

Addressing the Issue of Academic Misconduct in Computer Science 110 (CPSC 110)

for

CPSC 110 Teaching Team

Led by Professor Gregor Kiczales

University of British Columbia (UBC)

Vancouver, British Columbia

by

Terry Chou

University of British Columbia

English 301 Student

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INTRODUCTION

A. Background

CPSC 110 is a foundational computer science course at the University of British Columbia (UBC), which is designed to teach students fundamental programming and problem-solving concepts. The course serves as a prerequisite for all upper-level computer science courses and is essential for students pursuing a major in computer science. In the course, students learn the basics of programming languages, algorithms, data structures, and computational thinking. The course is taught through a combination of lectures and labs, which provides students with hands-on programming experience and helps them develop critical thinking skills.

Academic misconduct is a critical concern that undermines the integrity of the academic community and can result in adverse consequences for both individual students and the institution's reputation. In particular, academic misconduct in CPSC 110, a fundamental computer science course at UBC, can jeopardize the academic integrity of the course and impede students' learning progress. Therefore, given the significance of academic integrity in academic settings, it is imperative that academic misconduct is dealt with in a fair and consistent manner.

B. Statement of Problem

The problem of academic misconduct in CPSC 110 is a growing concern that has escalated in recent terms. The announcement made by Professor Gregor Kiczales in class this term indicates a disturbing trend, with 39% of students downloading and submitting lecture solution files, which is considered a serious form of academic misconduct by the teaching staff. This trend is concerning because it suggests that a significant number of students may not be developing the necessary skills and knowledge required to succeed in the course, which can have negative consequences for their academic progress and future career prospects.

The most prevalent forms of academic misconduct in the course, including plagiarism, cheating on exams, and collaborating on assignments beyond the allowed limits, are particularly alarming. Such behaviors not only undermine the integrity of the academic community but also adversely affect the learning experience of students who engage in academic honesty. The impact of

academic misconduct can be far-reaching, affecting the reputation of the institution, the quality of education, and the future success of students. Therefore, it is essential to address this problem in a timely and effective manner to preserve the academic integrity of the course and ensure that all students receive a fair and equitable learning experience.

C. Purpose and Intended Audience

This report aims to propose solutions to address the issue of academic misconduct in CPSC 110 at the University of British Columbia (UBC). This report provides an overview of the problem, identifies the main causes of academic misconduct in the course, and presents a set of recommendations to prevent and address academic misconduct effectively. The report is intended to assist the CPSC 110 Teaching Team in developing and implementing policies and procedures to promote academic integrity and ensure a fair and consistent learning experience for all students.

The CPSC 110 Teaching Team includes course instructors led by Gregor Kiczales, the course coordinator, and teaching assistants who work closely with students. This professional teaching team is responsible for various aspects of the course, including invigilating exams and detecting academic misconduct during exams, lecture starters, problem-set evaluations, and labs. The leading professor and coordinator are in charge of making the exam invigilation rules, providing TA training during meetings, and assessing academic misconduct reports from teaching assistants to ensure their validity before reporting to the Faculty.

D. Description of Data Sources

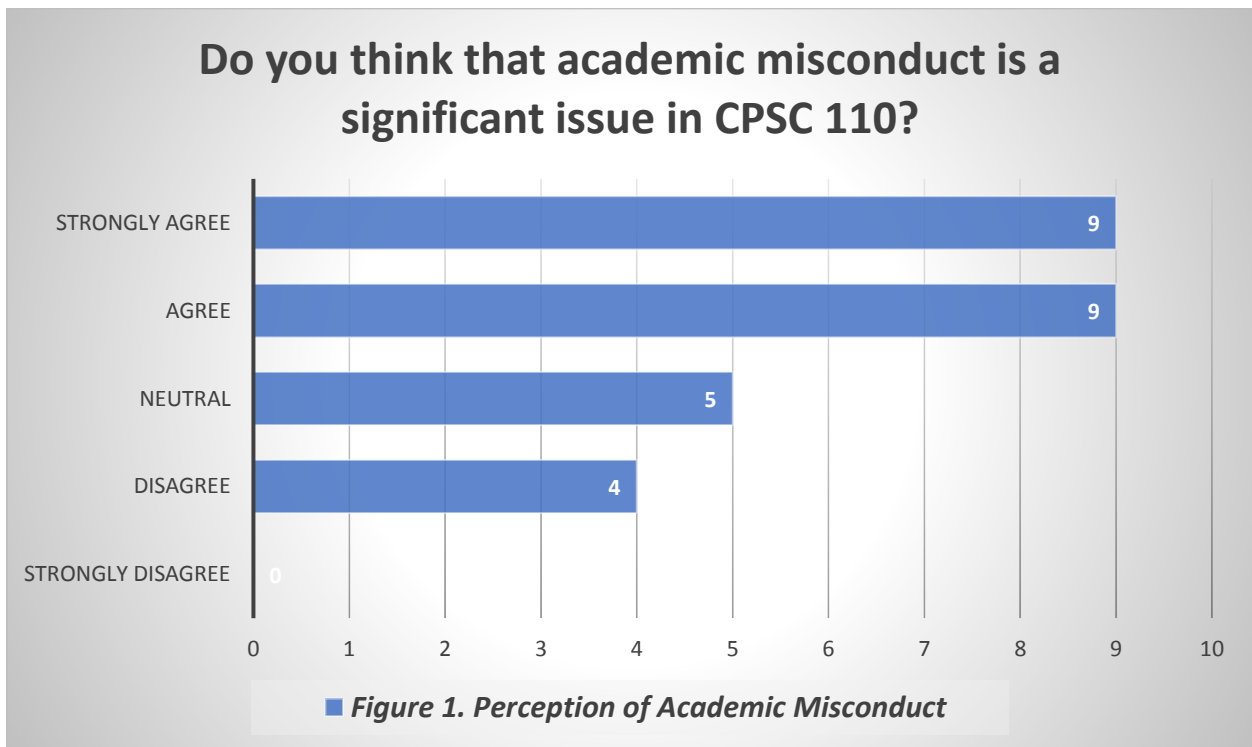
Primary data for this proposal was collected from multiple sources, including surveys conducted with CPSC 110 students, and interviews with members of the CPSC 110 teaching team. The survey was distributed to all students enrolled in the course during the current or previous academic terms and asked questions about their perceptions of academic misconduct and potential solutions. Informal interviews were conducted with members of the CPSC 110 teaching team to gather their perspectives on the issue and to learn about their experiences with addressing academic misconduct in the course. Secondary sources for this report include online research reviews.

DATA SECTION

This data section presents the results of a survey conducted to investigate academic misconduct in CPSC 110 at UBC. The survey was administered to 9 teaching assistants and 17 students who have taken or are currently taking the course.

A. Perception and Observations of Academic Misconduct

In the survey, respondents were asked if academic misconduct is a significant issue in CPSC 110. The results showed that a majority of the respondents (67%) agreed that academic misconduct is a significant issue, while only 15% disagreed (see *Figure 1*). The remaining respondents (19%) were neutral. This indicates that a considerable number of students and teaching assistants perceive academic misconduct to be a problem in CPSC 110.



The respondents were also asked how often they have observed academic misconduct in CPSC 110. The results indicate that academic misconduct is prevalent in the course, with a high percentage of the respondents reporting frequent observations of academic misconduct. Specifically, 34% of the respondents reported either frequent or very frequent observations of

academic misconduct. Moreover, 27% of the respondents reported occasional observations of academic misconduct, while 38% reported rarely or never observing academic misconduct. This suggests that academic misconduct is a common occurrence in CPSC 110.

B. Types of Academic Misconduct and Evaluation of Current Measures

The survey aimed to identify various forms of academic misconduct prevalent in CPSC 110. The results revealed that 38% of the respondents witnessed students copying code from others or the internet for labs or problem sets, making it the most common type of academic misconduct in the course (see *Figure 2*). The second most common form was using unauthorized materials or resources during exams, reported by 24% of the respondents. Another type identified in the survey was students submitting downloaded solutions to lecture starter problems, reported by 19% of the respondents. Seven respondents also reported other forms of academic misconduct, including collaboration to complete assignments and exams instead of working individually, and sharing or discussing code in group chats or social media.

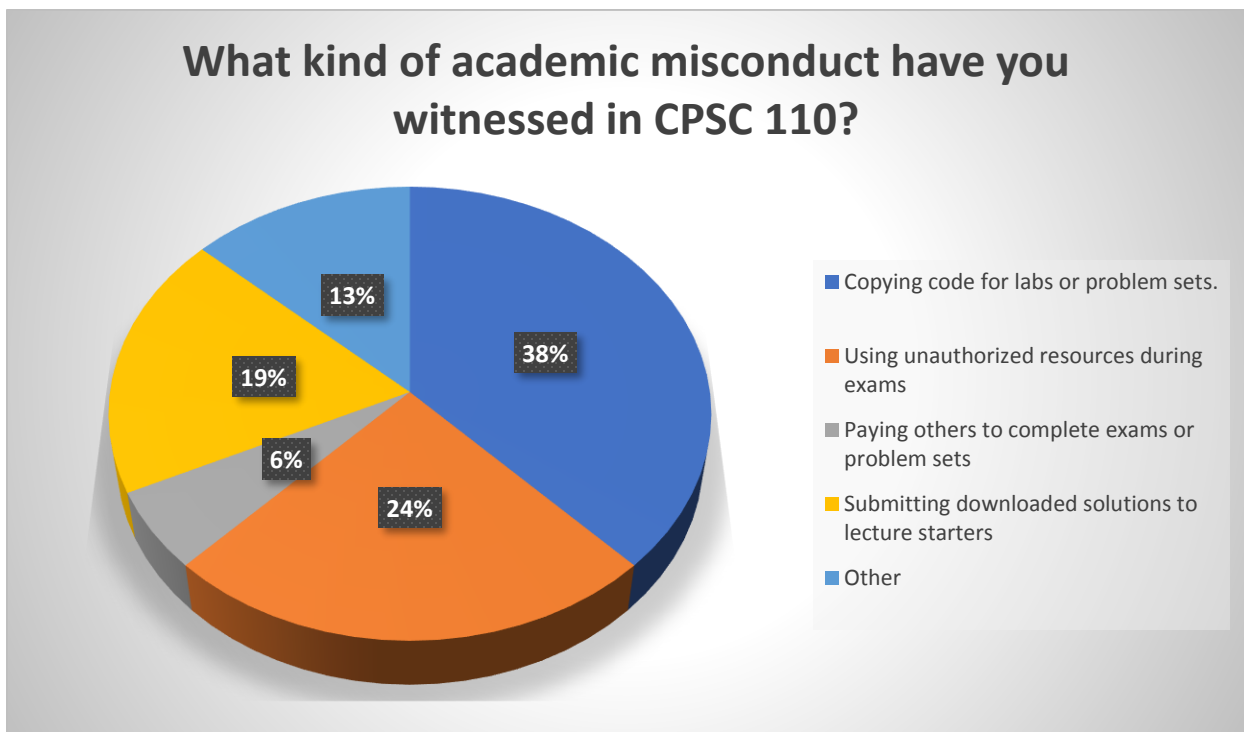


Figure 2. Types of Academic Misconduct

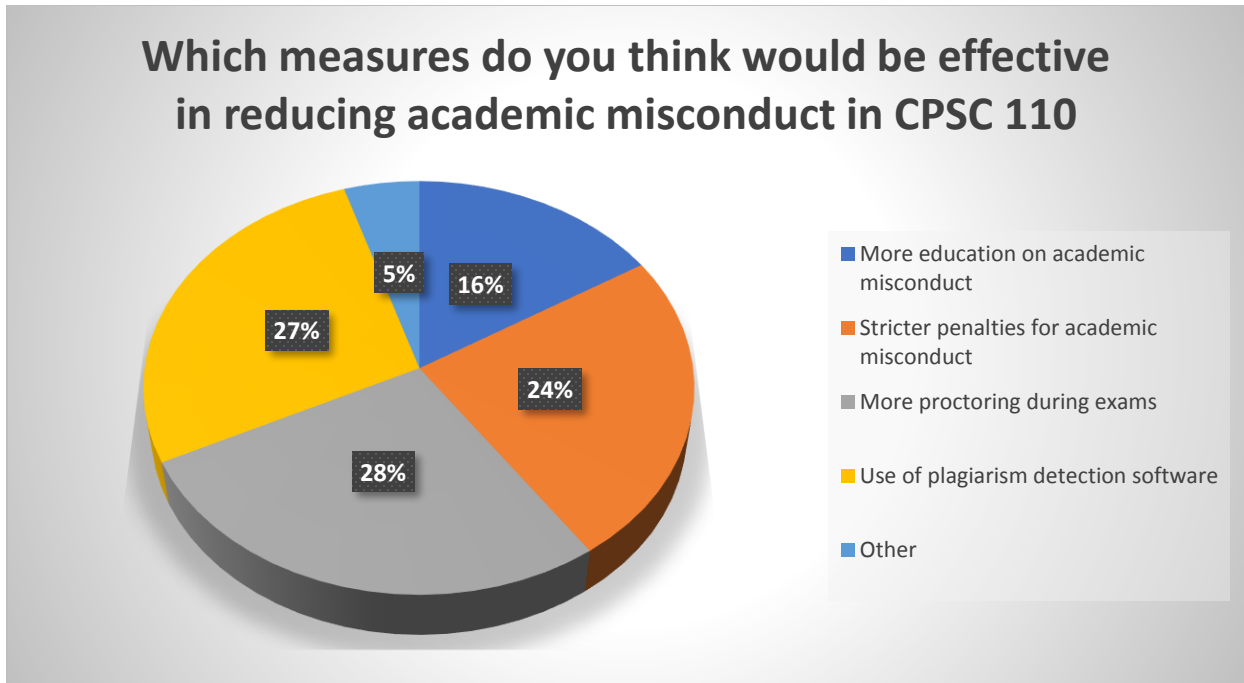
It is noteworthy that paying others to complete exams or problem sets on their behalf was the least prevalent form of academic misconduct, reported by only 6% of the respondents. However, all forms of academic misconduct, no matter how small, are serious violations of academic integrity and can result in severe consequences.

Moreover, the survey aimed to evaluate the effectiveness of the current methods of detecting and addressing academic misconduct in CPSC 110. The results showed that the respondents were divided on the effectiveness of the current measures. While 22% of the respondents found the measures effective, 56% were not sure, and 2% found the measures ineffective. The survey's findings indicate that there is a need to assess and improve the current methods of detecting and addressing academic misconduct to promote academic integrity in CPSC 110.

In addition to the two types of academic misconduct mentioned above, the survey also identified another form of academic misconduct where the students submit downloaded solutions to lecture starter problems, which was reported by 19% of the respondents. Seven respondents reported other forms of academic misconduct, which included students collaborating to complete assignments and exams instead of individually, and sharing or discussing code in group chats, likely collaboration over problem sets through social media.

C. Measures to Reduce Academic Misconduct

The survey aimed to gather respondents' opinions on effective measures to address academic misconduct in CPSC 110. Stricter penalties for academic misconduct, increased proctoring during exams, and the use of plagiarism detection software were identified as the most effective measures by 24%, 27%, and 27% of the respondents, respectively (see *Figure 3*). Furthermore, 17% of the respondents identified increased education about what constitutes academic misconduct as an effective measure. Some respondents suggested other measures, such as investing in plugins and other software architecture to make it more difficult to cheat and easier to catch cheaters, and incentivizing reporting of academic misconduct.



Figures 3. Effective Measures

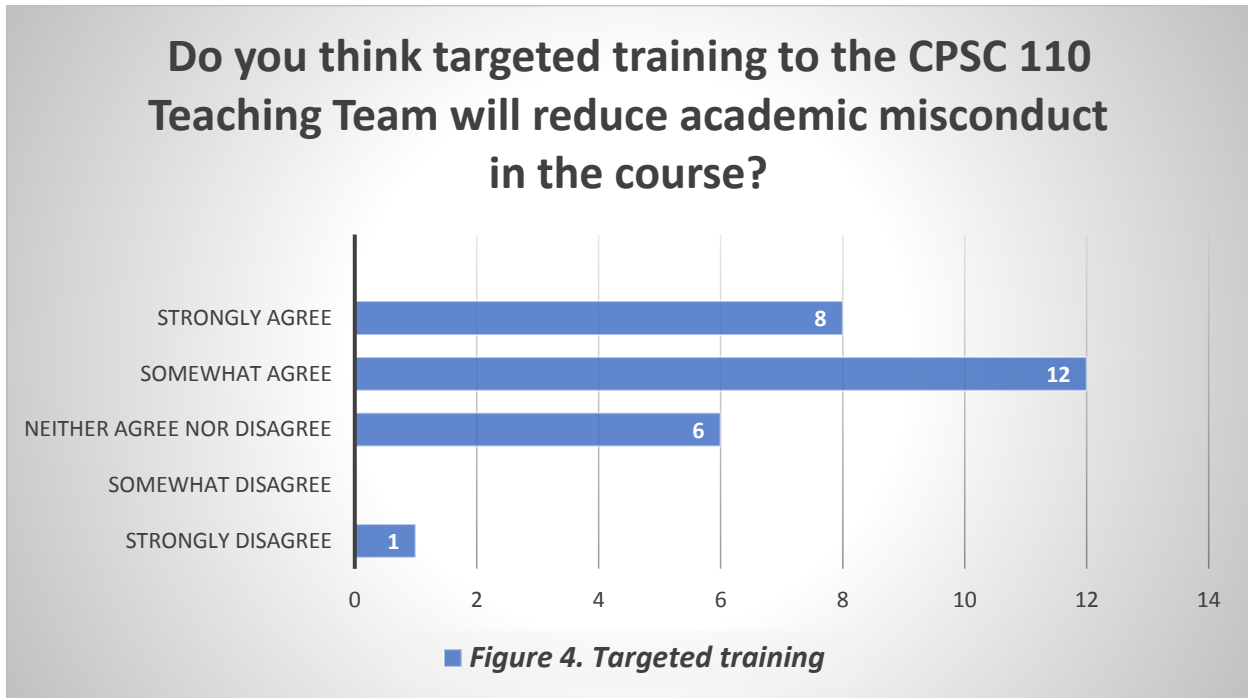
The survey then asked the respondents if they thought examining students' Racket starter files closely during exams was an effective means of preventing academic misconduct. The results showed that 48% of the respondents either strongly agreed or somewhat agreed that this is an effective measure, while 22% strongly disagreed or somewhat disagreed. These findings suggest that incorporating these measures into the course policies and procedures could effectively prevent and reduce academic misconduct in CPSC 110.

D. Training and Resources for Teaching Team

The survey also explored the respondents' attitudes towards investing in targeted training for the CPSC 110 teaching team and providing more resources to TAs to identify and address academic misconduct. The results indicate that a majority of the respondents believe that such measures could reduce the incidence of academic misconduct in the course.

Specifically, when asked if investing in targeted training for the teaching team would reduce the incidence of academic misconduct in the course, a total of 21 respondents (8 strongly agree and 13 somewhat agree) indicated agreement (see *Figure 4*). Only 1 respondent strongly disagreed

with this statement. This suggests that investing in targeted training for the teaching team could be a potentially effective measure to address academic misconduct in CPSC 110.



Similarly, when asked if they would like to see more training and resources provided to TAs to help them identify and address academic misconduct, a total of 23 respondents (7 strongly agree and 16 somewhat agree) indicated agreement. This once again suggests that providing more resources and training to TAs could be an effective measure in addressing academic misconduct in the course.

Overall, these results highlight the potential effectiveness of investing in targeted training and providing more resources to the teaching team in addressing academic misconduct in CPSC 110. It is important for the course instructors and department to take these results into consideration and implement effective measures to prevent and address academic misconduct in the course.

E. Proposed Solutions

Based on the survey data, there are a few proposed solutions that could be implemented to reduce the incidence of academic misconduct in CPSC 110. One solution is to invest in targeted training for the CPSC 110 Teaching Team, including professors and TAs. This could involve

additional training sessions or workshops, including informational videos, to help the teaching team identify and address suspected misconduct. The training could cover topics such as how to recognize various forms of academic misconduct and how to deal with suspected cases. By investing in this training, the CPSC 110 Teaching Team can promote a culture of academic integrity and reduce the incidence of academic misconduct in the course.

In addition to training, some survey respondents suggested making exams harder to cheat on by providing different versions of exams or using plugins and other software architecture that could make cheating more difficult and easier to detect. One respondent suggested incentivizing reporting of academic misconduct, which could help to increase the number of reported cases and reduce incidents of academic misconduct. Another solution suggested by a respondent is to monitor students during exams by monitoring their computer screens or having them take exams on provided computers.

Finally, some respondents suggested that changing the perception of what constitutes academic misconduct could be a solution. For example, one respondent suggested that peers helping peers with labs and problem sets should not be considered academic misconduct at all, as teaching and talking about course concepts together is proven to improve understanding. Instead of considering it as misconduct, it could be recognized as a helpful learning tool. While this may not be a complete solution, it could potentially reduce the incidence of academic misconduct by encouraging students to collaborate in a more constructive way.

F. Literature Review

Academic misconduct is a complex issue that has been widely studied in the academic community. One approach that has been proposed in the literature is the use of technology to prevent and detect academic misconduct. For example, software tools such as plagiarism detection software and online proctoring systems have been developed to identify and prevent academic misconduct (Watson & Sottile 2010). These technologies have been found to be effective in reducing the incidence of academic misconduct in certain contexts (Stuber-McEwen, Wisely, & Hoggatt 2009).

However, the literature has also highlighted the limitations of relying solely on technology to prevent and detect academic misconduct. While technology can be useful in identifying instances of plagiarism and cheating, it may not be effective in detecting more sophisticated forms of academic misconduct (Martin, 2005). In addition, there are concerns about the invasiveness and potential bias of certain technological solutions, such as online proctoring.

Other studies have focused on the role of education and training in promoting academic integrity and preventing academic misconduct. Effective training programs for educators and students have been found to be effective in reducing the incidence of academic misconduct. In particular, research suggests that interventions that focus on promoting a culture of academic integrity, rather than solely on punitive measures, may be more effective in preventing academic misconduct (Bretag et al. 2011).

In light of these findings, the proposed solution of providing additional training and resources to the CPSC 110 Teaching Team to identify and address academic misconduct aligns with the literature. By investing in targeted training, the CPSC 110 Teaching Team can promote a culture of academic integrity and reduce the incidence of academic misconduct in the course.

CONCLUSION

Based on the survey data, it is clear that academic misconduct is a concern in CPSC 110, with a significant number of respondents reporting that they have witnessed or suspected instances of cheating. While the current measures to detect and address academic misconduct in the course received mixed reviews, targeted training for the CPSC 110 Teaching Team and more resources for TAs to identify and address academic misconduct were proposed as potential solutions.

Therefore, I recommend that the CPSC 110 Teaching Team invests in additional training sessions or workshops to improve their ability to detect and prevent academic misconduct. This training should cover various forms of academic misconduct, the significance of academic integrity, and how to deal with suspected cases of misconduct. Moreover, the Teaching Team should explore the possibility of providing more support to TAs to help them identify and address academic misconduct.

Formal Report Draft

It is also important to note that some respondents mentioned the need for changes in the course content and assessment methods to reduce opportunities for academic misconduct. Providing more unique problem sets and exams, using plugins and other software to make cheating more difficult and easier to detect, and incentivizing reporting of misconduct were some of the suggestions made by the respondents.

In conclusion, by implementing the recommended solutions, the CPSC 110 Teaching Team can promote a culture of academic integrity and reduce the incidence of academic misconduct in the course.

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