour. Significant positive relationships were found between frequency of violation behaviour and perceived student involvement in sharing ($r_s(608) = .170$, $p < .001$) commercial contract cheating ($r_s(603) = .185$, $p < .001$), plagiarism ($r_s(595) = .198$, $p <$

.001), and collusion ($r_s(584) = .262, p < .001$). To see variables behaving in expected ways gives us greater confidence in our instrument.

Demographics

The average age of survey participants was 30.7 years ($n = 603$). Table 5 shows the highest percentage of participants fall between 21 and 30yrs (38.8%, $n = 234/603$) followed by 31-40yrs (31.5%, $n = 190/603$). About 14.6 % were under 20 years ($n = 88/603$) and 2.8% of participants were 51 years or older ($n = 17/603$).

Table 5. Participants' Age

Age	%	<i>n</i>
< 20 years	14.6	88
21-30 years	38.8	234
31-40 years	31.5	190
41-50 years	12.3	74
51-60 years	2.3	14
61 + years	0.5	3
Total	100.0	603

Of the 616 participants who reported their gender, 78.9% were female ($n = 486/616$), 17.4% were male ($n = 107/616$), 1.5% were transgender, non-binary/non-conforming ($n = 9/616$), and 2.3% preferred not to say ($n = 14/616$) (see Table 6).

Those married (or living with partner) and never married make up 44.9% ($n = 274/610$) and 48.0% ($n = 293/610$) of the participants respectively. Individuals who were divorced and those separated both make up 3.3% ($n = 20/610$) of those reporting marital status.

The majority participants (62.9%, $n = 376/598$) reported caring for zero (0) children in their home while just over one third reported caring for at least one child (37.1%, $n = 222/598$).

Table 6. Gender, Marital Status, and Number of Children Reported

	%	<i>n</i>
Gender		
Female	78.9	486
Male	17.4	107
Transgender	0.5	3
Non-binary/non-conforming	1.0	6
Prefer not to say	2.3	14
Total	100.0	616
Marital Status		
Married/living with partner	44.9	274
Divorced	3.3	20
Separated	3.3	20
Widowed	0.5	3
Never married	48.0	293
Total	100.0	610
Number of Children		
0	62.9	376
1 or more	37.1	222
Total	100.0	598

Over 60% of participants reported speaking English at home (60.4%, $n = 364/603$) and 39.6% spoke a language other than English at home ($n=239/603$). Of the languages spoken at home Tagalog ($n = 76$), Punjabi ($n = 31$), Spanish ($n = 22$), and Portuguese ($n = 22$) were reported most often.

Participants that self-identified as a racialized minority made up 29.1% ($n = 175/601$) of those reporting while 70.9% did not identify as a racialized minority ($n = 426/601$).

Figure 3 shows that of the 573 participants who reported their current GPA, 42.1% reported a GPA between 2.0 and 3.49 ($n = 241/573$) and 41.9% reported a GPA higher than 3.50 ($n = 240/573$).

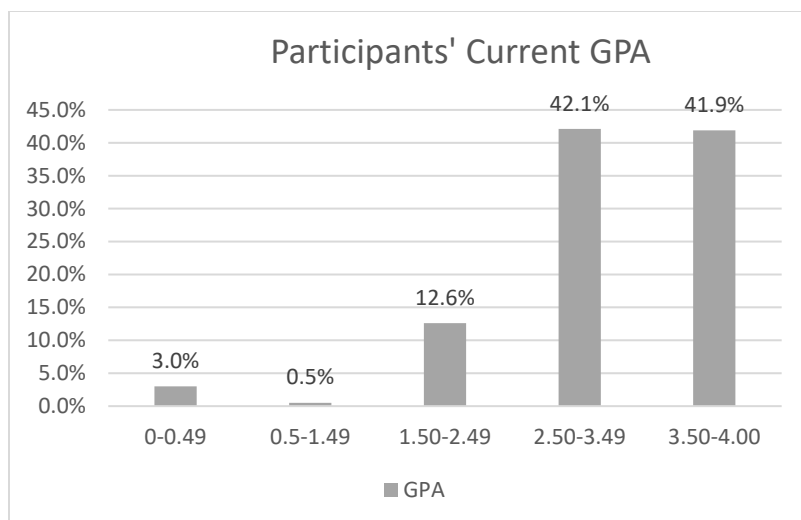


Figure 3. Participants' Current GPA (N=573)

Table 7 shows that over a third of the participants were in programs in the Chiu School of Business (35.0%, $n = 212/606$), and 29.5% were in programs in the School of Community Studies ($n = 179/606$). A comparison of the proportion of participants by school in the survey with the proportion in the college suggests that participants in the survey were slightly overrepresented from the School of Community Studies and School of Technology and slightly underrepresented from the Chiu School of Business and School of Health and Wellness.

Table 7. Percentage of Respondents by School of Program in the Survey and in the College

	Survey		Population	
	%	<i>n</i>	%	<i>n</i>
School of Community Studies	29.5	179	25.8	1626
Chiu School of Business	35.0	212	37.0	2316
School of Health and Wellness	24.8	150	28.1	1761
School of Technology	9.4	57	7.7	482
Open Studies	1.3	8	1.3	82
Total	100.0	606	100.0	6261

Over 60% of participants were domestic students (62.8%, $n = 383/610$) and over 90% were in college full-time (3 or more courses in a term) (91.1%, $n = 552/606$). The highest percentage of participants were in the first term of their program (45.4%, $n = 274/603$), 30.3% of participants had completed 1 or 2 terms ($n = 183/603$).

More than 60% of respondents work (61.6%, $n = 233/607$) and 33.8% reported they work between 11 and 20 hours per week ($n = 205/607$). Table 8 shows 46.1% of respondents reported a yearly income of less than \$15,000 ($n = 266/577$).

Table 8. Participants' Work Hours and Yearly Income

	%	n
Work Hours Per Week		
Not working	38.4	233
1-10 hours	9.7	59
11-20 hours	33.8	205
21-30 hours	7.2	44
> 30 hours	10.9	66
Total	100.0	607
Yearly Income		
< \$15,000	46.1	266
\$15,000-\$29,999	24.4	141
\$30,000-\$49,999	13.5	78
\$50,000-\$74,999	7.5	43
\$75,000-\$99,999	5.4	31
\$100,000-\$150,000	2.3	13
>\$150,000	0.9	5
Total	100.0	577

Knowledge of Policies

Overall, 94.3% ($n = 862/914$) of participants reported that they had been informed about the academic integrity policies. Chi-square and Fisher's exact tests were used to examine the relationships between being informed about the policies and full vs part-time studies, number of terms completed, and school of program. The relationship between these variables were not significant [$\chi^2(1,606) = .08, p < .781$; $p = .929$, FFHET; $\chi^2(4,606) = 5.44, p < .246$].

Just over one-half of participants reported they 'Learned a Lot' (51.2%, $n = 469/873$) from instructors, 35.2% ($n = 322/872$) from new student orientation, while fewer (14.4%, $n = 132/872$) 'Learned a Lot' from peer tutors (see Table 9).

Table 9. Percentage of Respondents that “Learned a Lot” About Academic Integrity Policies by Source of Information

Source of Information	%	<i>n</i>
New Student Orientation	35.2	322
AC101 on D2L	34.0	311
College Website	33.0	302
Student Handbook	21.7	199
Library Resources	33.4	306
Academic Success Centre	28.1	257
Peer Tutor	14.4	132
Instructors	51.2	469
Total	100.0	916

Chi-square tests for independence were used to examine the relationships between each source of information and full vs part-time studies, student status, and language. A significant association was established between full vs part-time and learning about the policies from the college website [$\chi^2(4,606) = 20.79, p < .001$] and Academic Success Centre [$\chi^2(4,605) = 11.70, p < .020$]. Respondents full-time in their studies reported learning more about the policies from the college website and from the Academic Success Centre than part-time respondents. International students compared to domestic students were significantly more likely to report that they ‘Learned a Lot’ or ‘Learned Some’ for all sources of information except for student handbook [$\chi^2(4,609) = 3.43, p = .489$]. Respondents who did not speak English at home compared to those that did, reported that they ‘Learned a Lot’ or ‘Learned Some’ for all sources of information except for student handbook [$\chi^2(4,602) = 2.30, p = .682$] and from the instructor [$\chi^2(4,602) = 6.53, p = .163$].

Kruskal–Wallis H tests found significant differences by school of program for student handbook [$H(4) = 34.138, p < .001$] and library sources [$H(4) = 27.072, p < .001$]. Pairwise comparisons using Mann Whitney U tests (correcting for Type 1 error using the Bonferroni adjustment) found School and Health and Wellness respondents reported higher median scores (*median* = 3.00) for learning about policies from student handbook compared to Community Studies (*median* = 2.00) ($U = 8839.0, p < .001$) and Chiu School of Business (*median* = 2.00) ($U = 11745.0, p < .001$). Respondents from Chiu School of Business reported greater median scores (*median* = 3.00) for learning about the policies from library resources compared to School of Health and Wellness (*median* = 2.00) ($U = 11670.5, p = .001$).

Perception of Teaching and Learning Environment

Respondents were asked to report their level of agreement (strongly disagree = 1, to strongly agree = 5) with 9 statements about the supportiveness of the teaching and learning environment.

Over 50% of respondents either ‘Strongly Agree’ or ‘Agree’ with the supportiveness of both instructors and college. About 91% ($n = 718/790$) of respondents agreed there were opportunities to approach instructors when needed and 85.8% ($n = 679/790$) felt opportunities to learn about academic integrity were widely available at the college (see Table 10). Interestingly, 88.1% ($n = 696/790$) reported that citing and referencing supports are available at the college, but just over one-half of respondents reported that instructors explained citing and referencing in class (51.2%, $n = 404/789$).

Table 10. Percentage of Respondents that ‘Strongly Agree’ or ‘Agree’ on Items Measuring Perceived Support of the Teaching and Learning Environment

Instructor and College Support	%	<i>n</i>
Opportunities to approach instructor are available	90.9	($n=718/790$)
Instructors explain policies and consequences	86.1	($n=679/789$)
Instructors explain citing and referencing in class	51.2	($n=404/789$)
Instructors talk about contract cheating in class	61.5	($n=485/789$)
Instructors monitor and discipline cheating behaviour	67.5	($n=532/788$)
Instructors explain guidelines on group work and collaboration	69.5	($n=546/789$)
Opportunities to learn about academic integrity and cheating at college are widely available	85.8	($n=679/790$)
Citing and referencing supports are at the college	88.1	($n=696/790$)
Help of student advocates on matters of academic integrity	56.3	($n=445/790$)

Perceived Instructor Support

Following procedures set out in Boateng et al., (2018), the 9 items from Table 10. were assessed to determine if a reliable and valid scale could be created (typically done in academic integrity research). An exploratory factor analysis of the 9 items revealed two factors. One clear factor included items referring to instructor support. Therefore, the first 6 items from Table 10 were used to create a perceived instructor support scale. Exploratory factor analysis revealed the 6 items formed one factor. The ratings were then averaged to create a scale, which ranged between 1 (strongly disagree) and 5 (strongly agree), and a Cronbach’s alpha calculated to

assess its reliability ($\alpha = .85$, $n = 787$). The scale exceeded the 0.70 rule of thumb which suggests that it was a reliable measure. Finally, the validity of the scale was assessed by testing a hypothesized relationship between a criterion variable and each item in the scale. Significant correlations were found between all 6 items and engaging in at least one violation behaviour ($p < .100$). The relationships were strong and in the right direction (based on previous research) which gave us greater confidence that the measure was valid. Perceived instructor support was treated as a continuous variable. This is commonly done in survey research for Likert item responses (Sullivan & Artino, 2013).

Nonparametric tests were performed as perceived instructor support did not follow a normal distribution. Mann Whitney U tests explored whether there were differences in perceived instructor support for student status, language, and full and part-time studies. International students reported significantly higher median scores on instructor support ($median = 4.00$) than domestic students ($median = 3.67$), $U = 30531.0$, $p < .001$. English respondents had lower median scores on instructor support ($median = 3.83$) than respondents who reported they did not speak English at home ($median = 4.00$) ($U = 34556.0$, $p < .001$). Full-time respondents were more likely to agree that instructor support was available ($mean rank = 310.14$) compared to part-time respondents ($mean rank = 230.17$), $U = 10944.0$, $p = .001$.

Kruskal–Wallis H tests found perceived instructor support also differed significantly by number of terms completed in program ($H(4) = 10.26$, $p = .036$). Pairwise comparisons found higher median instructor support was reported among those in their first term ($median = 4.00$) compared to those who completed 5 or 6 terms ($median = 3.33$), $U = 2623.0$, $p = .003$ (Figure 4).

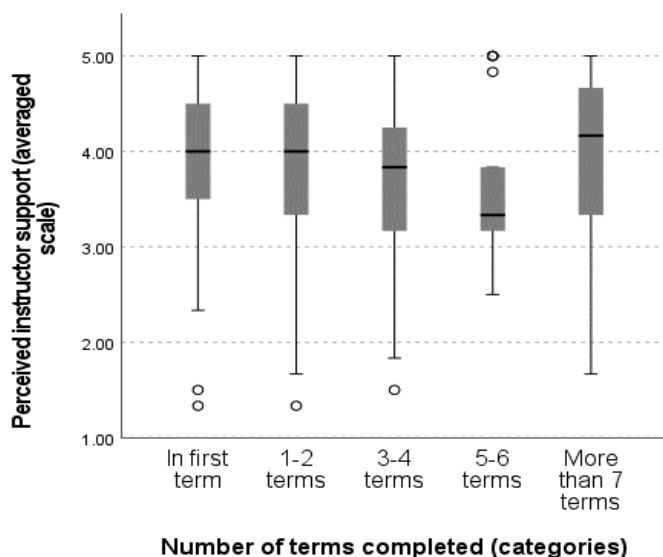


Figure 4. Perceived instructor support by number of terms completed in the program.

Perceived College Support

Significant median differences were found between student status, language, and full and part-time and one item measuring college support. Mann Whitney U tests found significant differences in the availability of help of student advocates for international ($median = 4.00$) and domestic students ($median = 3.00$) ($U = 35256.5$, $p < .001$), respondents speaking English at home ($median = 3.00$) and those who did not speak English at home ($median = 4.00$) ($U = 36282.5$, $p < .001$), and full-time ($median = 4.00$) and part-time respondents ($median = 3.00$) ($U = 12595.0$, $p = .048$). International students, those who did not speak English at home, and full-time students reported higher support on this item compared to domestic, English-speaking, and part-time respondents.

Kruskal–Wallis H tests found that agreement on opportunities to learn about academic integrity and cheating at the college significantly differed by school [$H(4) = 14.913$, $p = .005$]. Pairwise comparisons revealed Chiu School of Business reported significantly higher median agreement on this item ($median = 5.00$) than the School of Community Studies ($median = 4.00$), $U = 15229.5$, $p < .001$.

Student Norms

Participants reported the percentage (0-100%) of students at the college they believed shared information with other students, engaged in commercial contract cheating, plagiarized, and worked with other students when not permitted.

Participants reported they believed 34.2% of students at the college engaged in commercial contract cheating behaviours, 29.9% of students engaged in sharing behaviours, 28.3% engaged in collusion, and 25.1% engaged in plagiarism (see Table 11).

Table 11. Average Percentage of Students at the College Believed to Engage in Sharing, Commercial Contract Cheating, Plagiarizing and Colluding

Behaviour	%	<i>n</i>
Sharing	29.9	735
Commercial Contract Cheating	34.2	725
Plagiarize	25.1	715
Collusion	28.3	699

Significant differences in perceived student norms were found for language, student status, gender, and marital status. Participants who reported speaking English at home perceived a greater proportion of students at the college engaged in sharing ($U = 34319.0$, $p < .001$), commercial contract cheating ($U = 35498.0$, $p = .019$), plagiarizing ($U = 32493.0$, $p < .001$), and

collusion ($U = 28509.5, p < .001$) compared to those who did not speak English at home. Domestic students reported higher median percentages for perceptions of sharing ($median = 25.00$) ($U = 36459.5, p = .017$) and collusion ($median = 25.00$) ($U = 31152.0, p < .001$) compared to international students ($median = 20.00; 15.00$). Females reported higher median percentages of perception of sharing ($median = 25.00$) ($U = 26208.0, p = .040$) compared to other genders ($median = 20.00$). Non-married respondents perceived higher median percentages of perceptions of those engaged in sharing ($median = 25.00$) ($U = 38965.5, p = .029$), commercial contract cheating ($U = 37411.0, p = .009$), and collusion ($median = 25.00$) ($U = 33863.0, p = .001$) compared to married respondents ($median = 20.00; 16.00$).

Kruskal-Wallis H tests found significant differences in perceived collusion for the number of terms completed [$H(4) = 11.465, p = .022$] and perceived commercial contract cheating for school of program [$H(4) = 12.33, p = .015$]. Further pairwise comparisons using Mann Whitney U tests revealed no significant differences by terms completed. Respondents from the School of Health and Wellness ($median = 30.00$) reported significantly higher median percentages of perceived commercial contract cheating compared to the School of Technology ($median = 15.00$), $U = 2862.5, p = .002$ (Table 12).

Table 12. Median percentage of Students at the College Believed to be Engaged in Commercial Contract Cheating Behaviours by School of Program

School of Program	%	n
School of Community Studies	32.0	171
Chiu School of Business	29.0	204
School of Health and Wellness	30.0	145
School of Technology	15.0	55
Open Studies	42.0	8

Personal and Social Resources

Personal (self-efficacy, mastery, coping) and social resources (social support) found to be significant in previous academic integrity and stress process research were included in the survey. Self-efficacy refers to confidence in the ability to demonstrate skills related to academic integrity (Bandura, 1977). Respondents were asked to rate themselves from 'Not Confident' to 'Very Confident' on 5 self-efficacy items (modified version of items found in Zajacova et al., 2005).

Self-Efficacy

Table 13 shows the percentage of respondents who reported they were 'Very Confident' across the 5 items of self-efficacy. About three-quarters of respondents reported they were 'Very

Confident' completing a test on their own (76.5%, $n = 600/784$), while just under one-half of respondents were 'Very Confident' citing and referencing sources in an assignment (47.8%, $n = 377/788$).

Table 13. Percentage of Respondents 'Very Confident' for Five Items of Self-Efficacy

Self-Efficacy	%	<i>n</i>
Cite and reference sources used in a written assignment	47.8	$n=377/788$
Research for an assignment or paper	53.6	$n=420/783$
Paraphrase or summarize an author's words/ideas in an assignment	49.5	$n=388/784$
Complete an assignment on your own	74.1	$n=582/785$
Complete a test on your own	76.5	$n=600/784$

Chi-square tests of independence revealed respondents' self-identification as a racialized minority and gender were related to specific items of self-efficacy. Those self-identifying as racial minority were less confident in their ability to cite and reference sources used in a written assignment [$\chi^2(2,600) = 10.61, p < .005$] and researching for a paper [$\chi^2(2,579) = 9.71, p < .008$] than non-racial minorities. Females were more confident completing a test on their own [$\chi^2(2,614) = 6.27, p < .004$] compared to other genders.

Kruskal-Wallis H tests indicated significant differences for all items of self-efficacy across current GPA [$H(4) = 39.69, p < .001$; $H(4) = 27.17, p < .001$; $H(4) = 30.84, p < .001$; $H(4) = 19.76, p < .001$; $H(4) = 26.13, p < .001$ respectively]. Pairwise comparison using Mann Whitney U tests suggested that respondents in the highest GPA category (3.5-4.00) had higher self-efficacy scores (for all items) than those with lower GPA's (1.50-2.49) ($U = 5776.5, p < .001$; $U = 5899.0, p < .001$; $U = 5780.0, p < .001$; $U = 7060.5, p < .001$; $U = 6788.0, p < .001$ respectively) (see Table 14).

Table 14. Percentage of Participants that Reported they were 'Very Confident' on Self-Efficacy Items by GPA

	0 – 0.49		0.50 - 1.49		1.50 – 2.49		2.50 – 3.49		3.50 – 4.00	
Self-efficacy	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>
Cite and reference sources used in a written assignment	17.6	3	66.7	2	33.3	24	45.8	110	66.3	159
Research for an assignment or paper	52.9	9	33.3	1	37.5	27	53.2	126	69.2	166
Paraphrase or summarize an author's words/ideas in an assignment	35.3	6	66.7	2	33.3	24	48.3	116	64.4	154
Complete an assignment on your own	52.9	9	100.0	3	66.7	48	73.8	177	84.5	202
Complete a test on your own	41.1	8	100.0	3	63.9	46	77.8	186	85.4	205

Significant differences in self-efficacy were also found across terms completed and school of program. Respondents in their first term had greater confidence in citing and referencing sources used in written assignments ($H(4) = 27.04, p < .001; U = 19549.0, p < .001$), researching for an assignment ($H(4) = 30.54, p < .001; U = 19232.5, p < .001$), completing an assignment on their own ($H(4) = 15.36, p = .004; U = 21182.0, p < .001$), and completing a test on their own ($H(4) = 16.02, p = .003; U = 21137.0, p < .001$) compared to respondents who had completed 1 or 2 terms. Participants with programs in the Chiu School of Business were more confident in completing a test on their own compared to those in programs in the School of Community Studies ($H(4) = 19.23, p < .001; U = 16236.5, p = .001$), or Open Studies ($U = 467.5, p = .001$).

Mastery

Mastery refers to the sense of control over academic integrity (modified version of items used by Mirowsky & Ross, 1991). Respondents rated themselves from 'Strongly Disagree' to 'Strongly Agree' on 4 items that measured mastery.

Table 15. shows that 91.9% of respondents 'Strongly Agree' or 'Agree' with seeing themselves as largely responsible for academic integrity and 64.4% believed when they did poorly it was because they didn't give it their best effort.

Table 15. Percentage of Respondents 'Strongly Agree' or 'Agree' on Four Items of Mastery

Mastery	%	n
I have a great deal of control over my academic integrity	88.7	n=697/786
The more effort I put into academic integrity in my courses the better I do at them	82.7	n=647/782
I see myself as largely responsible for my academic integrity throughout my college career	91.9	n=717/780
When I do poorly with respect to academic integrity in a course, it's usually because I haven't given it my best effort	64.4	n=502/780

Mastery items were averaged to create a mastery scale ranging from 1 to 5 (strongly agree = 1 to strongly disagree = 5). The 4-item measure has been widely used in stress process research (e.g., Badawy & Schieman, 2020) and has good internal consistency ($\alpha = 0.85$).

As mastery did not have a normal distribution, nonparametric tests were used to test for differences in language, minority status, full and part-time studies, and employment status. Mann Whitney *U* tests revealed there were no statistically significant differences in median mastery scores for these factors ($U = 39748.0, p = .169$; $U = 35977.5, p = .867$; $U = 13991.0, p = .672$; $U = 41585.0, p = .612$ respectively). However, differences in mastery were found for student status, gender, and marital status. International student respondents scored higher in mastery (*median* = 4.50) than domestic students (*median* = 4.25) ($U = 36522.5, p = .005$), female (*median* = 4.25) and married (*mean rank* = 318.08) respondents scored higher than other genders (*median* = 4.00) and non-married respondents (*mean rank* = 287.74) ($U = 26130.0, p = .011$; $U = 40382.5, p = .031$).

Significant median differences in mastery scores by item mirrored those for the scale with two notable additional findings. Respondents who did not speak English at home scored significantly higher on item 2 ('The more effort I put into academic integrity in my courses the better I do at them') than respondents who spoke English at home ($U = 38386.5, p = .015$). Those who reported a high GPA (3.50 – 4.00) had higher median mastery scores for item 1 ('I have a great deal of control over my academic integrity') than those who reported a lower GPA (1.50 – 2.49) [$H(4) = 14.03, p = .007$; $U = 6791.5, p = .002$]. Items 2-4 did not significantly differ for any of the five levels of GPA.

Coping

Coping is the "cognitive and behavioral efforts to master, reduce, or tolerate the internal/or external demands that are created by the stressful transaction" (Folkman, 1985, p. 843). We used 5 items that measured avoidance, positive reinterpretation, beliefs, active, and venting types of coping (Mattlin et al., 1990). Participants were asked to rate the frequency ('I usually don't do this at all' = 1; 'I usually do this a lot' = 4) with which they used the 5 items to cope with stressful experiences.

Table 16 shows that 81.0% of participants used active coping strategies ‘some’ or ‘a lot’ of the time when faced with stress, 72.0% used avoidance. Positive reinforcement and venting were used by over 63% (63.4%) of participants. Almost 50% (49.3%) of participants reported they relied on their beliefs to cope.

Table 16. Percentage of Participants that Used Coping Strategies ‘Some’ or ‘A Lot’

Coping	%	<i>n</i>
Avoidance (Do things to try to take your mind off the situation)	72.0	<i>n</i> =433/616
Positive Reinterpretation (Try to think about the situation in a different way so it won’t upset you so much)	63.4	<i>n</i> =391/616
Beliefs (Rely on your religious or spiritual beliefs to help you cope)	49.3	<i>n</i> =303/615
Active (Try to think about possible ways to improve the situation)	81.0	<i>n</i> =497/614
Venting (Talk to others about the situation)	63.4	<i>n</i> =390/615

Nonparametric tests were used to explore differences in the five coping strategies for demographic characteristics:

- **Avoidance** coping was used significantly more often by participants who self-identified as racialized minority ($U = 32635.0, p = .028$) than non-racialized minority participants. No other demographic characteristics were found to be significantly different between groups for these factors.
- **Positive reinterpretation** was used significantly more often by non-English speaking respondents ($U = 36091.0, p < .001$), those who self-identified as racialized minority ($U = 31187.0, p = .004$), international students ($U = 36380.0, p = .002$), and participants who were not married ($U = 49755.0, p = .031$) than English-speaking, non-racialized minority, domestic and married participants.
- **Relying on religious or spiritual beliefs** to cope was used more often by those who did not speak English at home ($U = 27987.5, p < .001$), those who self-identified as racialized minority ($U = 29238.5, p < .001$), international students ($U = 25854.0, p = .000$), those full-time in their studies ($U = 10558.5, p < .001$), and participants who were not married ($U = 50428.0, p = .010$) compared to those who spoke English at home, did not identify as a racialized minority, domestic learners, those part-time in their studies, and married participants. A Kruskal–Wallis H test was used to explore significant differences in this coping style by income. A significant difference was found in relying on beliefs to cope for those with a yearly income of between \$75,000–\$99,999 and \$30,000–\$49,999 [$H(6) = 20.57, p = .002$]. Participants with the higher income used this coping style less than the lower income range ($U = 758.0, p = .002$).

- **Active** coping style was reportedly used more often by those speaking languages other than English at home ($U = 36804.5, p = .003$), international students ($U = 33669.0, p < .001$), and participants who were not married ($U = 51883.0, p < .001$) compared to participants who speak English at home, domestic, and married participants. There were no significant differences in active coping by minority status, gender, full/part-time studies, number of terms completed, GPA, income, or school of program.
- **Venting** or talking to others about the situation was used more often by participants who spoke English at home ($U = 47446.5, p = .013$), those who were not racialized minority ($U = 41680.5, p = .004$), and genders other than female ($U = 36802., p < .001$) compared to participants who did not speak English at home, racialized minority participants, and females.

Social Support

Social support is “a social network’s provision of psychological and material resources intended to benefit an individual’s ability to cope with stress” (Cohen, 2004, p. 676). The perceived availability of functional social support has been found to be more important than actual support received and the importance of the source of social support has been documented (Thoits, 2011). Therefore, we used measures that captured perceived availability of emotional, informational, and instrumental support provided by family/friends and peers. Emotional support refers to “demonstrations of love and caring, esteem and value, encouragement, and sympathy”. Informational assistance is the “provision of facts or advice that may help a person solve problems”. Instrumental support consists of “offering or supplying behavioral or material assistance with practical tasks or problems” (Thoits, 2011, p. 146).

Respondents were asked to rate (‘Not true’ to ‘Certainly true’) 3 items that measured perceived availability of emotional, informational, and instrumental support from family/friends and 3 items for perceived availability of emotional, informational, and instrumental support provided by peers.

Table 17 shows that respondents rated availability of emotional, informational, and instrumental support from family/friends higher (94.7%, 93%, 86.7% respectively) than for support provided by peers for all 3 types of support (56.1%, 63.9%, 58.9% respectively). Emotional support was perceived to be more available from family/friends (94.7%) than from school peers (56.1%).

Table 17. Percentage of Respondents who Reported 'Partly true' or 'Certainly true' to Perceived Availability of Support from Family/Friends and Peers

	%	n
Family/Friend Support		
Emotional	94.7	n=587/617
Informational	93.0	n=574/617
Instrumental	86.7	n=535/617
Peer Support		
Emotional	56.1	n=345/615
Informational	63.9	n=393/615
Instrumental	58.9	n=362/614

Significant differences in availability of **social support from family/friends** across the three types of support were found for language, minority status, student status, and marital status. Nonparametric tests revealed:

- Perceived availability of *emotional support* provided by family/friends was lower for those who spoke English at home ($U = 39171.5, p = .039$), self-identified as racialized minority ($U = 40776.0, p = .017$), were domestic learners ($U = 38155.0, p = .012$), and respondents who were not married ($U = 51496.5, p = .001$) compared to non-English, non-racial minority, and married respondents.
- Perceived availability of *informational support* was significantly lower for domestic ($U = 37863.0, p = .008$) and respondents who were not married ($U = 49668.0, p = .025$) compared to international and married respondents.
- Perceived availability of *instrumental support* was found to be significantly lower for respondents who spoke English at home ($U = 38626.5, p = .024$) and domestic learners ($U = 36582.0, p = .001$) compared to non-English and international students.

Significant differences in availability of **social support provided by school peers** across the three types of support were found for student status, full and part-time studies, school of program, work hours and language. Nonparametric statistical tests found:

- Perceived availability of *emotional support* was significantly lower for domestic ($U = 37170.0, p = .005$) and part-time respondents ($U = 9316.0, p < .001$) than for international students and respondents full-time in their studies. Kruskal–Wallis H tests revealed significant differences in emotional support by school of program [$H(4) = 13.02, p = .011$] and by work hours [$H(4) = 14.56, p = .006$]. Respondents from the School of Community Studies reported lower emotional support from peers (*mean rank* = 148.75) than the School of Health and Wellness (*mean rank* = 180.81). Respondents

who worked 21-30 hours per week (*mean rank* = 96.41) reported lower perceived availability of emotional support from peers than those who worked 11-20 hours per week (*mean rank* = 130.56).

- Perceived availability of *informational support* was lower for domestic ($U = 38467.5, p = .036$) and part-time respondents ($U = 9585.0, p < .001$) than for international and those full-time in their studies. A Kruskal–Wallis H test found a significant difference between perceived availability of informational support from peers and work hours [$H(4) = 16.21, p = .003$]. Respondents working 21-30 and over 30 hours per week reported lower perceived availability of informational support from peers than respondents working 11-20 hours per week ($U = 3310.5, p = .003$; $U = 5152.5, p = .004$).
- Perceived availability of *instrumental support* was lower for respondents who spoke English at home, domestic students, and respondents part-time in their studies compared to non-English, international, and those in full-time studies ($U = 38143.0, p = .020$; $U = 36829.0, p = .003$; $U = 10085.5, p < .001$).

No differences in either support provided by family/friends or peers were found by gender, current GPA, number of terms completed, or yearly income.

Stress

Stress was conceptualized as events and circumstances that challenge the capacity to adapt or act as a barrier to desired ends (Pearlin, 1983; Aneshensel, 1992; Wheaton et al., 2013). To measure stress, we used a stressor inventory, an operationalization widely used in the stress process research (Turner et al., 1995).

The stressor inventory contained 64 stressors (coded 1 or 0). Stressors were summed to create an index that ranged from 0-64. Low scores represented low stress and high scores represented high stress. The average number of stressors participants reported experiencing in the last 12 months was 7.51 ($n = 622$).

Table 18 is a list of the top 20 stressors respondents reported experiencing. As the survey was conducted 1.5 years into the COVID-19 pandemic (October 2021), we were not surprised that it was the top stressor reported. About 61.2% ($n = 382/624$) of respondents indicated that COVID-19 was a stressor for them. The second, third, and fourth top stressors were school-related stressors with ‘increased academic workload’ reported by 54.3% ($n = 339/624$) of respondents, ‘worried about overall performance in college’ reported by 49.5% ($n = 309/624$) of respondents, and ‘not achieving the grades wanted’ reported by 38.3% ($n = 239/624$) of respondents. Over one third of respondents reported that they moved within the last 12 months (35.4%, $n = 221/624$).

Table 18. Top Twenty Stressors Reported ($N = 624$)

Stressors	%	n
COVID-19 pandemic	61.2	382
Increased academic workload	54.3	339
Worried about your overall performance in college	49.5	309
Not achieving the grades, you wanted to	38.3	239
Moved	35.4	221
Fear of not graduating	26.9	168
College conflicting with job	26.3	164
College conflicting with family life	26.0	162
Unable to find work	23.9	149
Major financial crisis	19.9	124
Change of job	18.6	116
Exam stress due to e-proctoring surveillance	17.5	109
Family life conflicting with college	17.3	108
Close relationship ended	16.7	104
Work conflicting with college	16.2	101
Economic recession	15.9	99
Trouble accessing a computer or other technology necessary for completing your assignments/exams	14.9	93
Worried about losing job	14.1	88
Trouble working with or getting along with college peers	13.9	87
Missed too many classes and have fallen behind in homework/assignments	13.9	87

Just over one-quarter of respondents reported college conflicting with their job (26.3%, $n = 164/624$) and with family life (26.0%, $n = 162/624$). Work and financial stressors were also found in the top 20 stressors reported; 'unable to find work' reported by 23.9% ($n = 149/624$), 'major financial crisis' at 19.9% ($n = 124/624$), and 'change of job' at 18.6% ($n = 116/624$). Worth noting is 109 respondents (17.5%) indicated they experienced 'exam stress due to e-proctoring surveillance' and 14.1% ($n = 93/624$) had 'trouble accessing a computer or other technology necessary for completing your assignments/exams'.

Mann Whitney U tests were performed to assess differences in median total stressors for gender, minority status, full/part-time, and employment status. No statistically significant differences were found between categories for these factors ($U = 28676.5$, $p = .174$; $U = 35921.5$, $p = .726$; $U = 15998.5$, $p = .323$; $U = 44052.0$, $p = .649$ respectively).

Significant differences in median total stressors were found for student status, language, and marital status (see Table 19). Domestic student respondents reported significantly more stressors ($median = 7.00$) than international students ($median = 5.00$) ($U = 53455.0$, $p < .001$).

Respondents who spoke English at home (*median* = 7.00) and those not married (*median* = 7.00) reported more stressors on average than those who did not speak English at home (*median* = 5.00) and married respondents (*median* = 5.00) ($U = 51997.0, p < .001$; $U = 37329.0, p < .001$).

Table 19. Mean and Median Number of Total Stressors by Student Status, Language, and Marital Status

	<i>mean</i>	<i>median</i>	<i>n</i>
Student Status			
International	5.97	5.00	224
Domestic	8.41	7.00	381
Language			
English	8.40	7.00	238
Other than English	6.32	5.00	360
Marital Status			
Married	6.59	5.00	273
Other than married	8.31	7.00	332

To explore if age and number of children were related to stress, Spearman's rho correlation coefficients were examined. The association between age and total number of stressors was not significant ($r_s(598) = -.077, p = .059$). However, the number of children respondents reported they cared for in their home was significant and negatively associated with stress. Higher numbers of children were associated with lower total stress ($r_s(593) = -.101, p = .014$).

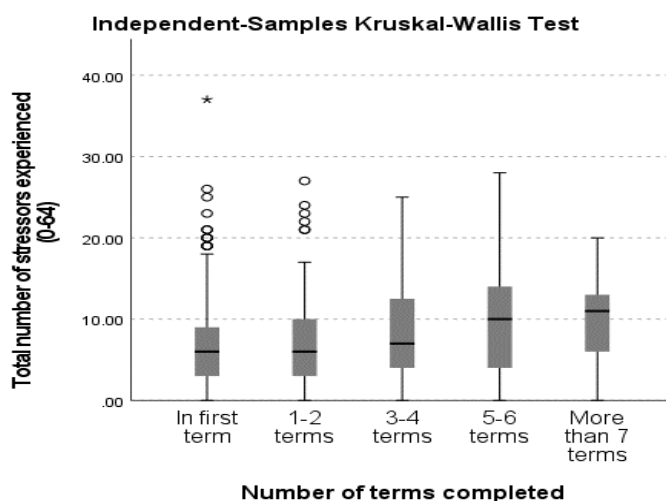


Figure 5. Median differences between total number of stressors experienced by number terms completed in program.

A Kruskal-Wallis H test was conducted to evaluate differences among terms completed on median change in number of stressors (see Figure 5). The test was significant $H(4) = 15.10, p = .004$. Follow-up tests were conducted to evaluate pairwise differences among the 5 groups. The results of these tests indicated a significant difference between respondents who were in their first term and those who had completed 3 or 4 terms. Number of stressors reported for respondents who completed 3 or 4 terms ($median = 7.00$) was greater than for those who were in their first term ($median = 6.00$) ($U = 11401.0, p = .004$).

A significant difference was also found among categories of work hours per week and median number of stressors reported (see Figure 6). Mann Whitney U pairwise comparison tests indicated significant differences in median number of stressors between respondents who worked 21–30 hours per week ($median = 8.50$) and those who worked 11–20 hours per week ($median = 6.00$) ($U = 3212.0, p = .003$). Respondents who worked 21-30 hours per week experienced more stress than those who worked fewer hours per week (11-20 hours).

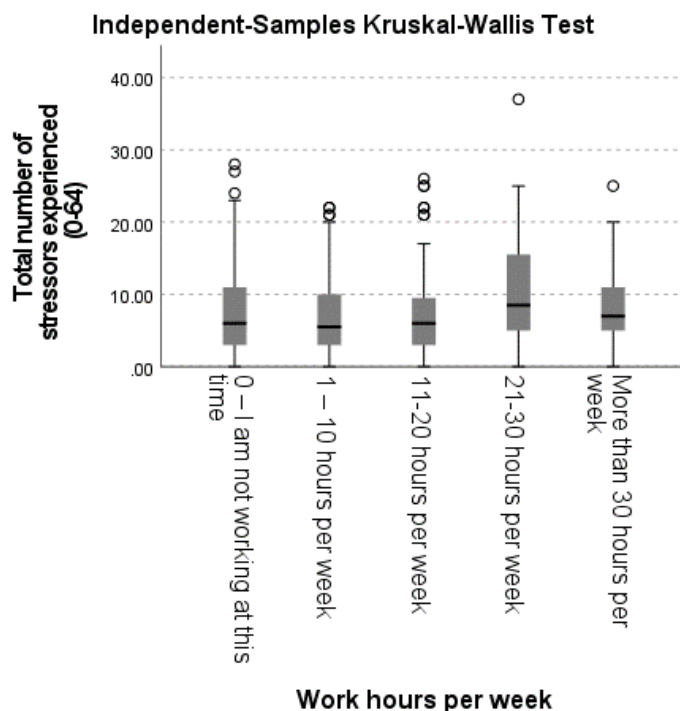


Figure 6. Median differences Between total number of stressors experienced by work hours per week.

No significant differences in median total stress were found for gender ($U = 28676.5$, $p = .174$), minority status ($U = 35921.5$, $p = .726$), yearly income [$H(6) = 5.45$, $p = .488$], school of program [$H(4) = 4.61$, $p = .329$] or GPA [$H(4) = 5.47$, $p = .242$].

Types of Stressors

Items in the stressor inventory were combined to create indices based on role domain, duration, reference, interaction, and intensity. Previous research has suggested that reaction to stress may depend on salient role domains in which the stressors occurred (Turner et al., 1995; Avison et al., 2004; Acharya et al., 2018). Therefore, we included indices for work stress, family stress, and school stress. Differences in response to discrete events compared to events that extend across time have also been found to be important (Turner et al., 1995; Avison et al., 2004) and so indices to represent both life events and chronic strains were constructed. Life events that happened to individuals personally and those that happened to people in their social network may invoke different stress reactions and have therefore been captured in this study (personal, network) (Thoits, 1983). We also measured role conflict (i.e., when participation in the school role is made more difficult by virtue of participation in the work or family role) (Greenhaus & Beutell, 1985), role strain (i.e., tension between roles connected to being a student) (Pearlin et al., 1981; Pearlin, 1989; Lee & Cohen, 2008) and traumatic life adversities (Turner & Lloyd, 1995). See Appendix E for a summary of the events that were used to create each index.

Table 20 shows summary statistics for reported stressors and the percentage of respondents reporting at least one stressor by type. The maximum number of stressors reported was 37 stressors. Only 24 respondents reported they experienced zero (0) stressors in the last 12 months (3.9%, $n = 24/622$) and 96.1% ($n = 598/622$) reported at least one stressor. Over 85% (85.3%, $n = 532/624$) of respondents reported at least one school stressor, 64.4% ($n = 402/624$) reported one or more work stressors, and 54.2% ($n = 338/624$) reported one or more family stressors. The average number of school stressors was 3.12. The average number work stress was 1.33 and 1.13 for family stress. A greater percentage of respondents reported school-related role strains (62.3%) compared to role conflicts (45.0%). Over one third of respondents reported at least one traumatic life event (37.7%, $n = 235/624$).

Table 20. Summary Statistics for Stress by Type

	<i>Range</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>At least one stressor (%)</i>	<i>N</i>
Total Stress (0–64)	0-37	7.51	5.64	96.1	622
Role Domain					
Work (0-9)	0-8	1.33	1.48	64.4	624
Family (0-20)	0-9	1.13	1.50	54.2	624
School (0-17)	0-15	3.12	2.66	85.3	624
Duration					
Life events (0-45)	0-23	4.94	3.76	93.4	622
Chronic strains (0-15)	0-11	1.86	1.74	73.9	624
Reference					
Personal (0-46)	0-30	6.77	5.00	95.3	623
Network (0-17)	0-7	0.75	1.21	40.1	623
Interaction					
School-related role conflict (0-4)	0-4	0.86	1.16	45.0	624
School-related role strain (0-4)	0-4	1.13	1.09	62.3	624
Intensity					
Traumatic life adversities (0-11)	0-5	0.52	0.81	37.7	624

Table 21 shows the mean number of stressors experienced for each type of stressor by student status, full and part-time studies, gender, employment status, and marital status. Mann Whitney *U* tests were used to assess differences between the median number of stressors and the categories within the five factors. Mean number of stressors were presented in the table to reflect differences more accurately than medians. Statistically significant differences were highlighted in the table.

Domestic respondents reported significantly more stressors than international respondents for all stressor types except for school-related role strain ($U = 45201.0$, $p = .246$). Respondents who spoke English at home compared to those who did not, experienced more stressors for all stressor types except for school-related role strains and traumatic adversities ($U = 4498.0$, $p = .335$; $U = 45596.5$, $p = .157$) (not shown in the table). Significant differences in family, network, and school-related role conflicts were found between respondents who were full versus part-time in their studies ($U = 17932.0$, $p = .007$; $U = 19113.0$, $p < .001$; $U = 17792.5$, $p = .008$). Part-time respondents reported more family stressors (*mean rank* = 359.57), network stressors (*mean rank* = 381.44), and school-related role conflicts (*mean rank* = 356.81) than those full-time in their studies (*mean rank* = 296.90, 294.19, 297.17). Significant gender differences occurred in the number of stressors in 2 of the 3 role domains. Female respondents reported

more family stressors (*mean rank* = 314.13) compared to respondents indicating a gender other than female (*mean rank* = 280.24, $U = 34670.0$, $p = .040$), but fewer school stressors, life events, and role strains ($U = 27690.0$, $p = .046$; $U = 27332.5$, $p = .034$; $U = 27453.5$, $p = .027$).

Table 21. Mean Number of Stressors Experienced by Student Status, Full/Part-Time, Gender, Employment Status, and Marital Status

	Student Status		Full/Part-Time		Gender		Employment Status		Marital Status	
	Inter-national	Domestic	Full-time	Part-time	Female	Other Gender	Working	Not Working	Married	Not Married
Total Stress (0–64)	5.97 (n=224)	8.41** (n=381)	7.48 (n=548)	8.43 (n=54)	8.06 (n=482)	7.36 (n=129)	7.66 (n=370)	7.40 (n=233)	6.59 (n=273)	8.31** (n=332)
Role Domain										
Work (0-9)	1.18 (n=224)	1.42* (n=383)	1.32 (n=550)	1.61 (n=54)	1.29 (n=484)	1.50 (n=129)	1.53** (n=372)	1.07 (n=233)	1.20 (n=274)	1.47* (n=333)
Family (0-20)	0.70 (n=224)	1.39** (n=383)	1.09 (n=550)	1.76* (n=54)	1.18* (n=484)	0.93 (n=129)	1.12 (n=372)	1.17 (n=233)	1.17 (n=274)	1.11 (n=333)
School (0-17)	2.44 (n=224)	3.50** (n=383)	3.16 (n=550)	2.81 (n=54)	3.01 (n=484)	3.47* (n=129)	3.09 (n=372)	3.20 (n=233)	2.57 (n=274)	3.57** (n=333)
Duration										
Life events (0-45)	4.04 (n=224)	5.46** (n=381)	4.95 (n=548)	5.17 (n=54)	4.78 (n=482)	5.53* (n=129)	4.96 (n=370)	4.99 (n=233)	4.21 (n=273)	5.57** (n=332)
Chronic strains (0-15)	1.55 (n=224)	2.06** (n=383)	1.85 (n=550)	2.26 (n=54)	1.84 (n=484)	1.98 (n=129)	1.92 (n=372)	1.82 (n=233)	1.62 (n=274)	2.08** (n=333)
Reference										
Personal (0-46)	5.55 (n=224)	7.48** (n=382)	6.80 (n=549)	7.04 (n=54)	6.62 (n=483)	7.33 (n=129)	6.96 (n=371)	6.60 (n=233)	5.82 (n=273)	7.60** (n=333)
Network (0-17)	0.42 (n=224)	0.94** (n=382)	0.69 (n=549)	1.39** (n=54)	0.75 (n=483)	0.74 (n=129)	0.72 (n=371)	0.80 (n=233)	0.77 (n=274)	0.73 (n=332)
Interaction										
School-related role conflict (0-4)	0.48 (n=224)	1.07** (n=383)	0.83 (n=550)	1.24* (n=54)	0.89 (n=484)	0.71 (n=129)	1.01** (n=372)	0.62 (n=233)	0.87 (n=274)	0.85 (n=333)
School-related role strain (0-4)	1.04 (n=224)	1.19 (n=383)	1.15 (n=550)	0.98 (n=54)	1.08 (n=484)	1.32* (n=129)	1.09 (n=372)	1.21 (n=233)	0.94 (n=274)	1.29** (n=333)
Intensity										
Traumatic life adversities (0-11)	0.38 (n=224)	0.59** (n=383)	0.50 (n=550)	0.70 (n=54)	0.48 (n=484)	0.63 (n=129)	0.53 (n=372)	0.49 (n=233)	0.46 (n=274)	0.85 (n=333)

*p < .05, **p < .001

Respondents working at least one hour per week reported significantly more work stressors (*mean rank* = 323.28) and school-related role conflicts (*mean rank* = 320.12) than did respondents who were not working at the time of the survey (*mean rank* = 270.61, $U = 50884.0$, $p < .001$; *mean rank* = 275.67, $U = 49705.5$, $p < .001$). For all stressor types except family, network, role conflict, and traumatic stressors, respondents who were not married reported more stressors on average than married respondents ($U = 47877.0$, $p = .265$; $U = 46980.0$, $p = .427$; $U = 46880.5$, $p = .518$; $U = 42457.0$, $p = .085$ respectively).

Spearman's rho correlation coefficients were calculated to test the association between number of stressors by type and age. Age was significantly correlated with all types of stressors except work stress [$r_s(600) = .006$, $p = .890$], school-related role conflict [$r_s(600) = .053$, $p = .193$], and traumatic life adversities [$r_s(600) = .045$, $p = .272$]. Age had a significant positive association with family stress [$r_s(600) = .104$, $p = .010$] and network stress [$r_s(599) = .155$, $p < .001$] and a negative association with school [$r_s(600) = -.164$, $p < .001$] and personal stress [$r_s(599) = -.119$, $p = .003$], life events [$r_s(598) = -.110$, $p = .007$], chronic strains [$r_s(600) = -.089$, $p = .029$], and role strains [$r_s(600) = -.169$, $p < .001$] (see Table 22). Age had the strongest association with school-related role strains.

Table 22. Direction of Association Between Age and Number of Children and Type of Stress

	<i>Age</i>	<i>Number of Children</i>
Total Stress (0–64)	NS	-
Role Domain		
Work (0-9)	NS	-
Family (0-20)	+	+
School (0-17)	-	-
Duration		
Life events (0-45)	-	-
Chronic strains (0-15)	-	-
Reference		
Personal (0-46)	-	-
Network (0-17)	+	+
Interaction		
School-related role conflict (0-4)	NS	NS
School-related role strain (0-4)	-	-
Intensity		
Traumatic life adversities (0-11)	NS	NS

NS = Not statistically significant; + = Positive relationship; - = Negative relationship

Number of children cared for at home was significantly associated with all types of stressors except school-related role conflict [$r_s(600) = .047, p = .253$] and traumatic life adversities [$r_s(600) = .057, p = .166$]. Like age, number of children was positively correlated with family [$r_s(595) = .191, p < .001$] and network stress [$r_s(594) = .232, p < .001$] and a negative association with work [$r_s(595) = -.160, p < .001$] and school stress [$r_s(595) = -.162, p < .001$], personal [$r_s(594) = -.161, p < .001$] and life events [$r_s(593) = -.142, p < .001$], chronic [$r_s(595) = -.084, p = .040$] and school-related role strains [$r_s(595) = -.194, p < .001$] (see Table 22). Number of children cared for had the strongest association with network stress.

Kruskal-Wallis H tests were used to assess differences in median number of stressors for each type of stress by school of program and current GPA. No significant differences were found for either factor. Median stress did differ by number of terms completed and work hours. Table 23 shows the mean number of stressors by type across number of terms and work hours. Significant differences were highlighted in the table. Respondents who completed 3-4 terms reported significantly more family stressors [$H(4) = 14.53, p = .006$; $U = 11404.0, p = .002$; *mean rank* = 215.84], network stressors [$H(4) = 13.95, p = .007$; $U = 11844.0, p = .005$; *mean rank* = 210.62], and school-related role conflict [$H(4) = 18.17, p = .001$; $U = 10788.0, p < .001$; *mean rank* = 221.77] than respondents in their first term (*mean rank* = 178.77, 180.04, 176.52 respectively). Respondents who worked more than 30 hours per week (*mean rank* = 190.38) reported more work stress than those not working (*mean rank* = 138.56) ($U = 5024.0, p = .001$). Those who worked 21-30 hours per week had higher number of stressors in the family (*mean rank* = 159.09) ($U = 2966.0, p < .001$) and school domains (*mean rank* = 155.72) ($U = 3114.5, p = .001$) than respondents who worked fewer hours per week (11-20 hours) (*mean rank* = 117.04, 117.77). Respondents who were not working at the time of the survey reported fewer school-related role conflicts (*mean rank* = 134.19) than learners who were working at least 1-10 hours per week (*mean rank* = 205.81) ($U = 4005.5, p < .001$).

The median number of school stressors [$H(6) = 12.61, p = .050$] and school-related role strains [$H(6) = 18.56, p = .005$] differed significantly by yearly income. Pairwise comparisons between number of school stressors and income revealed that respondents who earned less than \$15,000 per year reported significantly more student stressors (*mean rank* = 153.12) than respondents who earned \$75,000-\$99,999 per year (*mean rank* = 104.42) ($U = 274.0, p = .002$). Similarly, respondents in the lowest income range (less than \$15,000 per year) also reported more student-related role strains (*mean rank* = 216.28) than respondents in the second income range (\$15,000-\$29,999) (*mean rank* = 178.13; $U = 15105.5, p = .001$).

Table 23. Mean Number of Stressors Experienced by Number of Terms Completed and Work Hours

	Number of Terms Completed					Work Hours Per Week				
	<i>In 1st term</i>	<i>1-2 terms</i>	<i>3-4 terms</i>	<i>5-6 terms</i>	<i>7 or more</i>	<i>Not working</i>	<i>1-10 hours</i>	<i>11-20 hours</i>	<i>21-30 hours</i>	<i>> 30 hours</i>
Total Stress (0–64)	6.88 (<i>n</i> =272)	7.24 (<i>n</i> =181)	8.88* (<i>n</i> =104)	9.93 (<i>n</i> =29)	9.85 (<i>n</i> =13)	7.40 (<i>n</i> =233)	7.55 (<i>n</i> =58)	6.87 (<i>n</i> =203)	10.50 (<i>n</i> =44)	8.31 (<i>n</i> =65)
Role Domain										
Work (0-9)	1.27 (<i>n</i> =273)	1.21 (<i>n</i> =182)	1.54 (<i>n</i> =104)	1.79 (<i>n</i> =29)	1.85 (<i>n</i> =13)	1.07 (<i>n</i> =233)	1.24 (<i>n</i> =58)	1.43 (<i>n</i> =204)	1.95 (<i>n</i> =44)	1.80** (<i>n</i> =66)
Family (0-20)	0.98 (<i>n</i> =273)	1.04 (<i>n</i> =182)	1.44* (<i>n</i> =104)	2.07 (<i>n</i> =29)	1.31 (<i>n</i> =13)	1.17 (<i>n</i> =233)	1.34 (<i>n</i> =58)	0.82 (<i>n</i> =204)	1.75** (<i>n</i> =44)	1.44 (<i>n</i> =66)
School (0-17)	2.85 (<i>n</i> =273)	3.00 (<i>n</i> =182)	3.85 (<i>n</i> =104)	3.93 (<i>n</i> =29)	3.92 (<i>n</i> =13)	3.20 (<i>n</i> =233)	2.97 (<i>n</i> =58)	2.82 (<i>n</i> =204)	4.48** (<i>n</i> =44)	3.09 (<i>n</i> =66)
Duration										
Life events (0-45)	4.51 (<i>n</i> =272)	4.86 (<i>n</i> =181)	5.55 (<i>n</i> =104)	6.48 (<i>n</i> =29)	7.31 (<i>n</i> =13)	4.99 (<i>n</i> =233)	4.93 (<i>n</i> =58)	4.60 (<i>n</i> =203)	6.75 (<i>n</i> =44)	4.94 (<i>n</i> =65)
Chronic strains (0-15)	1.80 (<i>n</i> =273)	1.71 (<i>n</i> =182)	2.22 (<i>n</i> =104)	2.45 (<i>n</i> =29)	1.92 (<i>n</i> =13)	1.82 (<i>n</i> =233)	1.86 (<i>n</i> =58)	1.80 (<i>n</i> =204)	2.52 (<i>n</i> =44)	1.94 (<i>n</i> =66)
Reference										
Personal (0-46)	6.29 (<i>n</i> =273)	6.55 (<i>n</i> =181)	7.88 (<i>n</i> =104)	8.69 (<i>n</i> =29)	8.92 (<i>n</i> =13)	6.60 (<i>n</i> =233)	6.71 (<i>n</i> =58)	6.36 (<i>n</i> =203)	9.27 (<i>n</i> =44)	7.47 (<i>n</i> =66)
Network (0-17)	0.61 (<i>n</i> =272)	0.69 (<i>n</i> =182)	1.01* (<i>n</i> =104)	1.24 (<i>n</i> =29)	0.92 (<i>n</i> =13)	0.80 (<i>n</i> =233)	0.84 (<i>n</i> =58)	0.50 (<i>n</i> =204)	1.23** (<i>n</i> =44)	0.92 (<i>n</i> =65)
Interaction										
School-related role conflict (0-4)	0.73 (<i>n</i> =273)	0.77 (<i>n</i> =182)	1.32** (<i>n</i> =104)	1.21 (<i>n</i> =29)	0.85 (<i>n</i> =13)	0.62 (<i>n</i> =233)	0.90 (<i>n</i> =58)	0.69 (<i>n</i> =204)	1.52 (<i>n</i> =44)	1.76** (<i>n</i> =66)
School-related role strain (0-4)	1.13 (<i>n</i> =273)	1.09 (<i>n</i> =182)	1.24 (<i>n</i> =104)	1.24 (<i>n</i> =29)	1.23 (<i>n</i> =13)	1.21 (<i>n</i> =233)	1.00 (<i>n</i> =58)	1.12 (<i>n</i> =204)	1.27 (<i>n</i> =44)	0.97 (<i>n</i> =66)
Intensity										
Traumatic life adversities (0-11)	0.44 (<i>n</i> =273)	0.53 (<i>n</i> =182)	0.60 (<i>n</i> =104)	0.69 (<i>n</i> =29)	0.69 (<i>n</i> =13)	0.49 (<i>n</i> =233)	0.59 (<i>n</i> =58)	0.42 (<i>n</i> =204)	0.70 (<i>n</i> =44)	0.71 (<i>n</i> =66)

* $p < .05$, ** $p < .001$

Personal and Social Resources

Spearman's correlation coefficients were examined for significant associations between stress and personal and social resources. Table 24 shows both self-efficacy and mastery were negatively associated with school stress ($r_s(617) = -.134, p < .001$; $r_s(618) = -.121, p = .003$). High stress was associated with low self-efficacy and low mastery. A significant negative association between school-related role strains and self-efficacy and mastery was also found ($r_s(617) = -.152, p < .001$; $r_s(618) = -.092, p = .022$). Mastery and traumatic life adversities were found to have a weak negative association ($r_s(618) = -.092, p = .022$).

Table 24. Spearman's Correlation Coefficients for Stress and Self-Efficacy and Mastery

	Self-efficacy		Mastery	
	r_s	n	r_s	n
Total Stress (0-64)	-.118*	615	-.116*	616
Role Domain				
Work (0-9)	-.059	617	-.018	618
Family (0-20)	-.058	617	-.075	618
School (0-17)	-.134**	617	-.121*	618
Duration				
Life events (0-45)	-.096*	618	-.108*	616
Chronic strains (0-15)	-.163**	617	-.119*	618
Reference				
Personal (0-46)	-.130**	616	-.111*	617
Network (0-17)	-.014	616	-.057	617
Interaction				
School-related role conflict (0-4)	-.075	617	-.037	618
School-related role strain (0-4)	-.152**	617	-.092*	617
Intensity				
Traumatic life adversities (0-11)	-.071	617	-.092*	618

* $p < .05$, ** $p < .001$

Table 25 shows correlation coefficients for stress and social support. Associations that were not statistically significant were highlighted. All types of stress were negatively correlated with instructor support. High stress was associated with low instructor support.

Table 25. Spearman's Correlation Coefficients for Stress and Social Support from Instructors, Family/Friends, and Peers

	Instructor Support		Family/Friends						Peers					
	<i>r_s</i>	<i>n</i>	<i>Emotional</i>		<i>Informational</i>		<i>Instrumental</i>		<i>Emotional</i>		<i>Informational</i>		<i>Instrumental</i>	
	<i>r_s</i>	<i>n</i>	<i>r_s</i>	<i>n</i>	<i>r_s</i>	<i>n</i>	<i>r_s</i>	<i>n</i>	<i>r_s</i>	<i>n</i>	<i>r_s</i>	<i>n</i>	<i>r_s</i>	<i>n</i>
Total Stress (0–64)	-.216**	621	-.130**	615	-.098*	615	-.161**	615	-.111*	613	-.127*	613	-.181**	612
Role Domain														
Work (0-9)	-.150**	623	-.098*	617	-.070	617	-.116*	617	-.100	615	-.131**	615	-.161**	614
Family (0-20)	-.150**	623	-.097*	617	-.093*	617	-.153**	617	-.117*	615	-.135**	615	-.150**	614
School (0-17)	-.168**	623	-.073	617	-.059	617	-.106*	617	-.086*	615	-.088*	615	-.128*	614
Duration														
Life events (0-45)	-.198**	621	-.136**	615	-.110*	615	-.147**	615	-.086*	613	-.105*	613	-.152**	612
Chronic strains (0-15)	-.172**	623	-.092*	617	-.061	617	-.118*	617	-.120*	615	-.131**	615	-.151**	614
Reference														
Personal (0-46)	-.203**	622	-.123*	616	-.091*	616	-.153**	616	-.101*	614	-.114*	614	-.175**	613
Network (0-17)	-.157**	622	-.085*	616	-.089*	616	-.101*	616	-.108*	614	-.120*	614	-.122*	613
Interaction														
School-related role conflict (0-4)	-.148**	623	-.061	617	-.044	617	-.111*	617	-.066	615	-.077	615	-.112*	614
School-related role strain (0-4)	-.117*	623	-.045	617	-.025	617	-.059	617	-.067	615	-.065	615	-.088*	614
Intensity														
Traumatic life adversities (0-11)	-.150**	623	-.106*	617	-.084*	617	-.065	617	-.077	615	-.051	615	-.094*	614

* $p < .05$, ** $p < .001$; Associations that were not statistically significant were highlighted.

Instrumental support from family/friends was significantly associated with all types of stress except role strains ($r_s(617) = -.059, p = .143$) and traumatic life adversities ($r_s(617) = -.065, p = .107$). All types of stress were significantly associated with instrumental support from peers.

Informational support provided by peers was found to have a weak significant correlation with school stressors ($r_s(615) = -.085, p = .030$) but was not significant when provided by family/friends ($r_s(617) = -.059, p = .140$).

Academic Integrity Violations

For our study we were influenced by the conceptualization of contract cheating set out by Bretag et al. (2019). Contract cheating is:

...where a student gets someone – a third party – to complete an assignment or an exam for them. This third party might be a friend, family member, fellow student or staff member who assists the student as a favour. It might be a pre-written assignment which has been obtained from an assignment ‘mill’. The third party may also be a paid service, advertised locally or online (p.2).

To measure contract cheating and other violation behaviours, the academic integrity violation inventory used in this study was a modified version of the inventory developed by McCabe (n.d.). The inventory for this study included 40 separate behaviours. Respondents reported how often they engaged in the behaviour (‘Never’ to ‘More than 10 times’), knowledge of violation (yes, no), and the perceived seriousness of each behaviour (‘Trivial cheating’ to ‘Serious cheating’). Summated indices were created for following three categories:

1. **Commercial contract cheating behaviours.** Behaviours that involved any type of engagement with assignment or test tutoring or homework services other than those provided by the college. This included assignment/exam completion services, internet paper or essay “mills”, online tutoring, and homework help websites. The commercial contract cheating index ranged from 9 (representing no commercial contract cheating) to 45 (representing frequent commercial contract cheating).
2. **Sharing behaviours.** Behaviours that included any type of sharing assignment or test information with others known to respondent (i.e., another student, family, friend, partner, girlfriend/boyfriend). Sharing could be either providing information or receiving information that was used to create an assignment or complete an exam. For the purposes of comparison collusion (item 2) was included in this category. The sharing behaviour index ranged from 14 (representing no sharing) to 70 (representing frequent sharing).
3. **Individual behaviours.** Behaviours engaged in without others such as plagiarism (e.g., copying information from internet or other source without citing), fabricating or falsifying information, using notes when not permitted or using a false excuse to get an

extension. The commercial contract cheating index ranged from 17 (representing no individual behaviours) to 85 (representing frequent individual behaviours).

Contract cheating behaviour included both commercial contract cheating and sharing behaviours. The contract cheating index ranged from 23 (representing no contract cheating) to 115 (representing frequent contract cheating). As our study was centred around contract cheating, results in this report are largely not presented for individual behaviour. See Appendix D for a summary of the behaviours that were used to create each index.

An averaged index for perceived seriousness of violation behaviours was constructed and ranged from 1 to 4, with higher scores indicating greater perceived seriousness of the behaviours. The Cronbach's alpha for the 40 items ($\alpha = 0.97$) exceeded the recommended threshold ($\alpha = 0.80$) for a consistent measure (Boateng et al., 2018). Constructing an averaged index allowed us to compare perceived seriousness among groups of participants.

Almost 14% of respondents reported that they engaged in commercial contract cheating (13.9%, $n = 104/749$) and 13.8% reported they engaged in sharing ($n = 92/667$) (Table 26). Percentage of respondents that reported they engaged in individual behaviour was below 5% (4.4%, $n = 28/640$). Note that the number of missing cases increased throughout the survey and disclosure of behaviours decreased, therefore the reported individual behaviours was lower than expected.

Table 26. Percentage of Respondents Self-Reporting Engagement in Violation Behaviours

Type of Behaviour	%	<i>n</i>
Commercial contract cheating	13.9	749
Sharing	13.8	667
Individual	4.4	640

Table 27 shows the number of behaviours respondents reported engaging in at least once during their time at the college. Over 84% of respondents reported they did not engage in any behaviours (84.2%, $n = 527/626$) and 15.8% reported they engaged in at least one violation behaviour ($n = 99/626$).

Table 27. Number of Behaviours Respondents Reported Engaging in During Their Time at the College

Number of Behaviours	%	<i>n</i>
0	84.2	527
1	7.2	45
2	3.2	20
3	2.1	13
4	1.1	7
5	1.1	7
6 +	1.1	7
<i>Total</i>	100.0	626

A complete list of the behaviours and the frequency of reported engagement is presented in Table 28. The top four most frequent behaviours were highlighted in the table. The most frequent behaviour (i.e., highest percentage of respondents who engaged in the behaviour at least once) was 'Sharing an assignment with another student, so they have an example to work from' (a sharing behaviour) (54.6%, $n = 48/88$) followed by 'Copying a few sentences of material from an internet source without citing it for an assignment' (a plagiarism behaviour) (45.9%, $n = 11/24$), 'Working on an assignment with other students (in the same class or in a different class) when the instructor asked for individual work' (collusion) (45.2%, $n = 40/89$), and 'Using answers obtained from an online tutoring site (e.g. Chegg, Course Hero) for an assignment' (a commercial contract cheating behaviour) (42.3%, $n = 30/71$).

Table 28. Frequency of Academic Violation Behaviours

	Frequency of Behaviour (%)				N
	1-2 times	3-5 times	6-9 times	>10 times	
1. Fabricating or falsifying a bibliography or reference list	12.0	0.0	0.0	0.0	25
2. Working on an assignment with other <u>students</u> when the instructor asked for individual work	27.0	11.5	0.0	6.7	89
3. Getting questions and/or answers from someone you know who has already taken the test	13.5	5.6	1.1	0.0	89
4. In a course requiring computer work, copying code written by other <u>students</u>	4.6	0.0	0.0	0.0	87
5. In a course requiring computer work, copying code <u>found online</u> , without citing it	16.7	0.0	0.0	0.0	24
6. In a course requiring computer work, using code from an <u>internet service</u>	11.3	5.6	0.0	0.0	71
7. Evading camera surveillance during an online exam	8.3	0.0	0.0	0.0	24
8. Fabricating or falsifying research data	8.3	0.0	0.0	0.0	24
9. Copying from another student during a test with their knowledge	3.4	2.2	0.0	0.0	89
10. Copying from another student during a test without their knowledge	0.0	0.0	0.0	0.0	24
11. Using digital technology to get help from another <u>student</u> during a test or examination	3.4	1.1	0.0	0.0	89
12. Using digital technology to get help from <u>someone you know</u> during a test	4.5	1.1	0.0	0.0	88
13. Using digital technology to get help from an <u>exam service</u> found on the internet during a test	12.7	2.8	0.0	1.4	71
14. Using prohibited notes or cheat sheets during a test	16.7	4.2	0.0	0.0	24
15. Copying a few sentences of material from an internet source without citing it for a test	12.5	4.2	0.0	0.0	24
16. Copying a few sentences of material from an internet source without citing it for an assignment	41.7	0.0	0.0	4.2	24
17. Submitting a paper copied from another student	3.5	0.0	0.0	0.0	86
18. Copying a few sentences of material from a written source without citing it for a test	13.0	0.0	0.0	0.0	23
19. Submitting work done by someone else (friend, another student, family, partner/girlfriend, boyfriend)	3.4	1.1	1.1	0.0	88
20. Submitting a paper obtained in large part from a term paper "mill" or website	1.4	2.9	0.0	1.4	69
21. Copying materials almost word for word from a written source and submitting for a test	8.3	0.0	0.0	0.0	24
22. Copying materials almost word for word from a written source and submitting for an assignment	13.0	0.0	0.0	0.0	23
23. Sharing an assignment with another student, so they have an example to work from	39.8	11.4	1.1	2.3	88
24. Using a false excuse to obtain extension on a due date	4.2	4.2	0.0	0.0	24
25. Writing or providing a paper for another student	2.3	0.0	0.0	0.0	87
26. Providing a previously graded assignment to someone to submit as their own work	2.3	0.0	0.0	0.0	88
27. Hiding library or course materials	0.0	0.0	0.0	0.0	24
28. Damaging library or course materials	4.2	0.0	0.0	0.0	24
29. Altering a grade or test to try to get additional credit	0.0	0.0	0.0	0.0	24
30. Submitting a paper obtained from the agency that helped you apply to Bow Valley College.	2.8	4.2	0.0	0.0	71
31. Using answers obtained from an online tutoring site during a test.	15.5	5.6	1.4	0.0	71
32. Using answers obtained from an online tutoring site for an assignment	28.2	12.7	1.4	0.0	71
33. Providing your course work to a file-sharing site	7.0	2.8	0.0	0.0	71
34. Taking an exam for someone you know (friend, another student, family)	1.1	0.0	0.0	0.0	87

	Frequency of Behaviour (%)				<i>N</i>
	1-2 times	3-5 times	6-9 times	>10 times	
35. Arranging for someone you know (friend, another student, family) to take an exam for you	0.0	0.0	0.0	1.1	88
36. Arranging for someone you do not know to take a test for you (e.g., through a professional service)	1.4	1.4	0.0	1.4	70
37. Using text generating or academic writing software to create a written assignment	8.5	1.4	1.4	0.0	71
38. Editing an original source to evade plagiarism detection software such as Turnitin.	0.0	0.0	0.0	0.0	24
39. Recording or taking pictures of course materials (e.g., slides) or tests without permission to do so.	0.0	0.0	4.2	8.3	24
40. Sharing information (e.g., pictures or files containing sources/answers) on social media	5.7	2.3	0.0	1.1	88

Knowledge that the behaviour was a violation, and the perceived seriousness of each behaviour was summarized below in Table 29. The highest percentage behaviour reported as 'Not a Violation' or 'Trivial' was item 2 'Working on an assignment with other students (in the same class or in a different class) when the instructor asked for individual work' (collusion) (37.4%, $n = 236/632$). This was followed by 'Sharing an assignment with another student, so they have an example to work from' (a sharing behaviour) (34.1%, $n = 216/634$). Over 20% of respondents reported 2 commercial contract cheating behaviours as either 'Not a violation' or 'Trivial', 'Using answers obtained from an online tutoring site for an assignment' (22.2%, $n = 146/656$) and 'In a course requiring computer work, using code from an internet service' (21.5%, $n = 139/646$).

Of the top 5 behaviours perceived as 'Serious', 3 were contract cheating behaviours and 2 were individual behaviours. The three contract cheating behaviours were 'Arranging for someone you know (friend, another student, family) to take an exam for you' (sharing) (92.2%, $n = 576/625$), 'Taking an exam for someone you know (friend, another student, family)' (sharing) (91.4%, $n = 571/625$), and 'Arranging for someone you do not know to take a test for you (e.g., through a professional service)' (commercial contract cheating) (88.7%, $n = 575/648$). The 2 top individual behaviours rated as 'Serious' included 'Submitting a paper copied from another student' (92.1%, $n = 574/623$) and 'Copying from another student during a test without their knowledge' (89.6%, $n = 549/613$).

Table 29. Knowledge of Violation and Perceived Seriousness of Behaviours

	Knowledge (%)		Seriousness (%)		N
	Not a Violation	Trivial	Moderate	Serious	
1. Fabricating or falsifying a bibliography or reference list	4.6	6.2	22.8	66.5	615
2. Working on an assignment with other <u>students</u> when the instructor asked for individual work	14.9	22.5	26.9	35.8	632
3. Getting questions and/or answers from someone you know who has already taken the test	6.0	8.2	20.9	64.8	631
4. In a course requiring computer work, copying code written by other <u>students</u>	5.0	4.8	12.7	77.5	623
5. In a course requiring computer work, copying code <u>found online</u> , without citing it	3.8	4.9	15.9	75.4	610
6. In a course requiring computer work, using code from an <u>internet service</u>	11.1	10.4	24.5	54.0	646
7. Evading camera surveillance during an online exam	5.4	6.2	16.4	72.0	610
8. Fabricating or falsifying research data	3.6	3.6	15.2	77.5	610
9. Copying from another student during a test with their knowledge	4.0	2.5	7.0	86.5	629
10. Copying from another student during a test without their knowledge	3.4	1.6	5.4	89.6	613
11. Using digital technology to get help from another <u>student</u> during a test or examination	4.1	2.1	6.4	87.4	627
12. Using digital technology to get help from <u>someone you know</u> during a test	4.1	3.3	7.6	84.9	629
13. Using digital technology to get help from an <u>exam service</u> found on the internet during a test	6.6	3.5	12.1	77.8	654
14. Using prohibited notes or cheat sheets during a test	3.1	3.1	8.7	85.1	612
15. Copying a few sentences of material from an internet source without citing it for a test	4.6	7.8	17.2	70.4	612
16. Copying a few sentences of material from an internet source without citing it for an assignment	2.9	8.3	20.4	68.3	612
17. Submitting a paper copied from another student	4.2	1.1	2.6	92.1	623
18. Copying a few sentences of material from a written source without citing it for a test	4.6	7.7	18.4	69.3	609
19. Submitting work done by someone else (friend, student, family, partner/girlfriend, boyfriend)	4.5	2.2	7.8	85.5	627
20. Submitting a paper obtained in large part from a term paper "mill" or website	6.4	3.7	10.9	79.0	652
21. Copying materials almost word for word from a written source and submitting for a test	3.4	2.5	7.8	86.3	612
22. Copying materials almost word for word from a written source and submitting for an assignment	3.0	2.1	11.0	83.9	610
23. Sharing an assignment with another student, so they have an example to work from	18.5	15.6	23.3	42.6	634
24. Using a false excuse to obtain extension on a due date	10.0	14.8	22.5	52.8	610
25. Writing or providing a paper for another student	5.1	3.5	10.9	80.5	626
26. Providing a previously graded assignment to someone to submit as their own work	4.2	2.1	7.7	86.1	626
27. Hiding library or course materials	11.9	10.6	18.2	59.3	605
28. Damaging library or course materials	25.2	6.3	13.9	54.6	603
29. Altering a grade or test to try to get additional credit	5.2	4.4	8.0	82.4	612
30. Submitting a paper obtained from the agency that helped you apply to Bow Valley College.	10.0	8.1	17.0	65.0	643
31. Using answers obtained from an online tutoring site during a test.	6.3	5.7	12.4	75.7	653
32. Using answers obtained from an online tutoring site for an assignment	10.5	11.7	21.5	56.3	656
33. Providing your course work to a file-sharing site	9.4	8.0	20.3	62.3	650

	Knowledge (%)		Seriousness (%)		N
	<i>Not a Violation</i>	<i>Trivial</i>	<i>Moderate</i>	<i>Serious</i>	
34. Taking an exam for someone you know (friend, another student, family)	4.3	1.3	3.0	91.4	625
35. Arranging for someone you know (friend, another student, family) to take an exam for you	4.0	1.0	2.9	92.2	625
36. Arranging for someone you do not know to take a test for you (e.g., through a professional service)	5.9	1.5	3.9	88.7	648
37. Using text generating or academic writing software to create a written assignment	7.4	6.3	18.0	68.3	646
38. Editing an original source to evade plagiarism detection software such as Turnitin.	5.9	5.1	14.3	74.8	610
39. Recording or taking pictures of course materials (e.g., slides) or tests without permission to do so.	8.0	11.5	17.4	63.1	610
40. Sharing information (e.g., pictures or files containing sources/answers) on social media	6.4	6.4	15.7	71.5	625

Follow-up Questions

Respondents who reported they had engaged in commercial contract cheating and/or sharing behaviours were asked a series of follow-up questions (drawn from Bretag et al., 2019; Awdry, 2021). Follow-up questions included:

- The main reason for engaging in the behaviour
- How they learned about the service/who to turn to (learned about source)
- What they gave/received in exchange for service/information (mode)
- How they used the information (purpose); and
- The penalty received if discovered (detection and penalty).

Participants were asked open-ended questions about why they engaged in commercial contract cheating and sharing behaviour. A content analysis of the responses was completed by two student researchers (CC, TP). The top two responses for why they used commercial contract cheating were:

1. To obtain more information or examples to help them complete the assignment/test (33.3%, $n = 22/66$)
2. For guidance and ideas about how to proceed with the assignment/test (30.3%, $n = 20/66$)

The top two responses for why respondents engaged in sharing behaviour were:

1. To flesh out ideas for a better understanding of the assignment/test (39.3%, $n = 35/89$)
2. To help another student (38.2%, $n = 34/89$)

Results for the follow-up questions about how respondents learned about the service/who to turn to, mode, purpose, and detection and penalty are summarized in Table 30.

Table 30. Summary of the Results from the Follow-up Questions for Contract Cheating

	Commercial Contract Cheating	Sharing Behaviour
<i>Learned about source</i>	• 56.1% saw it on the internet ($n = 37/66$) • 18.2% learned from a college peer ($n = 12/66$) • 4.5% a friend told them ($n = 3/66$)	• 22.5% they approached me ($n = 18/80$) • 12.5% a college peer told me who to go to ($n = 10/80$) • 7.5% approached a classmate ($n = 6/80$)
<i>Mode</i>	• 68.3% reported it was free ($n = 43/63$) • 7.9% exchanged information for course materials ($n = 5/63$) • 3.2% paid money for service ($n=2/63$), 3.2% referred a friend ($n = 2/63$), 3.2% exchanged for personal information ($n = 2/63$)	• 67.1% it was free ($n = 53/79$) • 10.1% exchanged information about assessment ($n = 8/79$)
<i>Purpose</i>	• 60.3% used it for reference only ($n = 38/63$) • 14.3% edited it before submission ($n = 9/63$) • 9.5% used it to submit as their own ($n = 6/63$)	• 57% used it for reference only ($n = 45/79$) • 2.5% edited it before submission ($n = 2/79$)
<i>Detection and penalty</i>	• 41.8% action was never discovered ($n = 23/55$) • 18.2% never received a penalty ($n = 10/55$) • 9.1% received a zero (0) on assignment ($n = 5/55$) • 5.5% received an informal warning ($n = 3/55$) • 3.6% received a zero on assignment + warning letter ($n = 2/55$) • 3.6% failed the course ($n = 2/55$)	• 32.9% action was never discovered ($n = 24/73$) • 20.0% never received a penalty ($n = 20/73$) • 5.5% received a zero (0) on assignment + warning letter ($n = 4/73$) • 4.1% received a verbal warning, 4.1% received a warning letter ($n = 3/73$)

Demographics

Chi-square tests of independence were used to determine if there were significant associations between engagement in commercial contract cheating and sharing behaviour and demographic characteristics. Significant associations were found between engagement in violation behaviour and employment status, student status, marital status, language, and gender. As Table 31 shows, significant associations varied by type of behaviour.

A significant association between commercial contract cheating and employment status was found, $\chi^2(1,606) = 4.27, p = .039$. About 73% (73.4%) of those engaged in commercial contract cheating were working compared to 26.6% not working at the time of the survey. Respondents who reported they engaged in sharing behaviours were more likely to be domestic students (79.3%) and not married (73.2%) than international (20.7%) or married respondents (26.8%) [$\chi^2(1,607) = 10.65, p = .001$; $\chi^2(1,607) = 12.40, p < .001$]. Females (70.9%) compared to other genders (29.1%) were more likely to report they had engaged in any of the violation behaviours ($\chi^2(1,616) = 6.98, p = .008$).

Table 31. Engagement in Behaviour by Demographic Characteristics (%)

	Commercial Contract Cheating		Sharing Behaviour		Contract Cheating		All Behaviours	
	Yes	No	Yes	No	Yes	No	Yes	No
Student Status								
International	35.4	37.3	20.7	39.4	26.3	39.8	30.0	39.4
Domestic	64.6	62.7	79.3	60.6	73.7	60.2	70.0	60.6
<i>N</i>	65	544	82	525	118	492	140	470
Language								
English	65.6	59.9	70.0	59.0	69.6	58.2	66.7	58.5
Other than English	34.4	40.1	30.0	41.0	30.4	41.8	33.3	41.5
<i>N</i>	64	538	80	520	115	488	138	465
Gender								
Female	72.3	79.6	75.6	79.5	71.2	80.7	70.9	81.3
Other gender	27.7	20.4	24.4	20.5	28.8	19.3	29.1	18.7
<i>N</i>	65	550	82	531	118	498	141	475
Marital status								
Married	37.5	45.7	26.8	47.6	35.6	47.2	34.3	48.1
Not married	62.5	54.3	73.2	52.4	64.4	52.8	65.7	51.9
<i>N</i>	64	545	82	525	118	492	140	470
Employment status								
Working	73.4	60.1	53.7	62.8	61.0	61.8	63.1	61.2
Not working	26.6	39.9	46.3	37.2	39.0	38.2	36.9	38.8
<i>N</i>	64	542	82	524	118	489	141	466

Note: Contract cheating = commercial contract cheating and sharing behaviours; All behaviours = commercial contract cheating, sharing, and individual behaviours.

A Kruskal-Wallis H test revealed significant differences in frequency of sharing, contract cheating, and all behaviours between age categories [$H(5) = 12.96, p = .024$; $H(5) = 11.12, p = .049$; $H(5) = 12.84, p = .025$ respectively]. Younger respondents (21-30 years) engaged in sharing, contract cheating, and all behaviours more frequently than older respondents (31-40 years) ($U = 19728.0, p < .001$; $U = 19223.0, p = .002$; $U = 18923.5, p < .001$) (see Table 32).

Table 32. Percentage of Respondents that Engaged in Behaviours by Age

	<20 years	21-30 years	31-40 years	41-50 years	51-60 years	>60 years
Commercial Contract Cheating (n=63)	20.6	41.3	23.8	12.7	0.0	1.6
Sharing Behaviours (n=82)	15.9	48.8	14.6	12.2	6.1	2.4
Contract Cheating (n=117)	17.1	45.3	18.8	13.7	3.4	1.7
All Behaviours (n=138)	18.1	44.9	18.8	13.0	3.6	1.4

A significant association was also found between number of children cared for at home and frequency of commercial contract cheating and sharing behaviours ($r_s(595) = -.087, p = .033$; $r_s(591) = -.141, p < .001$). Higher numbers of children were associated with lower frequency of behaviours.

Table 33 shows the percentage of respondent that engaged in violation behaviours by school of program. Kruskal-Wallis H tests found significant differences between the frequency of contract cheating behaviours and school of program ($H(4) = 10.33, p = .035$) and frequency of all behaviours and school of program ($H(4) = 11.18, p = .025$). School of Health and Wellness reported more frequent contract cheating ($mean\ rank = 191.09$) compared to Chiu School of Business ($mean\ rank = 172.13$; $U = 13993.0, p = .003$). School of Community Studies reported ($mean\ rank = 202.87$) more frequent violation behaviours than Chiu School of Business ($mean\ rank = 182.09$) ($U = 1611.5, p = .002$).

Table 33. Percentage of Respondents that Engaged in at least One Behaviour by School of Program

	School of Community Studies	Chiu School of Business	School of Health and Wellness	School of Technology	Open Studies
Commercial Contract Cheating (n=63)	30.2	19.0	34.9	12.7	3.2
Sharing Behaviours (n=79)	38.0	20.3	34.2	6.3	1.3
Contract Cheating (n=114)	30.7	20.2	37.7	8.8	2.6
All Behaviours (n=136)	32.4	22.8	33.8	8.8	2.2

Kruskal-Wallis H tests found significant differences in frequency of sharing behaviours and all behaviours for number of terms completed [$H(4) = 19.61, p < .001$; $H(4) = 15.46, p = .004$]. Respondents in their first term reported less frequent sharing ($mean\ rank = 148.16$) and all

violation behaviours (*mean rank* = 180.27) than those who had completed 3-4 terms (*mean rank* = 178.66; 206.51) ($U = 3047.5, p < .001$; $U = 11998.0, p < .001$).

Perception of Teaching and Learning Environment

Mann Whitney U tests found perceived instructor support significantly differed for sharing behaviours ($U = 33114.5, p < .001$). The median for instructor support was 3.50 for respondents who engaged in sharing and 4.00 for respondents who did not engage in sharing. Respondents who engaged in sharing were more likely to disagree that instructor support was available compared to respondents who did not share. Instructor support did not differ significantly for commercial contract cheating behaviours ($U = 35486.5, p = .241$).

Table 34 shows that respondents who engaged in sharing were also more likely to disagree that 'Opportunities to learn about academic integrity and cheating' and 'Citing and referencing supports' were available at the college compared to those who did not share ($U = 30791.0, p = .006$; $U = 30200.0, p = .016$). For example, 87.3% of respondents who did not share 'Strongly Agree' or 'Agree' that opportunities to learn about academic integrity were available at the college compared to 78.3% of those reporting they shared.

Table 34. Percentage of Respondents who 'Strongly Agree' or 'Agree' with College Support by Behaviour

	Commercial Contract Cheating		Sharing Behaviours		Contract Cheating		All Behaviours	
	Yes (<i>n</i> =103)	No (<i>n</i> =645)	Yes (<i>n</i> =92)	No (<i>n</i> =575)	Yes (<i>n</i> =123)	No (<i>n</i> =667)	Yes (<i>n</i> =151)	No (<i>n</i> =639)
Opportunities to learn about academic integrity and cheating at college are widely available	79.6	87.0	78.3	87.3	79.7	87.0	80.2	87.1
Citing and referencing supports are at the college	83.5	89.2	84.8	89.4	85.4	88.6	84.7	88.9
Help of student advocates on matters of academic integrity	56.3	55.6	51.0	54.8	52.8	56.9	53.0	57.1

Student Norms

Mann Whitney U tests were used to determine if there were significant differences in student norms and engagement in violation behaviours by type. Statistically significant differences in student norms between those who did and did not engage in commercial contract cheating, sharing, contract cheating, and all behaviours were found. For example, respondents who reported they had engaged in commercial contract cheating reported higher proportions of students at the college engaging in sharing (*median* = 40.00), commercial contract cheating

(*median* = 52.00), plagiarism (*median* = 30.00), and collusion (*median* = 41.00) compared to respondents who did not engage in commercial contract cheating (*median* = 21.00; 25.00; 15.50; 20.00) ($U = 22805.5, p < .001$; $U = 15763.0, p < .001$; $U = 21223.0, p < .001$; $U = 18734.0, p < .001$).

Significant Spearman's correlation coefficients between frequency of behaviours and student norms were also found. For example, a significant positive relationship between frequency of sharing and perceived proportion of students engaging in sharing behaviours at the college was found ($r_s(634) = .195, p < .001$). Higher frequency of sharing was associated with higher percentage of perceived student engagement in sharing.

Personal and Social Resources

Table 35 shows the percentage of participants who were 'Very Confident' for the 5 items that measured self-efficacy by engagement in violation behaviour. Participants who engaged in commercial contract cheating reported significantly lower confidence levels for all 5 items of self-efficacy compared to participants that did not engage in this behaviour [$\chi^2(2,747) = 11.63, p = .003$; $\chi^2(2,743) = 16.03, p < .001$; $\chi^2(2,743) = 6.77, p = .034$; $\chi^2(2,744) = 19.20, p < .001$; $\chi^2(2,744) = 15.67, p < .001$]. No significant associations were found between self-efficacy items and sharing, contract cheating, or all behaviours.

Table 35. Percentage of Participants Reporting 'Very Confident' in 5 Items of Self-Efficacy by Violation Behaviours

	Commercial Contract Cheating		Sharing Behaviours		Contract Cheating		All Behaviours	
	Yes	No	Yes	No	Yes	No	Yes	No
Cite and reference sources used in a written assignment	37.9 (n=103)	50.2 (n=644)	50.0 (n=92)	48.9 (n=575)	51.2 (n=123)	47.2 (n=665)	49.7 (n=151)	47.4 (n=637)
Research for an assignment or paper	37.6 (n=101)	56.2 (n=642)	59.8 (n=92)	54.2 (n=572)	51.6 (n=122)	54.0 (n=661)	51.3 (n=150)	54.2 (n=633)
Paraphrase or summarize an author's words/ideas in an assignment	39.2 (n=102)	51.5 (n=641)	52.2 (n=92)	50.4 (n=573)	50.4 (n=123)	49.3 (n=661)	48.3 (n=151)	49.8 (n=633)
Complete an assignment on your own	63.4 (n=101)	75.6 (n=643)	81.5 (n=92)	74.0 (n=574)	77.9 (n=122)	73.5 (n=663)	75.3 (n=150)	73.9 (n=635)
Complete a test on your own	62.4 (n=101)	78.4 (n=643)	81.3 (n=91)	76.7 (n=575)	75.6 (n=123)	76.7 (n=661)	74.7 (n=150)	77.0 (n=634)

Participants who engaged in commercial contract cheating were also more likely to report significantly lower median mastery scores (*median* = 4.00) than participants who did not

engage in this behaviour (*median* = 4.25) ($U = 36419.5$, $p = .041$). There were no significant differences between median mastery scores for those who did and did not engage in the other measures of violation behaviours.

Table 36 summarized the percentage of participants who reported they used the 5 coping strategies ‘some’ or ‘a lot’ by engagement in violation behaviour. Significant differences in positive reinterpretation, beliefs, and active coping were found between participants who shared and those that did not engage in sharing behaviour ($U = 24893.0$, $p = .031$; $U = 24992.0$, $p = .024$; $U = 26378.5$, $p < .001$). Sharers used positive reinterpretation (*mean rank* = 269.93), beliefs (*mean rank* = 267.72), and active coping (*mean rank* = 249.81) less than participants reporting that they did not share (*mean ranks* = 313.29, 313.07, 315.27 respectively). No significant differences in usage of coping strategies were found for commercial contract cheating.

Participants who reported they engaged in any violation behaviour used positive reinterpretation and active coping less than participants who did not engage in violation behaviour ($U = 29779.0$, $p = .036$; $U = 28303.0$, $p = .003$). About 60% (58.8%) of those engaged in violation behaviour used positive reinterpretation compared to almost 65% (64.8%) of participants that did not report behaviour.

Table 36. Percentage of Participants Rating Frequency of Usage as ‘Some’ and ‘A Lot’ for 5 Coping Strategies by Behaviour

	Commercial Contract Cheating		Sharing Behaviours		Contract Cheating		All Behaviours	
	Yes	No	Yes	No	Yes	No	Yes	No
Avoidance	71.9 (<i>n</i> =64)	71.9 (<i>n</i> =551)	74.3 (<i>n</i> =82)	71.4 (<i>n</i> =532)	75.2 (<i>n</i> =117)	71.2 (<i>n</i> =449)	74.3 (<i>n</i> =140)	71.3 (<i>n</i> =476)
Positive Reinterpretation	60.0 (<i>n</i> =65)	63.9 (<i>n</i> =550)	58.5 (<i>n</i> =82)	64.1 (<i>n</i> =532)	59.3 (<i>n</i> =118)	64.4 (<i>n</i> =498)	58.8 (<i>n</i> =141)	64.8 (<i>n</i> =475)
Beliefs	48.4 (<i>n</i> =64)	49.2 (<i>n</i> =550)	37.8 (<i>n</i> =82)	50.8 (<i>n</i> =531)	43.6 (<i>n</i> =117)	50.6 (<i>n</i> =498)	44.3 (<i>n</i> =140)	50.7 (<i>n</i> =475)
Active	73.9 (<i>n</i> =65)	81.8 (<i>n</i> =548)	71.9 (<i>n</i> =82)	82.2 (<i>n</i> =530)	73.7 (<i>n</i> =118)	82.7 (<i>n</i> =496)	75.2 (<i>n</i> =141)	82.6 (<i>n</i> =473)
Venting	67.7 (<i>n</i> =65)	63.0 (<i>n</i> =549)	65.9 (<i>n</i> =82)	62.9 (<i>n</i> =531)	62.7 (<i>n</i> =118)	63.6 (<i>n</i> =497)	63.1 (<i>n</i> =141)	63.5 (<i>n</i> =474)

No statistically significant differences between family/friend social support or peer support and engagement in violation behaviours were found (e.g., sharing, $U = 17967.0$, $p = .963$; $U = 17231.0$, $p = .796$). Nor did we find significant associations between family/friend or peer support and frequency for any type of behaviour (e.g., commercial contract cheating, $r_s(614) = .003$, $p = .914$; $r_s(611) = .031$, $p = .451$). Type of support (i.e., emotional, informational,

instrumental) had no significant relationship with engagement in violation behaviour (e.g., sharing and instrumental support from peers, $\chi^2(2,613) = 2.04, p = .361$).

Perceived Seriousness of Violation Behaviours

Mann Whitney U tests were used to examine the differences in perceived seriousness of behaviours for engagement in commercial contract cheating and sharing behaviour. Significant differences between those who did and did not engage in behaviours were found for both ($U = 12655.5, p < .001$; $U = 17407.5, p < .001$). Participants that engaged in commercial contract cheating perceived violation behaviours were less serious (*mean rank* = 114.02) than participants who did not engage in commercial contract cheating (*mean rank* = 272.67). Similarly, sharers (*mean rank* = 164.74) perceived behaviours to be less serious than non-sharers (*mean rank* = 273.80).

Spearman's correlation coefficients were examined to test if there were associations between perceived seriousness and frequency of commercial contract cheating and sharing behaviour. Significant associations were found between perceived seriousness and frequency of engagement for each type of behaviour ($r_s(525) = -.222, p = .001$; $r_s(525) = -.136, p = .002$). High perceived seriousness was correlated with low frequency of engagement in both types of contract cheating behaviour.

Stress

Table 37 shows the mean number of stressors experienced by type of violation behaviour. Mann Whitney U tests were used to explore the differences in median number of stressors for those who engaged in and those who did not engage in violation behaviour. Mean number of stressors were presented in the table to reflect differences more accurately than medians. Statistically significant differences were highlighted in the table.

Significant differences in total stress, personal stress, and life events were found between respondents who engaged in commercial contract cheating and those who did not engage in this behaviour ($U = 15378.5, p = .034$; $U = 15266.0, p = .027$; $U = 14998.5, p = .016$ respectively). Respondents who engaged in commercial contract cheating reported more total and personal stressors and life events (*mean rank* = 354.49, 357.20, 360.25) than respondents not engaging in commercial contract cheating (*mean rank* = 305.26, 305.51, 304.57).

Respondents who engaged in sharing behaviour reported significantly more stressors for all types of stress except for work stress ($U = 20156.5, p = .182$) and school-related role conflict ($U = 19423.0, p = .052$) compared to non-sharers.

Significant differences in stress were also found for respondents who engaged in contract cheating (commercial and sharing) compared to those who did not contract cheat for all types of stress except family stress ($U = 32378.5$, $p = .161$), network stress ($U = 32919.0$, $p = .059$), and school-related role conflicts ($U = 31972.5$, $p = .230$).

Table 37. Mean Number of Stressors Experienced by Behaviour

	Commercial Contract Cheating		Sharing Behaviour		Contract Cheating		All Behaviours	
	Yes	No	Yes	No	Yes	No	Yes	No
Total Stress (0–64)	8.83* (n=66)	7.37 (n=554)	10.40** (n=82)	7.10 (n=537)	9.25** (n=119)	7.09 (n=503)	9.40** (n=142)	6.95 (n=480)
Role Domain								
Work (0-9)	1.62 (n=66)	1.31 (n=556)	1.48 (n=82)	1.32 (n=539)	1.55* (n=119)	1.29 (n=505)	1.59* (n=142)	1.26 (n=482)
Family (0-20)	1.15 (n=66)	1.13 (n=556)	1.63* (n=82)	1.06 (n=539)	1.29 (n=119)	1.10 (n=505)	1.37* (n=142)	1.06 (n=482)
School (0-17)	3.70 (n=66)	3.05 (n=556)	4.46** (n=82)	2.92 (n=539)	3.87** (n=119)	2.92 (n=505)	3.89** (n=142)	2.88 (n=482)
Duration								
Life events (0-45)	6.03* (n=66)	4.82 (n=554)	6.93** (n=82)	4.65 (n=537)	6.28** (n=119)	4.62 (n=503)	6.33** (n=142)	4.52 (n=480)
Chronic strains (0-15)	2.05 (n=66)	1.85 (n=556)	2.49** (n=82)	1.78 (n=539)	2.17* (n=119)	1.79 (n=505)	2.20* (n=142)	1.78 (n=482)
Reference								
Personal (0-46)	8.05* (n=66)	6.64 (n=555)	9.13** (n=82)	6.44 (n=538)	8.21** (n=119)	6.43 (n=504)	8.37** (n=142)	6.30 (n=481)
Network (0-17)	0.79 (n=66)	0.74 (n=555)	1.27* (n=82)	0.67 (n=538)	1.04 (n=119)	0.68 (n=504)	1.04* (n=142)	0.66 (n=481)
Interaction								
School-related role conflict (0-4)	0.92 (n=66)	0.85 (n=556)	1.11 (n=82)	0.82 (n=539)	0.94 (n=119)	0.84 (n=505)	1.03* (n=142)	0.81 (n=482)
School-related role strain (0-4)	1.36 (n=66)	1.11 (n=556)	1.57** (n=82)	1.07 (n=539)	1.38* (n=119)	1.08 (n=505)	1.37* (n=142)	1.06 (n=482)
Intensity								
Traumatic life adversities (0-11)	0.71 (n=66)	0.50 (n=556)	0.93** (n=82)	0.46 (n=539)	0.79* (n=119)	0.46 (n=505)	0.80** (n=142)	0.44 (n=482)

p < .05*, p < .001**

Table 38 shows the number of respondents who reported experiencing stress for each of the 64 stressors in the stress inventory by contract cheating behaviour. The top 5 stressors reported by those who engaged in and did not engage in commercial contract cheating were the same and included:

1. Covid-19 pandemic (68.2%, $n = 45/66$; 60.6%, $n = 337/556$)
2. Increased academic workload (53.0%, $n = 35/66$; 54.7%, $n = 304/556$)
3. Worried about overall performance in college (51.5%, $n = 34/66$; 49.5%, $n = 275/556$)
4. Not achieving grades, you wanted to (42.4%, $n = 28/66$; 37.9%, $n = 211/556$)
5. Moved (42.4%, $n = 28/66$; 34.5%, $n = 192/556$)

The top 5 stressors reported by those who engaged in sharing behaviour were:

1. Covid-19 pandemic (79.3%, $n = 65/82$; 58.8%, $n = 317/539$)
2. Increased academic workload (59.8%, $n = 49/82$; 53.8%, $n = 290/539$)
3. Worried about overall performance in college (58.5%, $n = 48/82$; 48.4%, $n = 261/539$)
4. Not achieving grades, you wanted to (50.0%, $n = 41/82$; 36.7%, $n = 198/539$)
5. Fear of not graduating (41.5%, $n = 34/82$)

Non-sharers had the same top 4 stressors, but the fifth top stressor was 'Moved' (34.9%, $n = 188/539$).

A greater percentage of respondents who did not engage in commercial contract cheating (16.7%, $n = 93/556$) experienced 'Work conflicting with college' than those who did not engage in this behaviour (12.1%, $n = 8/66$). A greater percentage of respondents that did engage in commercial contract cheating experienced 'College conflicting with work' (31.8%, $n = 21/66$) compared to those who did not engage in this behaviour (25.7%, $n = 143/556$). Those who engaged in commercial contract cheating also had higher percentages reporting job-related stress such as 'worried about losing job' (16.7%), change of job' (28.8%), 'threat of layoff' (7.6%), and 'unable to find work' (27.3%) compared to the non-commercial contract cheating respondents.

Overall, 37.7% of respondents reported experiencing at least one traumatic life adversity ($n = 235/624$) (stressors 3, 4, 6, 8, 9, 39, 40, 41, 49, 52, and 54). More sharers reported traumatic events (for all trauma events except stressor 40) compared to non-sharers.

Table 38. Stressors by Contract Cheating Behaviour

	Total (n=624)		Commercial Contract Cheating				Sharing Behaviour			
	#	%	Yes (n=66)		No (n=556)		Yes (n=82)		No (n=539)	
	#	%	#	%	#	%	#	%	#	%
1. Serious accident or injury	25	4.0	5	7.6	20	3.6	8	9.8	17	3.2
2. Serious illness	75	12.0	12	18.2	63	11.3	15	18.3	60	11.1
3. Change in the use of alcohol or drugs	56	9.0	10	15.2	46	8.3	18	22.0	38	7.1
4. Discrimination (by race, ethnicity, gender, age, ableness, sexual orientation)	76	12.2	10	15.2	66	11.9	13	15.9	63	11.7
5. Caring for an aging parent almost every day	41	6.6	3	4.5	38	6.8	5	6.1	36	6.7
6. Trouble with the law	6	1.0	1	1.5	5	0.9	2	2.4	4	0.7
7. Pregnancy, abortion, or miscarriage	30	4.8	3	4.5	27	4.9	4	4.9	26	4.8
8. Criminal victimization	6	1.0	2	3.0	4	0.7	4	4.9	2	0.4
9. Separation or divorce	24	3.8	2	3.0	22	4.0	5	6.1	19	3.5
10. COVID-19 Pandemic	382	61.2	45	68.2	337	60.6	65	79.3	317	58.8
11. Moved	221	35.4	28	42.4	192	34.6	33	40.2	188	34.9
12. Close relationship ended	104	16.7	13	19.7	91	16.4	20	24.4	83	15.4
13. Increased academic workload	339	54.3	35	53.0	304	54.7	49	59.8	290	53.8
14. Missed too many classes and have fallen behind in homework/assignments	87	13.9	13	19.7	74	13.3	19	23.2	68	12.6
15. Roommate conflict	41	6.6	6	9.1	35	6.3	6	7.3	35	6.5
16. Failed a course	39	6.3	7	10.6	32	5.8	11	13.4	28	5.2
17. Repeated a course	52	8.3	4	6.1	48	8.6	16	19.5	36	6.7
18. Experienced an incident of academic misconduct	10	1.6	4	6.1	6	1.1	2	2.4	8	1.5
19. Appealed a mark or grade	27	4.3	4	6.1	23	4.1	6	7.3	21	3.9
20. Threat of losing financial aid to pay for college	56	9.0	7	10.6	49	8.8	10	12.2	46	8.5
21. Fear of not graduating	168	26.9	22	33.3	146	26.3	34	41.5	134	24.9
22. Trouble accessing a computer or other technology necessary for completing your assignments/exams	93	14.9	12	18.2	81	14.6	18	22.0	75	13.9
23. Exam stress due to e-proctoring surveillance	109	17.5	17	25.8	92	16.5	24	29.3	85	15.8
24. College conflicting with family life	162	26.0	17	25.8	145	26.1	24	29.3	138	25.6
25. College conflicting with job	164	26.3	21	31.8	143	25.7	25	30.5	139	25.8
26. Trouble working with or getting along with college peers	87	13.9	16	24.2	71	12.8	20	24.4	67	12.4
27. Trouble working with or getting along with instructors	73	11.7	12	18.2	61	11.0	20	24.4	53	9.8
28. Worried about your overall performance in college	309	49.5	34	51.5	275	49.5	48	58.5	261	48.4
29. Not achieving the grades you wanted to	239	38.3	28	42.4	211	37.9	41	50.0	198	36.7
30. Worried about losing job	88	14.1	11	16.7	77	13.8	10	12.2	78	14.5
31. Fired or laid off	41	6.6	4	6.1	37	6.7	8	9.8	33	6.1

	Total (n=624)		Commercial Contract Cheating				Sharing Behaviour			
	#	%	Yes (n=66)		No (n=556)		Yes (n=82)		No (n=539)	
			#	%	#	%	#	%	#	%
32. Major financial crisis	124	19.9	13	19.7	111	20.0	18	22.0	106	19.7
33. Change of job	116	18.6	19	28.8	97	17.4	16	19.5	99	18.4
34. Threat of layoff	26	4.2	5	7.6	21	3.8	2	2.4	24	4.5
35. Unable to find work	149	23.9	18	27.3	131	23.6	20	24.4	129	23.9
36. Economic recession	99	15.9	12	18.2	87	15.6	19	23.2	80	14.8
37. Demoted or pay cut	26	4.2	4	6.1	22	4.0	3	3.7	23	4.3
38. Work conflicting with college	101	16.2	8	12.1	93	16.7	17	20.7	84	15.6
39. Close friend died	40	6.4	6	9.1	34	6.1	9	11.0	31	5.8
40. A child died	1	0.2	0	0.0	1	0.2	0	0.0	1	0.2
41. Partner or spouse died	3	0.5	0	0.0	3	0.5	2	2.4	1	0.2
42. A child's behaviour is a source of concern	46	7.4	3	4.5	43	7.7	8	9.8	38	7.1
43. Child(ren) struggling with school	47	7.5	1	1.5	46	8.3	4	4.9	43	8.0
44. Involuntary separation from partner or spouse	16	2.6	1	1.5	15	2.7	4	4.9	12	2.2
45. Involuntary separation from friends	61	9.8	6	9.1	55	9.9	13	15.9	48	8.9
46. Involuntary separation from parents	44	7.1	7	10.6	37	6.7	5	6.1	39	7.2
47. Involuntary separation from children	8	1.3	0	0.0	8	1.4	0	0.0	8	1.5
48. Serious disagreements with parents	55	8.8	8	12.1	47	8.5	11	13.4	44	8.2
49. Partner or spouse has a change in the use of alcohol or drugs	14	2.2	3	4.5	11	2.0	7	8.5	7	1.3
50. Family member or friend has a long-term illness	72	11.5	8	12.1	64	11.5	19	23.2	53	9.8
51. Partner or spouse has a long-term illness	11	1.8	2	3.0	9	1.6	2	2.4	9	1.7
52. Parent died	16	2.6	0	0.0	16	2.9	3	3.7	13	2.4
53. Close friend seriously ill	21	3.4	3	4.5	18	3.2	5	6.1	16	3.0
54. Close family member died	85	13.6	13	19.7	72	12.9	13	15.9	71	13.2
55. Demands from parents or in-laws	44	7.1	5	7.6	39	7.0	10	12.2	34	6.3
56. A child moved out/back into house	9	1.4	1	1.5	8	1.4	3	3.7	6	1.1
57. Friends or family moved away	34	5.4	4	6.1	30	5.4	8	9.8	26	4.8
58. Child seriously ill	10	1.6	0	0.0	10	1.8	3	3.7	7	1.3
59. Partner or spouse seriously ill	4	0.6	2	3.0	2	0.4	3	3.7	1	0.2
60. Parent seriously ill	26	4.2	1	1.5	24	4.3	5	6.1	21	3.9
61. Friends are a negative influence	26	4.2	5	7.6	21	3.8	10	12.2	16	3.0
62. Family life conflicting with college	108	17.3	15	22.7	93	16.7	25	30.5	83	15.4
63. Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
64. Mental health concerns	16	2.6	2	3.0	14	2.5	3	3.7	13	2.4

Spearman's correlation coefficients were examined (see Table 39) to test for associations between stress (by type) and frequency of violation behaviour. There was no significant association between stress and frequency of commercial contract cheating behaviour. Frequency of sharing behaviours was found to be positively associated with all types of stress except for work stress ($r_s(616) = .047, p = .239$). High stress was significantly correlated with high frequency of sharing behaviours. Frequency of contract cheating behaviour (commercial + sharing) was positively correlated with total stress, school stress, life events, chronic strains, personal stress, school-related role conflicts, school-related role strains, and traumatic life adversities.

Table 39. Spearman's Correlation Coefficients for Stress and Frequency of Behaviours

	<i>Commercial Contract Cheating</i>	<i>Sharing Behaviour</i>	<i>Contract Cheating</i>	<i>All Behaviours</i>
Total Stress (0–64)	.042	.181**	.145**	.150**
Role Domain				
Work (0-9)	.023	.047	.051	.072
Family (0-20)	.001	.104*	.066	.077
School (0-17)	.034	.179**	.129**	.139**
Duration				
Life events (0-45)	.053	.182**	.151**	.148**
Chronic strains (0-15)	.029	.126*	.094*	.100*
Reference				
Personal (0-46)	.042	.175**	.138**	.144**
Network (0-17)	.003	.099*	.066	.070
Interaction				
School-related role conflict (0-4)	.024	.106*	.084*	.109*
School-related role strain (0-4)	.052	.120*	.101*	.110*
Intensity				
Traumatic life adversities (0-11)	.031	.122*	.097*	.104*

$p < .05^*$; $p < .001^{**}$

Perceived Seriousness of Violation Behaviours

Correlation coefficients were examined to test if there were associations between perceived seriousness of violation behaviours and stress. Significant negative correlations between all types of stress, except network stress, and perceived seriousness of behaviours were found ($r_s(521) = -.075, p = .086$). This was especially true for school stress ($r_s(522) = -.221, p < .001$). High school stress is significantly associated with less serious perceptions of violation behaviours.

Conclusions

The objectives of this research were to:

1. Address the need for more information about contract cheating in Alberta that will inform / advocate for policy to protect students.
2. Involve students as partners in research to develop a sense of agency around academic integrity.
3. Expand research by exploring stressors and resources outside the educational context toward a more comprehensive understanding of contract cheating.
4. Inform college communities toward the development of supports for students.

In this report we demonstrate the accomplishment of three of the four objectives. The research has given us a better understanding of the prevalence and nature of contract cheating among post-secondary college students in Alberta which will add to a continually growing body of knowledge about academic integrity in Canada. The results of the research will also expand on knowledge of the stress students experience and the personal and social resources they have access to while completing their programs that is related to contract cheating behaviour. With the help of the Alberta Council on Academic Integrity it is our intention to share this information with the wider educational community. Students, instructors, administrators, and policy makers may find the results useful toward developing evidence-based supports, resources, and initiatives at all levels of the college community. Finally, results from this study can be used to advocate for policy to protect students from commercial services.

Objective 2 of this project was partially accomplished with student involvement in the survey but will be addressed in greater detail at the conclusion of our “Students as Partners” study (Part B of the research).

Limitations

This research study does have its limitations. As with other self-report studies focusing on socially undesirable behaviours, the response rate was low, and behaviours were under-reported. Therefore, results may not be representative of the extent of post-secondary student experiences with contract cheating. Researchers also recognize the limitations of the use of a checklist to measure academic integrity violations and stress. There is much work to do in developing inclusive measures that may capture diverse perspectives and interpretations of behaviours considered as violations of academic integrity and events considered stressful. Additionally, we know that students generally report higher stress than other populations

(Eisenberg et al., 2013; Larcombe et al., 2016), but as this study was completed during a pandemic, it may not reflect levels of stress typically experienced by learners.

Knowledge Dissemination

The researchers shared knowledge about this project at the International Centre for Academic Integrity (ICAI) annual conference in March 2022 (virtually) in two presentations:

- **Reconceptualizing Contract Cheating as Part of the Stress Process Model**
 - Presenters: the lead researchers (CDF, MAT) along with Sarah Elaine Eaton and Sheryl Boisvert (co-investigators), representing the ACAI steering committee on contract cheating.
 - The presentation focused on how reconceptualizing contract cheating as part of the Stress Process Model provides an explanation of why a student's likelihood to engage in cheating behaviour may depend on their location within systems of stratification, participation within social institutions, and social relationships.
- **Students as partners in Academic Integrity Research: Takeaways from a Self-Report Survey of Career Program Learners**
 - Presenters: the student researchers, the lead researchers, and the ACAI partners.
 - This presentation highlighted our use of the recently emerging Students as Partners (SaP) practice. The student researchers, along with the lead researchers and community partners, shared their key takeaways from the experience of working together on the project.

As these presentations shared preliminary knowledge from the project, i.e., the theoretical framework and the students' take-aways from their experience as researchers, the lead researchers and co-investigators aim to present at the ICAI conference in 2023 as well as at the Canadian Symposium on Academic Integrity in 2023 to share findings from the study.

The lead researchers presented Reconceptualizing Contract Cheating as Part of the Stress Process Model to the Chiu School of Business in March 2022.

The lead researchers and student researchers presented on the research project, with the students sharing their advocacy resource, at the ACAI provincial meeting at Bow Valley College on May 26, 2022.

At the outset of the project, the lead researchers created a project brief in partnership with the ACAI partners, which is now published in the University of Calgary's PRISM repository, of which Bow Valley College hosts an institutional instance (Ferguson et al., 2021). Additionally, this current report will be published in PRISM.

The research report will be shared with ACAI for publication on their website. The lead researchers and co-investigators aim to write up the study findings for a peer-reviewed journal. The advocacy resource will be shared with ACAI and published on their website (see Appendix F and G). ACAI will share the resource among its member institutions. There is potential for a co-created paper between researchers and student researchers toward a submission to an academic journal at the conclusion of the SaP study (Part B of the research project).

Intellectual Property and Authorship

Intellectual Property Statement

As set out in Bow Valley College's Intellectual Property Policy (#300-2-14), "all IP created by College employees, contractors, learners and volunteers in the execution of their duties or in collaboration with external partners under the auspices and authority of the College shall be the property of the College" (p. 1).

In this instance, we recognize the intellectual property as being Client Driven IP, defined in the policy as "that created by employees, learners, volunteers and contractors in applied research collaborations that address challenges and opportunities brought to the College by the client" (2c.).

Student researchers hired to perform duties as part of this research project were employees of the college, and as such may not share, copy or publish the results of the research without the consent of all members of the research team (7d.).

Student researchers are "free to reference their participation in a project in a resume, portfolio, or curriculum vitae" (7b.) if no proprietary information is disclosed, and consent is granted by members of the research team.

Student researchers may contribute to dissemination of results (e.g., advocacy resource, internal and external presentations) at the discretion of the lead researchers and co-investigators.

It is understood that knowledge generated in this project was done in collaboration with members of the research team and therefore, student researchers and co-investigators cannot represent results as their own work.

Authorship Guidelines and Publication Ethics

Authorship will be determined following standard practices and based on substantive contribution to the forms of knowledge dissemination. The member of the research team who has contributed the most to the production of that output will be listed first, and the remainder

listed in order of their contribution. To help guide us we follow the recommendations and protocols from the International Committee of Medical Journal Editors (2021).

Research Team

Corrine D. Ferguson, BA, MA, Lead Researcher. Ferguson is an instructor at Bow Valley College in the department of Academic Innovation and Extended Education. She has been teaching at the college since 2013. Corrine teaches Introductory Sociology, Sociology of Family, and Sociology of Aging. Current research focuses on the stress process and academic integrity including plagiarism and contract cheating. She is particularly interested in involving “students as partners in research”.

Margaret A. Toye, BA, MA, PhD, Lead Researcher. Toye is an associate dean at Bow Valley College in the department of Academic Innovation and Extended Education, and at the time of writing this report is a steering committee member of the Alberta Council on Academic Integrity. She has engaged in research projects at Bow Valley College regarding contract cheating, predictors of Practical Nurse graduates’ success and failure in the licensing exam, and on language supports for nursing students.

Christina Carver, Justice Studies Diploma, Student Researcher. Carver is a recently graduated full-time student in the Justice program at Bow Valley College. She works for a Seniors Facility part-time and is volunteering at the 2022 Gutsy Walk for Crohn's and Colitis Canada. She recently has been accepted into Athabasca University, where she's pursuing a degree in Human Services.

Tonisha Pictin, Student Researcher. Pictin is a recently graduated full-time student in the Social Work program at Bow Valley College. She participated as a student representative for the Bow Valley College Social Work Advisory Committee and was a student member of the Alberta College of Social Workers. She is now pursuing a degree in social work at the University of Calgary.

Sarah Elaine Eaton, BA, MA, PhD, Co-Investigator. Eaton is an associate professor, Werklund School of Education and the Educational Leader in Residence, Academic Integrity, Taylor Institute for Teaching and Learning at the University of Calgary. She is a founding member of the Alberta Council of Academic Integrity and Co-Chair of the Contract Cheating Working Group.

Sheryl Boisvert, B.Ed., CPA, CGA, Co-Investigator. Boisvert is currently a full-time instructor at NorQuest College. She has performed a variety of roles at NorQuest College since 2001, but has found being an instructor to be the most fulfilling. Sheryl is a member of the steering

committee on the Alberta Council on Academic Integrity and co-chair of that council's Contract Cheating Working Group.

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Appendix A: Academic Integrity Survey

Hello Fellow Students,

As student researchers and members of the research team we invite you to complete this anonymous survey. Your participation in this study is voluntary and should take about 25 minutes to complete.

The purpose of the survey is to collect information about how we complete our assignments/tests and stressful events we experience so that we can:

- develop resources and supports for us to complete our work with integrity
- inform policy to create legislation against professional services that treat students unfairly

No personal information (e.g., name, student ID) will be collected in the survey. Your responses to the questions cannot be connected to you.

Enter a prize draw for 1 of 4, \$50.00 gift certificates for Amazon or Tim Hortons. Just provide your email address at the end of the survey. Your email address will not be linked to your survey answers and will remain completely confidential.

If any questions trigger strong emotional response, please contact Mental Health Help Line 1-877-3032642; Distress Centre Main Crisis Line:(403) 266-HELP (4357); or Bow Valley College Counselling Services 403-410-1440.

Any Questions?

Contact Your Student Researchers, Chrissy & Tonisha researchforstudents@bowvalleycollege.ca

This project has been approved by Bow Valley College Research Ethics Board (403) 410-1558; email researchethics@bowvalleycollege.ca.

By clicking NEXT, you indicate that you consent to participate. Thank you!

Academic Integrity Survey

College Environment

1. Have you been informed about the academic honesty/integrity or cheating policies at Bow Valley College?

☐ Yes

☐ No

2. Where and how much did you learn about the policies?

	Learned Nothing	Learned a Little	Learned Some	Learned a Lot	N/A
New Student Orientation	☐	☐	☐	☐	☐
AC101 Academic Success on D2L	☐	☐	☐	☐	☐
College Website	☐	☐	☐	☐	☐
Student Handbook	☐	☐	☐	☐	☐
Library Resources (e.g., website, workshops)	☐	☐	☐	☐	☐
Academic Success Centre (e.g., Learning Coach, Writing Support, Workshops)	☐	☐	☐	☐	☐
Peer Tutor	☐	☐	☐	☐	☐
Instructors	☐	☐	☐	☐	☐
Other (please specify)					

3. How strongly do you agree or disagree with the following statements?

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
I have opportunities to approach/contact my instructor for assistance when needed	☐	☐	☐	☐	☐
Instructors have explained Bow Valley College's Academic Honesty Policy and the consequences for breaking it	☐	☐	☐	☐	☐
Instructors spend class time teaching me how to cite (how to quote, paraphrase and summarize with acknowledgement) and reference	☐	☐	☐	☐	☐
Instructors spend class time talking about contract cheating and its consequences	☐	☐	☐	☐	☐
Instructors consistently monitor and discipline cheating behaviours	☐	☐	☐	☐	☐
Instructors spend class time explaining guidelines on group work and collaboration	☐	☐	☐	☐	☐

4. Opportunities to learn about academic integrity and cheating behaviours are widely available at the college.

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

5. If I need help with citing and referencing, there are supports at the college I can use.

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

6. I have the help of student advocates (e.g., peer tutors, representatives) on matters of academic integrity.

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

7. How confident are you that you can complete the following tasks?

	Not confident	Somewhat confident	Very confident
Cite and reference sources used in a written assignment or paper	☐	☐	☐
Research for an assignment or paper	☐	☐	☐
Paraphrase or summarize an author's words or ideas in an assignment	☐	☐	☐
Complete an assignment on your own	☐	☐	☐
Complete a test on your own	☐	☐	☐

8. Thinking about how much control you have over academic integrity, indicate your level of agreement or disagreement with the following statements.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
I have a great deal of control over my academic integrity	☐	☐	☐	☐	☐
The more effort I put into academic integrity in my courses the better I do at them	☐	☐	☐	☐	☐
I see myself as largely responsible for my academic integrity throughout my college career	☐	☐	☐	☐	☐
When I do poorly with respect to academic integrity in a course, it's usually because I haven't given it my best effort	☐	☐	☐	☐	☐

9. What percentage (%) of students at the college do you believe share assignments/test information with other students? Drag the slider to the preferred position, or enter a number in the textbox.

0%

5 %

100%

10. What percentage (%) of students at the college do you believe use assignment/test/tutoring/homework services other than those provided by the college? (e.g., online assignment/exam completion services, internet paper or essay "mills", online tutoring sites such as Chegg or Course Hero)? Drag the slider to the preferred position, or enter a number in the textbox.

0%

5 %

100%

11. What percentage (%) of students at the college do you believe plagiarize (i.e., copy information from a source without citing) on written assignments? Drag the slider to the preferred position, or enter a number in the textbox.

0%

5 %

100%

12. What percentage (%) of students at the college do you believe work on assignments/tests with other students when not permitted? Drag the slider to the preferred position, or enter a number in the textbox.

0%
5 %
100%

Academic Integrity Survey

Assignment/Test Completion or Tutoring Services

Please remember that your responses are completely anonymous. There is no way that anyone can connect you with any of your answers.

13. During your time at Bow Valley College have you ever used assignment/test/tutoring/homework services other than those provided by the college? (e.g., online assignment/exam completion services, internet paper or essay "mills", online tutoring sites such as Chegg or Course Hero)

☐ Yes

☐ No

14. How **often** (if ever) during your time at the college you have engaged in the behaviours below **and** how **serious** do you think the behaviour is? If the statement does not apply to any of the courses you have taken at the college, please select the 'Not Relevant' option.

How often	How serious
In a course requiring computer work, using code from an internet service, rather than writing your own	
Using digital technology (e.g., another computer, mobile phone, smart watches, earpieces, etc.) to get help from an exam service found on the internet during a test or examination	
Submitting a paper obtained in large part from a paper "mill" or website	
Submitting a paper obtained from the agency that helped you apply to Bow Valley College	
Using answers obtained from an online tutoring site (e.g., Chegg, Course Hero) <u>during a test</u>	

15. For the next set of behaviours how **often** (if ever) during your time at the college you have engaged in the behaviours below and how **serious** do you think the behaviour is? If the statement does not apply to any of the courses you have taken at the college, please select the 'Not Relevant' option.

How often

How serious

Using answers obtained from an online tutoring site (e.g., Chegg, Course Hero) for an assignment

Providing your course work (e.g., assignments, exams, assessment instructions) to a file-sharing site (e.g., Course Hero)

Arranging for someone you do not know to take a test for you (e.g., through a professional exam service offered on the internet)

Using text generating or academic writing software provided by a web service to create parts of or an entire written assignment (e.g., Essay Toolbox, Spinbot)

16. What is the main reason why you used assignment/test/tutoring services to help you complete your assignment or test?

Main Reason

17. How did you learn about the assignment/test/tutoring service(s)?

- ☐ I saw it on the internet
- ☐ A college peer told me about it
- ☐ A friend told me where to go
- ☐ An agent helped me find a service
- ☐ The service contacted me
- ☐ Other (please specify)

18. What did you give the assignment/test/tutoring service(s) in exchange for the information/help you received? Check all that apply.

- ☐ Money
- ☐ Nothing, it was free
- ☐ Course materials (e.g., assignment details, exam questions)
- ☐ Referred a friend
- ☐ Personal information (e.g., login information, password)
- ☐ Other (please specify)

19. How did you use the information/help provided by the assignment/test/tutoring services ?

- ☐ I used it to submit as my own
- ☐ I used it for reference only
- ☐ I edited it before submission
- ☐ Other (please specify)

20. If your action(s) was discovered what was the most severe penalty you received?

21. Please take a moment to briefly describe your experience with online tutoring or assignment/exam completion services. Did the service provide you the help that you were looking for? Did the service provide you that help within the timeframe you were working with? How were you treated by this service?

22. For the behaviours listed below please indicate **how serious** you think the behaviour is.

	Not cheating	Trivial cheating	Moderate cheating	Serious cheating
In a course requiring computer work, using code from an internet service, rather than writing your own	☐	☐	☐	☐
Using digital technology (e.g., another computer, mobile phone, smart watches, earpieces, etc.) to get help from an exam service found on the internet during a test or examination	☐	☐	☐	☐
Submitting a paper obtained in large part from a paper "mill" or website	☐	☐	☐	☐
Submitting a paper obtained from the agency that helped you apply to Bow Valley College.	☐	☐	☐	☐
Using answers obtained from an online tutoring site (e.g. Chegg, Course Hero) <u>during a test</u> .	☐	☐	☐	☐

23. How serious is using answers obtained from an online tutoring site (e.g., Chegg, Course Hero) for an assignment?

- ☐ Not cheating
- ☐ Trivial cheating
- ☐ Moderate cheating
- ☐ Serious cheating

24. How serious is providing your course work (e.g., assignments, exams, assessment instructions) to a filesharing site (e.g. Course Hero)?

- ☐ Not cheating
- ☐ Trivial cheating
- ☐ Moderate cheating
- ☐ Serious cheating

25. How serious is arranging for someone you do not know to take a test for you (e.g., through a professional exam service offered on the internet)?

- ☐ Not cheating
- ☐ Trivial cheating
- ☐ Moderate cheating
- ☐ Serious cheating

26. How serious is using text generating or academic writing software provided by a web service to create parts of or an entire written assignment (e.g., Essay Toolbox, Spinbot)?

- ☐ Not cheating
- ☐ Trivial cheating
- ☐ Moderate cheating
- ☐ Serious cheating

27. What is the main reason why you do not use assignment/test/tutoring services to help you complete your assignment or test?

Main reason

Academic Integrity Survey

Sharing Behaviours

Please remember that your responses are completely anonymous. There is no way that anyone can connect you with any of your answers.

28. During your time at Bow Valley College have you ever shared assignments or test information with someone you know (e.g., family, friend, partner or girlfriend/boyfriend, another student). Sharing can include either providing information or receiving information that was used to create an assignment or complete an exam.

- ☐ Yes
- ☐ No

29. How **often** (if ever) during your time at the college you have engaged in the behaviours below and how **serious** do you think the behaviour is? If the statement does not apply to any of the courses you have taken at the college, please select the 'Not Relevant' option.

	How often	How serious
Working on an assignment with other students (in the same class or in a different class) when the instructor asked for individual work		
Getting questions and/or answers from someone you know who has already taken the test		
In a course requiring computer work, copying code written by other students rather than writing your own		
Copying from another student during a test with their knowledge		
Using digital technology (e.g., another computer, mobile phone, smart watches, earpieces, etc.) to get help from <u>another student</u> during a test or examination		

30. For the next set of behaviours how **often** (if ever) during your time at the college you have engaged in the behaviours below and how **serious** do you think the behaviour is? If the statement does not apply to any of the courses you have taken at the college, please select the 'Not Relevant' option.

	How often	How serious
Using digital technology (e.g., another computer, mobile phone, smart watches, earpieces, etc.) to get help from <u>someone you know</u> (family, friend, partner or girlfriend/boyfriend) during a test or examination		
Submitting a paper copied from another student		
Submitting work done by someone else (friend, another student, family, partner/girlfriend, boyfriend)		
Sharing an assignment with another student, so they have an example to work from		
Writing or providing a paper for another student		

31. For the final set of behaviours how **often** (if ever) during your time at the college you have engaged in the behaviours below and how **serious** do you think the behaviour is? If the statement does not apply to any of the courses you have taken at the college, please select the 'Not Relevant' option.

How often	How serious
Providing a previously graded assignment to someone to submit as their own work	
Taking an exam for someone you know (friend, another student, family)	
Arranging for someone you know (friend, another student, family) to take an exam for you	
Sharing information (e.g., pictures or files containing sources/answers) on social media such as Group Chats or Facebook Class Pages.	

32. What is the main reason why you shared assignments or test information with someone you know (e.g., family, friend, partner or girlfriend/boyfriend, another student).

Main Reason

33. How did you know who to approach to get help with the assignments or tests?

- ☐ A college peer told me who to go to
- ☐ A friend told me who to go to
- ☐ An agent helped me find someone
- ☐ They approached me
- ☐ Other (please specify)

34. What did you/they provide in exchange for the assignment/exam information/help you/they received?

- ☐ Money
- ☐ Nothing, it was free
- ☐ Course materials (e.g., assignment details, exam questions, assessments)
- ☐ Personal information (e.g., login information, password)
- ☐ Other (please specify)

35. How did you use the information/help provided/received from the person you shared with?

- ☐ I used it to submit as my own
- ☐ I used it for reference only
- ☐ I edited it before submission
- ☐ Other (please specify)

36. If your action(s) was discovered what was the most severe penalty you received?

37. Take a moment to briefly describe your overall experience with sharing assignments or test information with someone you know (e.g., family, friend, partner or girlfriend/boyfriend, another student). What led you to provide or receive information? How did the sharing feel to you? How were you treated by those involved? Would you engage in sharing again?

38. For the behaviours listed below please indicate **how serious** you think the behaviour is.

	Not cheating	Trivial cheating	Moderate cheating	Serious cheating
Working on an assignment with other students (in the same class or in a different class) when the instructor asked for individual work	☐	☐	☐	☐
Getting questions and/or answers from someone you know who has already taken the test	☐	☐	☐	☐
In a course requiring computer work, copying code written by other students rather than writing your own	☐	☐	☐	☐
Copying from another student during a test with their knowledge	☐	☐	☐	☐
Using digital technology (e.g., another computer, mobile phone, smart watches, earpieces, etc.) to get help from <u>another student</u> during a test or examination	☐	☐	☐	☐

39. How serious is using digital technology (e.g., another computer, mobile phone, smart watches, earpieces, etc.) to get help from someone you know (family, friend, partner or girlfriend/boyfriend) during a test or examination?

- ☐ Not cheating
- ☐ Trivial cheating
- ☐ Moderate cheating
- ☐ Serious cheating

40. How serious is submitting a paper copied from another student?

- ☐ Not cheating
- ☐ Trivial cheating
- ☐ Moderate cheating
- ☐ Serious cheating

41. How serious is submitting work done by someone else (friend, family, partner/girlfriend, boyfriend)?

- ☐ Not cheating
- ☐ Trivial cheating
- ☐ Moderate cheating
- ☐ Serious cheating

42. How serious is sharing an assignment with another student, so they have an example to work from?

- ☐ Not cheating
- ☐ Trivial cheating
- ☐ Moderate cheating
- ☐ Serious cheating

43. How serious is writing or providing a paper for another student?

- ☐ Not cheating
- ☐ Trivial cheating
- ☐ Moderate cheating
- ☐ Serious cheating

44. For the behaviours listed below please indicate **how serious** you think the behaviour is.

	Not cheating	Trivial cheating	Moderate cheating	Serious cheating
Providing a previously graded assignment to someone to submit as their own work	☐	☐	☐	☐
Taking an exam for someone you know (friend, another student, family)	☐	☐	☐	☐
Arranging for someone you know (friend, another student, family) to take an exam for you	☐	☐	☐	☐
Sharing information (e.g., pictures or files containing sources/answers) on social media such as Group Chats or Facebook Class Pages.	☐	☐	☐	☐

45. What is the main reason why you do not share assignments/tests with someone you know?

Main reason

Academic Integrity Survey

Individual Behaviours

Please remember that your responses are completely anonymous. There is no way that anyone can connect you with any of your answers.

46. During your time at Bow Valley College have you ever engaged in behaviours such as plagiarism (e.g., copying information from internet or other source without citing), fabricating or falsifying information, using notes when not permitted or using a false excuse to get an extension?

☐ Yes

☐ No

47. How **often** (if ever) during your time at the college you have engaged in the behaviours below **and** how **serious** do you think the behaviour is? If the statement does not apply to any of the courses you have taken at the college, please select the 'Not Relevant' option.

How often

How serious

Fabricating or falsifying a bibliography or reference list

In a course requiring computer work, copying code found online, without citing it, rather than writing your own

Evading camera surveillance during an online exam

Fabricating or falsifying research data

Copying from another student during a test without their knowledge

Using prohibited notes or cheat sheets during a test

48. For the next set of behaviours how **often** (if ever) during your time at the college you have engaged in the behaviours below and how **serious** do you think the behaviour is? If the statement does not apply to any of the courses you have taken at the college, please select the 'Not Relevant' option.

How often	How serious
Copying a few sentences of material from an internet source without citing it <u>for a test</u>	
Copying a few sentences of material from an internet source without citing it <u>for an assignment</u>	
Copying a few sentences of material from a written source without citing it <u>for a test</u>	
Copying materials almost word for word from a written source and submitting it in as your own <u>for a test</u>	
Copying materials almost word for word from a written source and submitting it in as your own <u>for an assignment</u>	
Using a false excuse to obtain an extension on a due date	

49. For the final set of behaviours how **often** (if ever) during your time at the college you have engaged in the behaviours below and how **serious** do you think the behaviour is? If the statement does not apply to any of the courses you have taken at the college, please select the 'Not Relevant' option.

How often	How serious
Hiding library or course materials	
Damaging library or course materials	
Altering a grade or test to try to get additional credit	
Editing an original source to evade plagiarism detection software such as Turnitin.	
Recording or taking pictures of course materials (e.g., slides) or tests without permission to do so.	

50. What is the main reason why you engaged in plagiarism (e.g., copying information from internet or other source without citing), fabricating or falsifying information, using notes when not permitted or using a false excuse to get an extension?

Main Reason

51. If your action(s) was discovered what was the most severe penalty you received?

52. For the behaviours listed below please indicate **how serious** you think the behaviour is.

			Moderate	Serious
	Not cheating	Trivial cheating	cheating	cheating
Fabricating or falsifying a bibliography or reference list	☐	☐	☐	☐
In a course requiring computer work, copying code found online, without citing it, rather than writing your own	☐	☐	☐	☐
Evading camera surveillance during an online exam	☐	☐	☐	☐
Fabricating or falsifying research data	☐	☐	☐	☐
Copying from another student during a test without their knowledge	☐	☐	☐	☐
Using prohibited notes or cheat sheets during a test	☐	☐	☐	☐
Copying a few sentences of material from an internet source without citing it <u>for a test</u>	☐	☐	☐	☐
Copying a few sentences of material from an internet source without citing it <u>for an assignment</u>	☐	☐	☐	☐
Copying a few sentences of material from a written source without citing it <u>for a test</u>	☐	☐	☐	☐

53. For the next set of behaviours listed below please indicate **how serious** you think the behaviour is.

			Moderate	Serious
	Not cheating	Trivial cheating	cheating	cheating
Copying materials almost word for word from a written source and submitting it as your own <u>for a test</u>	☐	☐	☐	☐
Copying materials almost word for word from a written source and submitting it as your own <u>for an assignment</u>	☐	☐	☐	☐
Using a false excuse to obtain an extension on a due date	☐	☐	☐	☐
Hiding library or course materials	☐	☐	☐	☐
Damaging library or course materials	☐	☐	☐	☐
Altering a grade or test to try to get additional credit	☐	☐	☐	☐
Editing an original source to evade plagiarism detection software such as Turnitin	☐	☐	☐	☐
Recording or taking pictures of course materials (e.g., slides) or tests without permission to do so	☐	☐	☐	☐

54. What is the main reason why you do not engage in plagiarism (e.g., copying information from internet or other source without citing), fabricating or falsifying information, using notes when not permitted or using a false excuse to get an extension?

Main reason

Academic Integrity Survey

Stressors, Coping, and Support

We appreciate your time!

The final sections of the survey ask you about the stressors you may be experiencing, how you cope, the support you receive, and some demographic information.

Your responses to these questions are very important and will only take another few minutes to complete.

Remember to enter the prize draw at the end!

55. Which of the following things have happened to you in the past 12 months? Please check all that apply.

- | | |
|---|--|
| ☐ Serious accident or injury | ☐ Change of job |
| ☐ Serious illness | ☐ Threat of layoff |
| ☐ Change in the use of alcohol or drugs | ☐ Unable to find work |
| ☐ Discrimination (by race, ethnicity, gender, age, ableness, sexual orientation) | ☐ Economic recession |
| ☐ Caring for an aging parent almost every day | ☐ Demoted or pay cut |
| ☐ Trouble with the law | ☐ Work conflicting with college |
| ☐ Pregnancy, abortion, or miscarriage | ☐ Close friend died |
| ☐ Criminal victimization | ☐ A child died |
| ☐ Separation or divorce | ☐ Partner or spouse died |
| ☐ COVID-19 Pandemic | ☐ A child's behaviour is a source of concern |
| ☐ Moved | ☐ Child(ren) struggling with school |
| ☐ Close relationship ended | ☐ Involuntary separation from partner or spouse |
| ☐ Increased academic workload | ☐ Involuntary separation from friends |
| ☐ Missed too many classes and have fallen behind in homework/assignments | ☐ Involuntary separation from parents |
| ☐ Roommate conflict | ☐ Involuntary separation from children |
| ☐ Failed a course | ☐ Serious disagreements with parents |
| ☐ Repeated a course | ☐ Partner or spouse has a change in the use of alcohol or drugs |
| ☐ Experienced an incident of academic misconduct | ☐ Family member or friend has a long-term illness |
| ☐ Appealed a mark or grade | ☐ Partner or spouse has a long-term illness |
| ☐ Threat of losing financial aid to pay for college | ☐ Parent died |
| ☐ Fear of not graduating | ☐ Close friend seriously ill |

- | | |
|---|---|
| ☐ Trouble accessing a computer or other technology necessary for completing your assignments/exams | ☐ Close family member died |
| ☐ Exam stress due to eproctoring surveillance | ☐ Demands from parents or in-laws |
| ☐ College conflicting with family life | ☐ A child moved out/back into house |
| ☐ College conflicting with job | ☐ Friends or family moved away |
| ☐ Trouble working with or getting along with college peers | ☐ Child seriously ill |
| ☐ Trouble working with or getting along with instructors | ☐ Partner or spouse seriously ill |
| ☐ Worried about your overall performance in college | ☐ Parent seriously ill |
| ☐ Not achieving the grades you wanted to | ☐ Friends are a negative influence |
| ☐ Worried about losing job | ☐ Family life conflicting with college |
| ☐ Fired or laid off | |
| ☐ Major financial crisis | |
| ☐ Other (please specify) | |
| <div></div> | |
| ☐ None of the above | |

56. Thinking about the stressors in your life, how often do you use the following strategies to cope?

	I usually don't do this at all	I usually do this a little bit	I usually do this some	I usually do this a lot
Do things to try to take your mind off the situation	☐	☐	☐	☐
Try and think about the situation in a different way so it won't upset you so much	☐	☐	☐	☐
Rely on your religious or spiritual beliefs to help you cope	☐	☐	☐	☐
Try to think about possible ways to improve the situation	☐	☐	☐	☐
Talk to others about the situation	☐	☐	☐	☐

57. Thinking about your **family/friends**, read the statements below and indicate how true or not true they are.

	Not true	Partly true	Certainly true
I can rely on my family/friends to care for me, to listen, and to talk to me about my private feelings and problems if needed.	☐	☐	☐
I can depend on my family/friends to give me advice or information when I have a problem.	☐	☐	☐
My family/friends can be relied on to offer or give me things to use that I need or help me with practical tasks.	☐	☐	☐

58. Thinking about your **college peers**, read the statements below and indicate how true or not true they are.

	Not true	Partly true	Certainly true
I can rely on my college peers to care for me, to listen, and to talk to me about my private feelings and problems if needed.	☐	☐	☐
I can depend on my college peers to give me advice or information when I have a problem.	☐	☐	☐
My college peers can be relied on to offer or give me things to use that I need or help me with practical tasks.	☐	☐	☐

Academic Integrity Survey

Demographic Information

59. Please select your age from the dropdown list.

60. What is your gender?

- ☐ Female
- ☐ Male
- ☐ Transgender
- ☐ Non-binary/non-conforming
- ☐ Prefer not to say
- ☐ Prefer to self-describe (please specify)

61. What is your marital status?

☐ Married/living with partner

☐ Divorced

☐ Separated

☐ Widowed

☐ Never married

62. Number of children you care for living in your home.

63. What language do you usually speak at home?

64. Do you identify as a racialized minority?

☐ Yes

☐ No

65. Are you an international student?

☐ Yes

☐ No

66. What is your current GPA?

☐ 0 – 0.49

☐ 0.5 – 1.49

☐ 1.50 – 2.49

☐ 2.50 – 3.49

☐ 3.50 - 4.00

67. Select the school of your current program of study at Bow Valley College

- ☐ School of Community Studies (Social Work, Justice, Addiction, Disability, Early Childhood Education, Child and Youth, Education Assistant, Health and Human Services Management)
- ☐ Chiu School of Business (Legal Assistant, Business Administration, Human Resources, Veterinary Office, Medical Office, Hospital Unit Clerk)
- ☐ School of Health and Wellness (PN, Pharmacy Technician, Health Care Aide, Recreation Therapy)
- ☐ School of Technology (Information Technology, Software Development, Interior Decorating, Digital Design, Cyber Security, Kitchen and Bath Design)
- ☐ Open Studies

68. How many terms have you completed in your program of study?

69. Are you studying full time or part time?

- ☐ Full-time (3 or more courses in a term)
- ☐ Part-time (1 or 2 courses in a term)

70. If you are working at a job or business for pay (wages, salary, self-employed), how many hours per week do you work?

- ☐ 0 – I am not working at this time
- ☐ 1 – 10 hours per week
- ☐ 11-20 hours per week
- ☐ 21-30 hours per week
- ☐ More than 30 hours per week

71. What is your yearly income? (If you share income with a partner or family member, please report your combined income)

- ☐ Under \$15,000
- ☐ Between \$15,000 and \$29,999
- ☐ Between \$30,000 and \$49,999
- ☐ Between \$50,000 and \$74,999
- ☐ Between \$75,000 and \$99,999
- ☐ Between \$100,000 and \$150,000
- ☐ Over \$150,000

You have reached the end of the survey! Thank you for participating.

Please click 'Done' to submit your responses and to enter the prize draw for 1 of 4, \$50.00 gift cards to Amazon or Tim Hortons.

Note: *The dropdown menus for Q14, Q29, Q30, Q47, Q48, Q49 are as follows:*

Left hand side (frequency)

1. *Never*
2. *1-2 times*
3. *3-5 times*
4. *6-9 times*
5. *10 or more times*
6. *Not relevant*

Right hand side (seriousness)

1. *Not cheating*
2. *Trivial cheating*
3. *Moderate cheating*
4. *Serious cheating*

Appendix B: Research Ethics Board Approval



403-410-1400 Main line
info@bowvalleycollege.ca
345 6 Avenue SE
Calgary, AB T2G 4V1

RESEARCH ETHICS BOARD

Bow Valley College
345 – 6th Avenue SE
Calgary, AB T2G 4V1

June 10, 2021

Re: Understanding Student Experiences with Contract Cheating and other Outsourcing Behaviours.

Corrine Ferguson

Instructor, School of Community Studies
Bow Valley College

Margaret Toye

Associate Dean, School of Community Studies
Bow Valley College

Dear Corrine and Margaret,

The above-named research proposal has been **granted ethical approval** by the Research Ethics Board (REB). Please note that the terms and conditions that apply to this Certification are as follows:

1. Approval is granted only for the project and purposes described in the application;
2. Any modifications to the authorized protocol must be submitted to the Bow Valley College (BVC) REB Chair for approval, utilizing the appropriate form which can be found on the BVC website: <https://bowvalleycollege.ca/teaching-and-research/research-and-innovation/research-at-bow-valley-college/research-ethics/research-ethics-application-forms>.
3. Approval is only granted for one (1) year. If you intend to engage with participants beyond June 10, 2022, you will need to request an extension to your approval;
4. Written notification must be sent to the REB when the project is complete or terminated, utilizing the appropriate form on the BVC website, as above.
5. An annual status report must be completed, due one year from the date of your final ethics approval, utilizing the appropriate form on the REB website, as above.

Thank you and we wish you every success on your research project.

A handwritten signature in blue ink, appearing to read "Aaron Brown".

Aaron Brown
Chair, Research Ethics Board

June 10, 2021
Date

Appendix C: Project Timeline

Table X. Project Timeline Gantt Chart

	01 - 21	02 - 21	03 - 21	04 - 21	05 - 21	06 - 21	07 - 21	08 - 21	09 - 21	10 - 21	11 - 21	12 - 21	01 - 22	02 - 22	03 - 22	04 - 22	05 - 22
Launch																	
Proposal																	
Lit review																	
GRF app																	
GRF mod #1																	
Project brief																	
Survey dev																	
REB app																	
Survey pretest																	
Survey rev 1																	
Survey pretest 2																	
Survey rev 2																	
REB #1																	
REB #2																	
Recruitment																	
Data collection																	
Data cleaning																	
Data analysis																	
ICAI pres.																	
Report																	
ACAI pres.																	

Appendix D: Academic Integrity Violations

	Commercial Contract Cheating	Sharing	Individual	Test	Assign- ment	Other
1. Fabricating or falsifying a bibliography or reference list			•			•
2. Working on an assignment with other <u>students</u> (in the same class or in a different class) when the instructor asked for individual work		•			•	
3. Getting questions and/or answers from someone you know who has already taken the test		•		•		
4. In a course requiring computer work, copying code written by other <u>students</u> rather than writing your own		•				•
5. In a course requiring computer work, copying code <u>found online</u> , without citing it, rather than writing your own			•			•
6. In a course requiring computer work, using code from an <u>internet service</u> , rather than writing your own	•					•
7. Evading camera surveillance during an online exam			•	•		
8. Fabricating or falsifying research data			•		•	
9. Copying from another student during a test with their knowledge		•		•		
10. Copying from another student during a test without their knowledge			•	•		
11. Using digital technology (e.g., another computer, mobile phone, smart watches, earpieces, etc.) to get help from another <u>student</u> during a test or examination		•		•		
12. Using digital technology (e.g., another computer, mobile phone, smart watches, earpieces, etc.) to get help from <u>someone you know</u> (family, friend, partner or girlfriend/boyfriend) during a test or examination		•		•		
13. Using digital technology (e.g., another computer, mobile phone, smart watches, earpieces, etc.) to get help from an <u>exam service</u> found on the internet during a test or examination	•			•		
14. Using prohibited notes or cheat sheets during a test			•	•		
15. Copying a few sentences of material from an internet source without citing it for a test			•	•		
16. Copying a few sentences of material from an internet source without citing it for an assignment			•		•	
17. Submitting a paper copied from another student		•			•	
18. Copying a few sentences of material from a written source without citing it for a test			•	•		
19. Submitting work done by someone else (friend, another student, family, partner/girlfriend, boyfriend)		•				•
20. Submitting a paper obtained in large part from a term paper “mill” or website	•				•	
21. Copying materials almost word for word from a written source and turning it in as your own for a test			•	•		
22. Copying materials almost word for word from a written source and turning it in as your own for an assignment			•		•	

	Commercial Contract Cheating	Sharing	Individual	Test	Assign- ment	Other
23. Sharing an assignment with another student, so they have an example to work from		•			•	
24. Using a false excuse to obtain extension on a due date			•			•
25. Writing or providing a paper for another student		•			•	
26. Providing a previously graded assignment to someone to submit as their own work		•			•	
27. Hiding library or course materials			•			•
28. Damaging library or course materials			•			•
29. Altering a grade or test to try to get additional credit			•			•
30. Submitting a paper obtained from the agency that helped you apply to Bow Valley College.	•				•	
31. Using answers obtained from an online tutoring site (e.g., Chegg, Course Hero) during a test.	•			•		
32. Using answers obtained from an online tutoring site (e.g., Chegg, Course Hero) for an assignment	•				•	
33. Providing your course work (e.g., assignments, exams, assessment instructions) to a file-sharing site (e.g., Course Hero)	•					•
34. Taking an exam for someone you know (friend, another student, family)		•		•		
35. Arranging for someone you know (friend, another student, family) to take an exam for you		•		•		
36. Arranging for someone you do not know to take a test for you (e.g., through a professional exam service offered on the internet)	•			•		
37. Using text generating or academic writing software provided by a web service to create parts of or an entire written assignment (e.g., Essay Toolbox, Spinbot).	•				•	
38. Editing an original source to evade plagiarism detection software such as Turnitin.			•		•	
39. Recording or taking pictures of course materials (e.g., slides) or tests without permission to do so.			•			•
40. Sharing information (e.g., pictures or files containing sources/answers) on social media such as Group Chats or Facebook Class Pages.		•				•

Appendix E: Stressor Inventory

	Reference			Duration		Role Domains			Interaction		Intensity
	Total	Personal	Network	Life Events	Chronic Strains	School	Work	Family	Role Conflict	Role Strain	Life Trauma Adversities
1. Serious accident or injury	•	•		•							
2. Serious illness	•	•		•							
3. Change in the use of alcohol or drugs	•	•		•							•
4. Discrimination (by race, ethnicity, gender, age, ableness, sexual orientation)	•	•		•							•
5. Caring for an aging parent almost every day	•	•			•						
6. Trouble with the law	•	•		•							•
7. Pregnancy, abortion, or miscarriage	•	•		•							
8. Criminal victimization	•	•		•							•
9. Separation or divorce	•	•		•							•
10. COVID-19 Pandemic	•	•		•							
11. Moved	•	•		•							
12. Close relationship ended	•	•		•							
13. Increased academic workload	•	•		•		•					
14. Missed too many classes and have fallen behind in homework/assignments	•	•		•		•					
15. Roommate conflict	•	•		•		•					
16. Failed a course	•	•		•		•					
17. Repeated a course	•	•		•		•					
18. Experienced an incident of academic misconduct	•	•		•		•					
19. Appealed a mark or grade	•	•		•		•					
20. Threat of losing financial aid to pay for college	•	•		•		•					
21. Fear of not graduating	•	•		•		•					
22. Trouble accessing a computer or other technology necessary for completing your assignments/exams	•	•		•		•					
23. Exam stress due to e-proctoring surveillance	•	•		•		•					
24. College conflicting with family life	•	•						•	•		
25. College conflicting with job	•	•					•		•		
26. Trouble working with or getting along with college peers	•	•			•	•				•	

		Reference		Duration		Role Domains			Interaction		Intensity
	Total	Personal	Network	Life Events	Chronic Strains	School	Work	Family	Role Conflict	Role Strain	Life Trauma Adversities
27. Trouble working with or getting along with instructors	•	•			•	•				•	
28. Worried about your overall performance in college	•	•			•	•				•	
29. Not achieving the grades you wanted to	•	•			•	•				•	
30. Worried about losing job	•	•		•	•		•				
31. Fired or laid off	•	•		•			•				
32. Major financial crisis	•	•		•			•				
33. Change of job	•	•		•			•				
34. Threat of layoff	•	•		•			•				
35. Unable to find work	•	•		•			•				
36. Economic recession	•	•		•			•				
37. Demoted or pay cut	•	•		•			•				
38. Work conflicting with college	•	•				•			•		
39. Close friend died	•		•	•							•
40. A child died	•		•	•				•			•
41. Partner or spouse died	•		•	•				•			•
42. A child's behaviour is a source of concern	•		•		•			•			
43. Child(ren) struggling with school	•		•		•			•			
44. Involuntary separation from partner or spouse	•	•			•			•			
45. Involuntary separation from friends	•	•			•						
46. Involuntary separation from parents	•	•			•			•			
47. Involuntary separation from children	•	•			•			•			
48. Serious disagreements with parents	•	•		•				•			
49. Partner or spouse has a change in the use of alcohol or drugs	•		•	•				•			•
50. Family member or friend has a long-term illness	•		•		•			•			
51. Partner or spouse has a long-term illness	•		•		•			•			
52. Parent died	•		•	•				•			•
53. Close friend seriously ill	•		•		•						
54. Close family member died	•		•	•				•			•
55. Demands from parents or in-laws	•	•		•				•			
56. A child moved out/back into house	•		•	•				•			
57. Friends or family moved away	•		•	•				•			

		Reference		Duration		Role Domains			Interaction		Intensity
	Total	Personal	Network	Life Events	Chronic Strains	School	Work	Family	Role Conflict	Role Strain	Life Trauma Adversities
58. Child seriously ill	•		•	•				•			
59. Partner or spouse seriously ill	•		•	•				•			
60. Parent seriously ill	•		•	•				•			
61. Friends are a negative influence	•		•	•							
62. Family life conflicting with college	•	•				•			•		
63. Other											
64. Mental health concerns	•	•		•							

Appendix F: Commercial Contract Cheating Infographic

Commercial Contract Cheating

Commercial contract cheating includes any type of engagement with an assignment or test tutoring or homework services other than services provided by the educational institution (e.g., assignment/exam completion services, internet paper or essay "mill", online tutoring and homework help websites)

PREVALENCE:

13.9%

(n=104/749) engaged in commercial contract cheating

54.4%

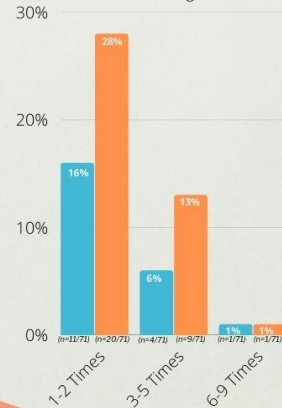
(n=24/44) engaged in one commercial contract cheating behaviour

45.5%

(n=20/44) engaged in two or more commercial contract cheating behaviours

ONLINE TUTORING SITES:

Tests Assignments



ASSIGNMENTS

43%

(n=30/71) of learners utilized answers from online tutoring sites for assignments

TESTS

21%

(n=15/71) of learners utilized answers from online tutoring sites for tests or examinations

Top 2 Reasons Why Learners Engage in Commercial Contract Cheating:

- Reason #1:
- 32.0% (n=21/61) used the site to find more information and examples
- Reason #2:
- 29.0% (n=19/61) used the site to help guide and form ideas

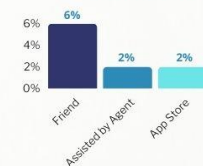
ENGAGEMENT IN SERVICES:

Learned About Service:

INTERNAL SOURCE



EXTERNAL SOURCE



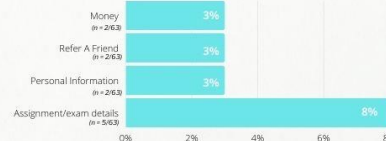
56%

(n=37/66) of learners reported learning about service online

USED INFORMATION TO:



EXCHANGED FOR SERVICES:



60%

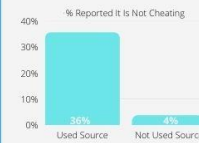
(n=38/63) reported using the services for information to reference their work

63%

(n=43/63) received the information for free

COMPARISON:

Using digital technology to get help from online service during a test:



Responses:

- 36% (n=20/56) who have used source believe it is not cheating
- 4% (n=23/598) who have not used sources believe it is not cheating

Using answers from an online tutoring site for an assignment:

92%

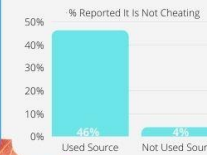
(n=95/103) of those who engaged in commercial contract cheating were informed of academic honesty policies

Responses:

- 52% (n=29/56) who have used source believe it is not cheating
- 7% (n=40/600) who have not used source believe it is not cheating



Using text generating or academic writing software from an online service to create parts or entire written assignments:



Responses:

- 46% (n=24/52) who have used source believe it is not cheating
- 4% (n=24/594) who have not used source believe it is not cheating

Those who engaged in commercial contract cheating believed a more significant proportion of students at the college also engage in this behaviour

54%

LEARNER WELLBEING:

Learner's Confidence With Assignments and Tests:

Learners that engaged in commercial contract cheating were less confident to complete an assignment or tests on their own.

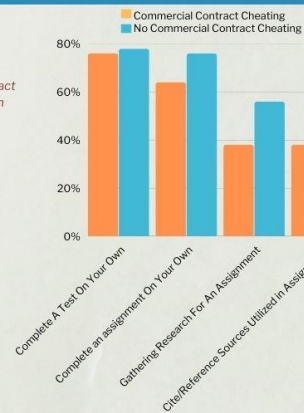
COMMERCIAL CONTRACT CHEATING

62%

(n=63/101) of learners engaging in contract cheating felt very confident about completing tests on their own.

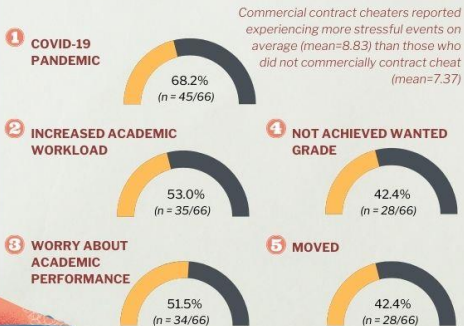
64%

(n=63/101) of learners engaging in contract cheating felt very confident about completing tests on their own.



Top Five Stressors:

Learners who engage in commercial contract cheating and those who do not engage in the behaviours share these five top stressors



References: Olatunji (APA), Plotin, Tordella (2022) Commercial Contract Cheating [Infographic], Calgary: Bow Valley College

Appendix G: Sharing Behaviour Infographic

Sharing Behaviour

Sharing behaviours are providing or receiving answers, questions, or additional information on tests, exams, and assignments by peers, family, friends, partners, and girlfriends or boyfriends.

THE STATS

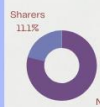
13.8% (n=92/667) of respondents engaged in sharing behaviours



44.6% engaged in 1 sharing behaviour (n=29/65), 55.4% engaged in 2 or more sharing behaviours (n=36/65)

TWO MOST FREQUENT SHARING BEHAVIOURS

1



41.3% (n=33/80) of sharers believed that working on assignments with other students when not permitted was not cheating compared to 11.1% (n=61/552) of non-sharers

44.9% (n=40/89) of students worked on assignments with other students when not permitted

2

54.6% (n=48/88) of students shared an assignment with another student so they had an example to work from

48.1% (n=39/81) of sharers report sharing an assignment with another student so they have an example to work from is not cheating.

25.9% (n=21/81) report it is trivial cheating.



Sharers are more likely to report behaviours as less serious



57.0% (n=45/79) of sharers used the information they received for reference purposes only



Sharers believe there is more 'sharing' going on than non-sharers

Sharers on average believe that 37% of students engage in sharing behaviours at the college (n=91) vs non-sharers who believe that 22% of students at the college engage in sharing (n=555)

COLLEGE POLICIES



95.7% (n=88/92) of those who engaged in sharing knew about the academic honesty policies

Instructors spend class time talking about contract cheating and its consequences



33.7% (n=31/92) of sharers disagree/strongly disagree

VS 19.5% (n=112/174) of non-sharers that disagree/strongly disagree

CONSEQUENCES EXPLAINED

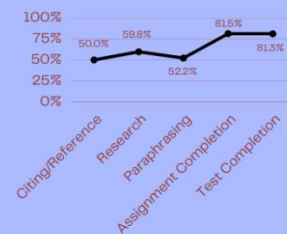
COLLEGE SUPPORT

Opportunities to learn about academic integrity and cheating are widely available at the College

78.3% (n=72/92) of sharers report that they strongly agree or agree compared to 87.3% (n=502/575) of non-sharers that strongly agree or agree



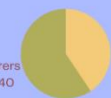
STUDENT CONFIDENCE



50.0% (n=46/92) of sharers felt very confident citing and referencing sources used in written assignment or paper

81.3% (n=74/94) of sharers felt very confident completing a test on their own.

STUDENT STRESSORS



Average number of stressful events in the last year for sharers (mean = 10.40, n=82) as compared to non-sharers (mean = 7.10, n=537)

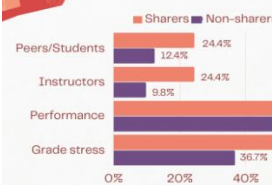
Main Stressors for Sharers

- COVID-19 pandemic 79.3% (n=65/82)
- Increased academic workload (59.8%, n = 49/82)
- Worried about overall performance in college (58.5%, n = 48/82)
- Not achieving grades you wanted to (50.0%, n = 41/82)
- Fear of not graduating (41.5%, n = 34/82)



SCHOOL-RELATED STRAINS

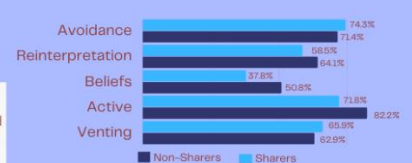
Sharers Experience More School-Related Strains



- Difficulty getting along with peers/students: Sharers 24.4% (n=20/82) vs Non-sharers 12.4% (n=67/539)
- Difficulty getting along with instructors: Sharers 24.4% (n=20/82) vs Non-sharers 9.8% (n=53/539)
- Personal performance in college: Sharers 58.5% (n=48/82) vs Non-sharers 48.4% (n=261/539)
- Not receiving Grades they wanted: Sharers 50% (n=41/82) vs Non-sharers 36.7% (n=198/539)

COPING STRATEGIES

Sharers use positive reinterpretation, beliefs, and active coping **less** than non-sharers



Information included in this infographic was drawn from:

Ferguson, C. D., Toye, M. A., Carver, C., Picot, T., Eaton, S. E., & Boisvert, S. (2022). Understanding Student Experiences of Contract Cheating and Other Outsourcing Behaviours - Research Report. Calgary: Bow Valley College.

Citation (APA) Carver, Christina (2022). Sharing behaviour [Infographic]. Calgary: Bow Valley College.