INTELLECTUAL PROPERTY

Ethical Perceptions of Students Today

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MOTIVATION

* Nowadays concerns regarding intellectual property extend beyond traditional plagiarism:

    * Software piracy

    * Video piracy

    * Code plagiarism

* Establishing student views on such matters is key to integrating ethical content into our curriculum

* Students need to develop the ability to integrate ethical decisions into their future professional life

SURVEY

* In 2006, Greening, Kay and Kummerfeld presented an innovative survey instrument as a means for introducing ethical content to the curriculum

    * The survey questions explored issues related to plagiarism

* To test UBC student attitudes, this survey was reproduced and delivered to two CPSC classes in the fall of 2009; a total of 95 responses were received

SURVEY

✳ Questions were divided into varying categories

✳ 4 scenarios were given to all groups (Q1,3,5,7)

✳ Each scenario had a follow up question (Q2,4,6,8)

   ✳ These varied in their overall tone and attitude

   ✳ E.g. some questions had more confrontational phrasing, whereas others were more neutral

✳ A final question on the importance of intellectual property laws was asked of all students

CLASSES SURVEYED

❋ CPSC 312:

  ❋ A third-year computer science course in speciality programming languages; pre-requisites: CPSC 221, or CPSC 260 & EECE 320

❋ CPSC 101:

  ❋ A non-CS-stream course; pre-requisites: no previous CPSC credit

SAMPLE QUESTIONS

Q1

A number of students had complained that the programming assignment included a lot of things that they had not learnt in lectures. Bertie only just submitted his on time. He later admitted to Fred that he copied much of the code from some he found on a website.

Q2

In the scenario just described, Fred also revealed that he copied much of the code in his answer from the web as well. He also stated that most of the people he knew had done the same thing.

Q2

In the scenario just described, Bertie revealed to Fred that he never approached the lecturer or TAs for assistance as he was just too busy. Bertie ended up getting one of the top marks, doing better than many students he knew who did not copy some of their solution.

SAMPLE QUESTIONS

Q3

Jill recently set up a little e-commerce enterprise, seeking to sell a spreadsheet program that she wrote. She used to sell the program on one of the Internet auction sites, but has decided to set up her own, dedicated web site for the product. She has done everything possible to make the web site work to her advantage. It includes a number of on-topic jpeg images that she found on the Internet, the use of HTML meta-tags to maximize the chance of being found by search engines, and a detailed account of the ratings and comments she received while selling from the auction site.

Q4

In the scenario just described, some fellow students raised a few ethical issues regarding some of the practices that Jill used in her web site (one example being the copyright issue associated with the images used). However, Jill has decided that these issues are very minor ones, and will leave the site as it is. She explains that she has clearly hit on a winning formula with her web site as the income is exceeding all expectations. She is making a lot of money on this product.

SAMPLE QUESTIONS

Q5

A new form of DVD security was recently developed that appears to have stumped the rampant copying of DVD products. However, Bruce has just developed some software that will break this security and allow DVDs to be copied, obviously against the wishes of the DVD producers.

In the scenario just described, Bruce claims that the producers of the anti-copying mechanism made an implicit challenge in claiming that it would prevent further copying of DVDs, and he was simply responding to that challenge to see if it could be done.

Q6

In the scenario just described, Bruce claims that he is making a stand against rampant corporate self-interest and is happy to do his bit to restore some intellectual freedom to people who pay good money for over-priced DVDs. He states that this program will restore some much-needed balance to the consumer in a monopolistic market.

SAMPLE QUESTIONS

A group of fellow students have spent a couple of years developing a piece of software that "mimics" a well-known piece of commercial software. It started as a skeletal piece o code as an exercise, and grew into an ongoing challenge. Now they have released the software to the public as "open-source" (in the sense that the source, and the rights to modify it, is included). They are also releasing it as freeware. Their rights to do any of this have been questioned by the owners of the commercial software on which the students based theirs.

In the scenario just described, the commercial version of the product had an almost monopolistic hold on the marketplace. The product was therefore able to command a high price, due to the light competition. However, the freeware version contains most of the functionality that most users want, and at no charge. The commercial developers claim intellectual property theft; the freeware developers respond that the real issue behind the claim is that the market monopoly has been broken.

In the scenario just described, the core of the freeware version had been previously submitted as a group programming assignment. One of the group members had no further involvement in the development of the software.
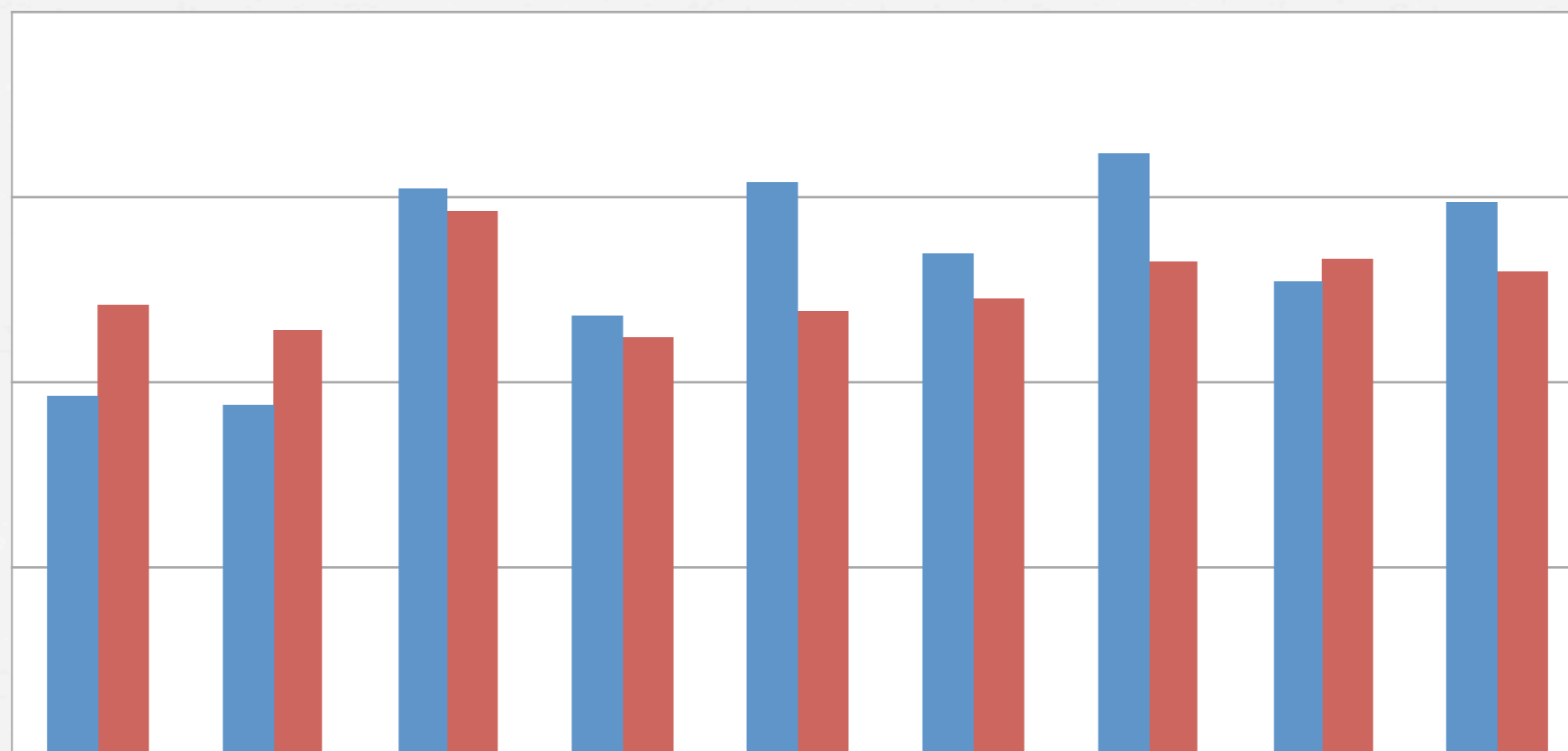
OVERALL RESULTS

Average across all questions

strongly
in
favour

5.00

3.75

2.50

1.25

0

strongly
opposed

1 2 3 4 5 6 7 8 9

312
101

arrow indicates statistical significance

RESULTS

t-Test: Two-Sample Assuming Unequal Variances		
Questions 1:		
	Color	White
Mean	2.3833	3.0000
Variance	0.7828	0.9032
Observations	60	32
Hypothesized Mean	0	
df	60	
t Stat	−3.0354	
P(T<=t) two-tail	0.0035	
t Critical two-tail	2.0003	

t-Test: Two-Sample Assuming Unequal Variances		
Question 5		
	Color	White
Mean	3.8333	2.9375
Variance	1.3277	1.4798
Observations	60	32
Hypothesized Mean Difference	0	
df	60	
t Stat	3.4260	
P(T<=t) two-tail	0.0011	
t Critical two-tail	2.0003	

t-Test: Two-Sample Assuming Unequal Variances		
Question 7		
	Color	White
Mean	4.0000	3.3125
Variance	0.9032	1.1895
Observations	63	32
Hypothesized Mean	0	
df	55	
t Stat	3.0292	
P(T<=t) two-tail	0.0037	
t Critical two-tail	2.0040	

Statistically significant

t-Test: Two-Sample Assuming Unequal Variances		
Question 3		
	Color	White
Mean	3.7833	3.6250
Variance	0.9184	0.5000
Observations	60	32
Hypothesized Mean	0	
df	81	
t Stat	0.9003	
P(T<=t) two-tail	0.3706	
t Critical two-tail	1.9897	

t-Test: Two-Sample Assuming Unequal Variances		
Question 9		
	Color	White
Mean	3.6842	3.2667
Variance	1.2199	0.8920
Observations	57	30
Hypothesized Mean	0	
df	68	
t Stat	1.8465	
P(T<=t) two-tail	0.0692	
t Critical two-tail	1.9955	

Not statistically significant

❈ See attached surveys....

CONCLUSIONS

❋ Statistically significant differences (DVD copying, code copying, mimicking commercial software to release as Open Source)

❋ Differences in perception across two classes suggests opinions are not fixed over time

  ❋ Integrating ethical content into the curriculum early may help students develop ethical maturity that will help them in their future professional life

❋ Further study is required

  ❋ Study questions need to be revised; test larger body of students (tests so far very preliminary)

  ❋ Examine how to integrate ethical content into existing curriculum