Working with Real Companies, Making a Real Impact: Student Perspectives on the Google Online Marketing Challenge

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Abstract

The Google Online Marketing Challenge is a global student competition in which teams are given $250 to develop and run an online advertising campaign for a business or non-profit organization over a three-week period. Despite the fact that 50,000 students have competed in the Challenge since its inception in 2008, relatively little is known about the students' experience in the Challenge. To address this shortcoming, this paper provides an overview of how the Challenge was implemented in an undergraduate Computer Information Systems class and then answers the following research questions: What do students like about the Challenge? What do students learn in the Challenge? How can the students' experience in the Challenge be improved? This research addresses these questions using quantitative and qualitative responses to a student survey. Results suggest that students enjoy working on a real project, seeing cause and effect in action, and gaining marketable skills. The key learning outcome of the Challenge is being able to explain core concepts in online marketing (such as click-through rate, landing page experience, and return on investment). Students like having the choice between finding a client on their own or being assigned a client by the professor. Also, according to the students, a four-member team is the ideal size for the Challenge. Furthermore, students would like to work on additional case studies relating to online marketing. Lastly, students recommend pre-selecting clients based on their willingness to use Google Analytics, as this would significantly improve students' ability to optimize campaign performance.

Keywords: Google Online Marketing Challenge, student perceptions, experiential learning, search engine marketing

1. INTRODUCTION

"Working with real companies was rewarding as we were having a real impact on the company with our marketing efforts." – Student

In its fifth year, the Google Online Marketing Challenge (the Challenge) has attracted over 50,000 students from almost 100 countries (Google, 2013b). Every spring semester, Google gives higher education student teams $250 to develop and run an online advertising campaign for a business or non-profit organization over a three week period. As part of the Challenge, students prepare and submit two reports to Google: a pre-campaign report, which describes the planned campaign, and a post-campaign

report, which describes the results and lessons learned. After the pre-campaign report has been received and approved by Google, teams receive a credit of $250 in their respective AdWords accounts. They then have three weeks to launch and run their campaigns, after which they write up their results and lessons learned in a post-campaign report. Based on the pre- and post-campaign reports, Google determines the global winner as well as the winners for the various geographic regions. This is usually completed by the end of July.

The Challenge is an example of experiential learning (Kolb, 1984). First, the Challenge immerses students in search engine marketing and the process of developing a campaign for a client. Second, as students discuss and prepare the pre-campaign reports, they reflect on and observe their experiences from many perspectives. Third, throughout the Challenge, students are tasked with continuously applying and refining their knowledge by optimizing the campaigns over a three week period. Lastly, as part of the post-campaign report, they are tasked with creating a logically sound theory of what happened and why. These four steps are the fundamental building blocks of the experiential learning model.

Surprisingly, little is known about students' preferences with regards to the Challenge. Most research on the pedagogy behind the Challenge emerged as a result of the first Challenge in 2008. Most of these papers did not include an empirical component that addressed students' attitudes towards the Challenge (e.g. Flaherty & Jansen, 2009; Rosso et al., 2009). Others only addressed certain aspects, such as student learning outcomes (e.g. Treiblmaier et al., 2009; Neal et al., 2009), or did not include students' feedback regarding potential for improvement (e.g. Murphy et al. 2009). This work aims to close this gap in the literature. Specifically, to address the research questions:

- What did students like about the Challenge?
- What did students learn in the Challenge?
- How could the students' experience in the Challenge have been improved?

The remainder of this paper is structured as follows. First, how the Challenge was implemented as part of an undergraduate Computer Information Systems class is explained. Followed by, a review of prior pedagogical research on the Challenge. Finally, the methodology of a student survey and the presentation of results are explained.

3. LITERATURE REVIEW

The Google Online Marketing Challenge has been used in a range of courses from Internet Marketing (Lavin, 2010) to graduate MBA MIS courses (Rosso, 2009). Flaherty and Jansen's (2009) paper provides an in-depth description of the Challenge and its various components.

The Challenge is suited for both undergraduate and graduate students in classes such as advertising, consumer behavior, e-commerce, integrated marketing, marketing strategy and online marketing. Lavin (2010) supervised 29 teams from 3 different Internet Marketing classes, one online graduate course, and two undergraduate courses - one on-ground and one online. Student evaluations from all classes were high, and, fell in the "Outstanding" range of scores.

A number of papers have been written about the 2009 Google Challenge and have summarized statistics provided by the Google Online Marketing Challenge Research Center. (Treiblmaier et al., 2009; Flaherty & Jansen, 2009; Neale et al., 2009). Flaherty and Jansen (2009) wrote that all three constituents provided positive feedback. Ninety-four percent of professors and 92 percent of students reported being pleased with the experience. Eighty-nine percent of the businesses would recommend participating in the Challenge to their colleagues.

Treiblmaier et al. (2009) stated that the survey showed favorable results in terms of student learning. Students improved their ability to

- Select keywords for a marketing campaign;
- Discuss online marketing;
- Gain insights related to working with clients;
- Explain online marketing terms;
- Appreciate the difficulties of developing an outstanding online marketing campaign.

Neale and colleagues (2009) stated that 87% of the responding students agreed that the Challenge engaged them better than other teaching tools such as cases and simulations. Ninety-five percent of the instructors thought the ability to spend real money contributed

positively to the learning experience, and 96% would run the Challenge in a future class.

4. METHODOLOGY

The Challenge was implemented as part of 'CIS 270: E-Business Systems,' which was an elective undergraduate Computer Information Systems (CIS) course taught in the School of Business that was also open to non-CIS majors. The class had a total enrollment of 31 students. The professor who taught the class had limited prior experience with Google AdWords. Thus, about 4-6 weeks prior to the semester, the professor consulted a number of free online resources by Google and other companies. In addition, the professor signed up for an AdWords account and spent about $10 on ads for a personal website. Links to these resources are listed in Table 1 below.

Google AdWords Help https://support.google.com/adwords/
Google Certification Program Learning Center https://support.google.com/adwords/certification/
Google Digital Marketing Course http://www.google.com/onlinechallenge/dmc/
Learn with Google http://www.google.com/ads/learn/
Pre- & Post-Campaign Reports from past Challenges http://www.google.com/onlinechallenge/past/index.html
Redfly Marketing Google AdWords Tutorials http://www.redflymarketing.com/adwords-tutorials/
SearchEngineLand PPC Academy http://searchengineland.com/ppc-academy-wrap-up-guidebook-58725

Table 1: Selected Online Resources

In preparing for the class, Google's official learning objectives for the Challenge (Google, 2013c) were reviewed. The learning objectives are stated as:

"At the end of the Google Online Marketing Challenge, students should be able to:

- Discuss online marketing and media planning;
- Collaborate effectively in a professional group setting;
- Explain the following concepts: click-through rate, landing page experience, campaign optimization, and return on investment (ROI);
- Discuss the benefits of targeting advertising to a select audience;
- Illustrate how technical and cultural factors affect the success of an online advertising campaign;
- Explain how to incorporate social media into a company's marketing plan."

The course was built around the Challenge, and these learning objectives were adopted for the course. To provide students with additional background regarding online marketing, a supplemental textbook, available online under a Creative Commons Attribution License (Stokes, 2011), was required. The course began with a broad discussion of online marketing and focused on specific aspects of search engine marketing. The weekly outline, which was used to guide the class lectures, is presented in Table 2.

Week	***Topic***
1	Overview of the Challenge
2	E-Business & Online Marketing
3	Search Engine Marketing
4	Keywords & Ad Groups
6	Ad Copy & Metrics
7	Bids & Budgets
8	(No classes: Spring Break)
9	Campaign Week 1: Performance Monitoring
10	Campaign Week 2: Experiments
11	Campaign Week 3: Optimization
12	Results Analysis & Presentation
13	*Special Topics*
14	*Special Topics*
15	Student Presentations
16	Final Exam

Table 2: Weekly Course Schedule

The pre-campaign report was due at the end of week 7. This placed the deadline right before Spring Break, which allowed a little extra time for Google to review the reports and transfer the credit into students' AdWords accounts. Students ran their three-week campaigns right after returning from Spring Break. In weeks 13 and 14, the class discussed various aspects of online marketing, such as website usability and mobile apps. A guest speaker from the marketing department discussed how online marketing tied in with other marketing activities of an organization. The post-campaign report was due at the end of week 15, before the final exam period.

In terms of grading, heavy emphasis was placed on the pre-campaign and post-campaign reports, each contributing 30% of the final grade (60% total). Google provided information on how the pre-campaign and post-campaign reports were graded (Google, 2013d) and these grading rubrics were adopted by the professor. Brief 25 question, multiple-choice midterm and final exams each counted for 15% of the final grade (30% total). The remaining 10% was equally split between peer evaluation of teamwork (5%) and in-class participation (5%).

In order to increase students' buy-in and sense of ownership over the project, students were asked to form teams and find clients for the Challenge on their own. Given that the class was open to non-CIS majors, it was stipulated that each team must have at least one CIS major among them – thus ensuring roughly equal amounts of technical knowledge across teams. The students were provided information from Google, outlining the Challenge, as well as tips on types of businesses to focus on and how best to approach them (Google, 2013a). Although the Challenge could be used with non-profit organizations, the class focused on working with for-profit businesses. The students reported no issues forming teams and finding suitable businesses to work with. The final list of clients included three companies in the restaurant/food services industry, a beauty salon, a florist, and a movie review website. The Challenge could have included a social media campaign (utilizing Google+). However, it was not, in order to keep complexity of the project at a minimal level.

At the end of the semester, a student survey consisting of 19 multiple-choice and two open-ended questions was distributed (Appendix A). The students were encouraged to complete the survey and 29 usable responses, representing a response rate of 93.5% were collected.

5. RESULTS

Of the 29 respondents, 12 (41.4%) were female and 18 (62.1%) were Computer Information Systems (CIS) majors. The vast majority (83.3%) of CIS majors in the class were male, representing an uneven distribution of gender by major ($X^2(1) = 11.948$, $p = .001$). Moreover, the majority (55.2%) of students in the class were juniors. The distribution of students by year is shown in Figure 1.
The distribution of gender by year is roughly equal ($X^2(3) = .898$, $p = .826$) and so is the distribution of CIS majors by year ($X^2(3) = 1.745$, $p = .627$).

The students formed five teams of five students and one team of six students. Given that the professor instructed students to have at least one CIS major per team, there were no significant differences between the teams with regards to the number of CIS majors ($X^2(5) = 8.612$, $p = .126$). There were, however, significant differences between teams with regards to gender, as two teams consisted of male students only ($X^2(5) = 11.823$, $p = .037$). Lastly, the distribution of students by year was roughly even across teams ($X^2(15) = 21.673$, $p = .117$). Only one student had used Google AdWords before starting the class, which meant there were no differences with regards to prior experience between teams.

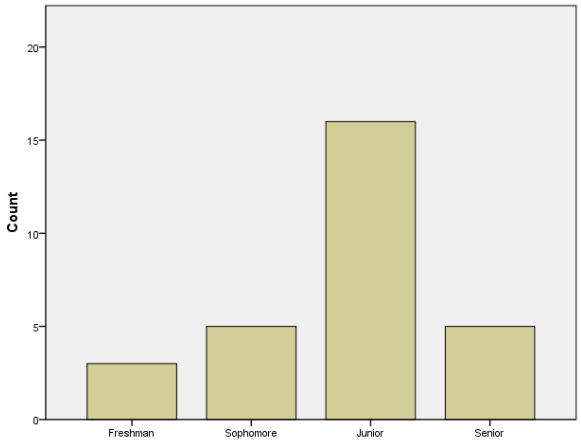

Figure 1: Distribution of students by year

What do students like about the Challenge?
Before delving into the particulars of what students liked about the challenge, understanding students' overall satisfaction with the Challenge was desired. Thus, they were asked to indicate their agreement with the statement "I enjoyed participating in the Challenge" on a scale from 1 – strongly disagree to 5 – strongly agree. Results indicated that all but one student enjoyed participating in the challenge (responding "agree" or "strongly agree"). The detailed results are shown in Figure 2.

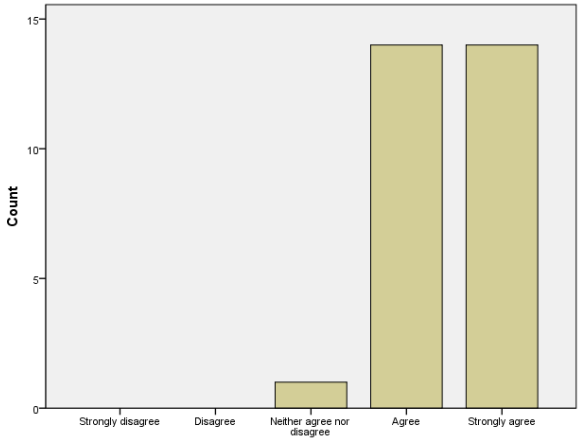

Figure 2: I enjoyed participating in the Challenge.

Surprisingly, CIS majors were likely to enjoy participating in the challenge more (M = 4.67, SD = .485) than non-CIS majors (M = 4.09, SD = .539, $t(27)$ = 2.974, p = .006). It was possible that the technical nature of search engine marketing was overall more attractive to CIS majors than to non-CIS majors.

Furthermore, an understanding of prior excitement about the Challenge was researched. To capture their sentiment, they were asked to indicate their agreement with the statement "I was enthusiastic about participating in the Challenge" on a scale from 1 – strongly disagree to 5 – strongly agree. Similar to the enjoyment question, all but two students were enthusiastic about participating in the Challenge (responded "agree" or "strongly disagree"). The detailed results are shown in Figure 3 below.

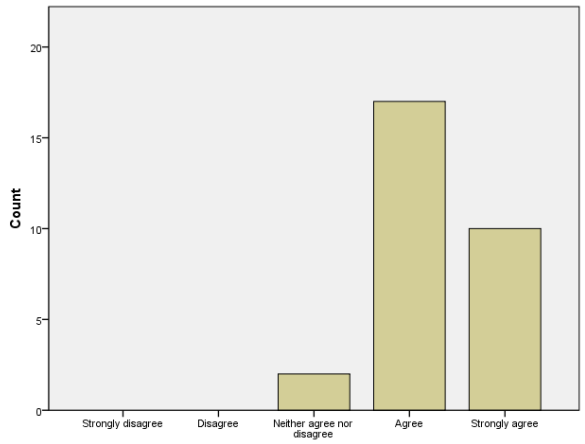

Figure 3: I was enthusiastic about participating in the Challenge.

Given these findings, it is not surprising that initial enthusiasm is strongly correlated with enjoyment ($r(27)$ = .466, p = .011). Thus, the more students were enthusiastic about participating in the challenge, the more they ended up enjoying it. However, given that both measures were taken at the same time (i.e. at the end of the semester), it is possible that enjoyment affected students' perceived initial enthusiasm retroactively.

Next, of interest was what students liked most about participating in the Challenge. It was believed that students might feel more engaged in the Challenge than in other teaching tools (such as simulations or case studies). This was driven by the fact that the Challenge provided a hands-on, real world learning experience that was unique and difficult to replicate using other classroom-based instructional methods. To test this assumption, students were asked to indicate their agreement with the statement "compared to other teaching tools (such as simulations or case studies), I was more deeply engaged with the Challenge" on a scale from 1 – strongly disagree to 5 – strongly agree. All students agreed by responding either "agree" or "strongly agree." The distribution between the two answers can be seen in Figure 4 below.

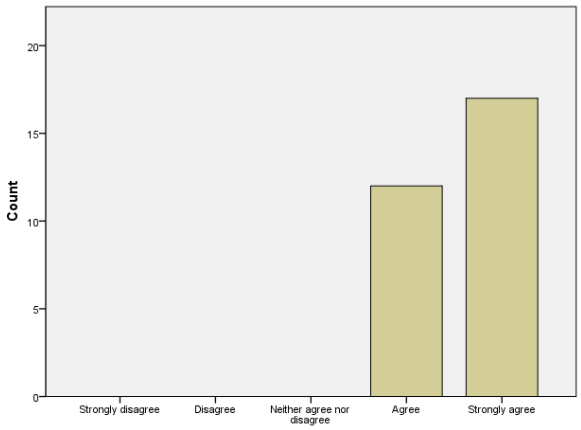

Figure 4: Compared to other teaching tools (such as simulations or case studies), I was more deeply engaged with the Challenge.

Clearly, students enjoyed the Challenge. However, to understand additional drivers of preferences for the Challenge, students were asked to respond in an open-ended format to the question of "what did you like most about participating in the Challenge?" All but one student responded to this question. After a thorough reading of the responses, the following three benefit-themes emerged: (1) working on a real project, (2) seeing cause and effect in action, (3) gaining marketable skills. The following sections briefly summarize each of the identified benefits.

Working on a real project

Several students highlighted the benefits of working on a real project, with real money, and making a difference for a real client. As one student stated, *"I like that it was a real thing. That we were spending real money."* Similarly, another student noted *"I liked working directly with the client and actually advertising for a company as opposed to the theoretical work we usually do in class."* Furthermore, students pointed to the real world impact of their work, as noted by *"working with real companies was*

rewarding as we were having a real impact on the company with our marketing efforts."

Seeing cause and effect in action

Students liked the fact that Google AdWords allows them to experiment with different keywords, ads, and bid amounts, and see their effects within a matter of hours. As one student noted, *"making changes and seeing how they worked was cool."* Similarly, another student stated that he liked *"understanding how different techniques effected [sic!] our results."* Another student noted enjoying *"the freedom to decide how to do our campaigns and experiment."* Lastly, students mentioned feeling rewarded by their success as noted by a student: *"it was exciting to see the growth of the campaigns."*

Gaining marketable skills

Some students indicated that they liked gaining practical skills that are of importance to employers in the marketplace. For example, one student stated: *"How it is actually relevant to society today, companies are interested in people who know how to do things like AdWords."* Similarly, a student stated: *"I can apply the knowledge learned in future projects and in the work force."* Lastly, one student pointed directly to how she would use the skills in her future career: *"to learn new marketing methods I can use in my future career as a Public Relations professional."*

What do students learn in the Challenge?

Next the extent to which students felt that the Challenge achieved its stated learning objectives was explored. Given that the Challenge required students to work outside of the classroom (for example by regularly checking performance and making adjustments to their campaigns), students were asked how much time, on average, they spent working on the Challenge outside of class. As shown by the results in Figure 5, the vast majority (82.8%) spent 1-5 hours per week working on the Challenge. Some (17.2%) reported working an additional 5-10 hours per week on the Challenge.

Interestingly, male students were more likely to report more hours per week (M = 2.29, SD = .470, where 2 = 1-5 hours, 3 = 5-10 hours, etc.) than female students (M = 2.00, SD = 0, $t(27)$ = -2.158, p = .040).

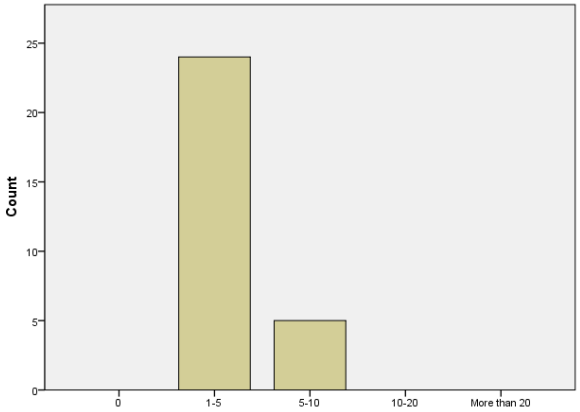

Figure 5: I spent about ___ hours per week working on the Challenge outside of class.

Next, students were asked to indicate their agreement with each of the six official learning objectives (Google, 2013). The results are summarized in Figure 6.

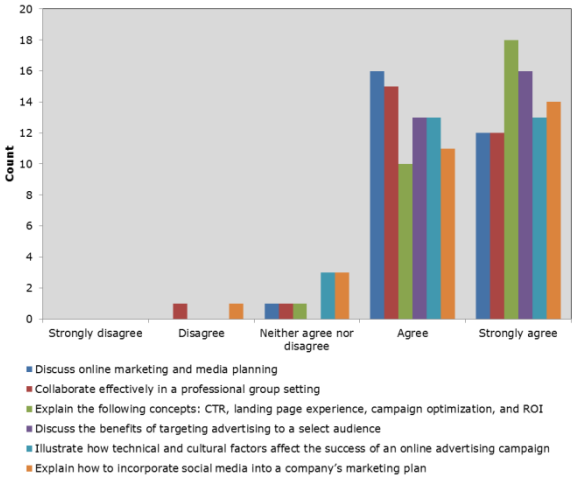

Figure 6: Participating in the Challenge improved my ability to ___.

Overall, the vast majority of students felt that the Challenge fulfilled each of the six learning objectives. However, the most students (62.1%) indicated strong agreement with the statement that the Challenge improved their ability to explain core concepts relating to online marketing, such as click-through rate (CTR), landing page experience, campaign optimization, and return-on-investment (ROI). The only two learning objectives that received a "disagree" response were "collaborate effectively in a professional group setting" and "explain how to incorporate social media into a company's marketing plan." Disagreement with the former statement could be explained by a student

having had a negative experience with regards to collaboration in his or her group. Given that social media marketing was not specifically worked on in the class, it was surprising that not more students disagreed with the latter statement. However, social media marketing was discussed in class and students may have assumed that class discussions were part of the Challenge.

Given the above findings, it is not surprising that students' perceived improvement in the six learning objectives exhibit high degrees of inter-correlation (see Appendix B). However, the learning objective "explain how to incorporate social media into a company's marketing plan" is not significantly correlated with any of the other five learning objectives (all $r(27) > .290$, $p > .126$). Again, this is possibly due to the fact that the social media marketing Challenge was not included.

Interestingly, students' enthusiasm about participating in the Challenge was positively correlated with each of the six learning objectives (all $r(27) > .410$, $p < .040$). Thus, the more students' were enthusiastic about participating in the Challenge, the more they felt that the Challenge helped them improve on the learning objectives. This finding is surprising given that students' enjoyment participating in the Challenge was not correlated with any of the learning objectives (all $r(27) < .349$, $p > .064$). Therefore, the data suggested that students' enthusiasm was more important than enjoyment when it came to achieving learning objectives in the Challenge. Further research is needed to clarify the issue of enthusiasm being a self-reported, retroactive measure.

Also, students' seniority was positively correlated with both the extent to which they felt that participating in the Challenge improved their ability to collaborate effectively in a professional group setting ($r(27) = .400$, $p = .032$) as well as their ability to discuss online marketing and media planning ($r(27) = .464$, $p = .011$). Thus, it appears that more senior students felt that the Challenge helped them improve these abilities to a greater extent than more junior students. Also surprisingly, CIS majors were more likely to feel that participating in the Challenge improved their ability to illustrate how technical and cultural factors affect the success of an online advertising campaign ($M = 4.61$, $SD = .502$) than non-CIS majors ($M = 3.91$, $SD = .701$, $t(27) = 3.145$, $p = .004$). Given that CIS majors are more likely to have an interest in the technical factors underpinning the Challenge, it is possible that the Challenge was more effective in improving this skill for CIS majors than for non-CIS majors.

Importantly, the amount of time students spent working on the Challenge outside of class was positively correlated with students who felt that participating in the Challenge improved their ability to discuss the benefits of targeting advertising to a select audience ($r(27) = .411$, $p = .027$) as well as their ability to illustrate how technical and cultural factors affect the success of an online advertising campaign ($r(27) = .455$, $p = .013$). Thus, increasing amounts of work on the Challenge outside of class paid off in terms of increased learning outcomes.

Given that reflective observation is critical to the experiential learning model (Kolb, 1984), what extent students felt that their critical reflection, which was part of the post-campaign report, was useful to their learning was explored. The vast majority (82.8%) of students indicated that the "Learning Component" of the post-campaign report was useful for their learning. The distribution of responses is shown in Figure 7 below.

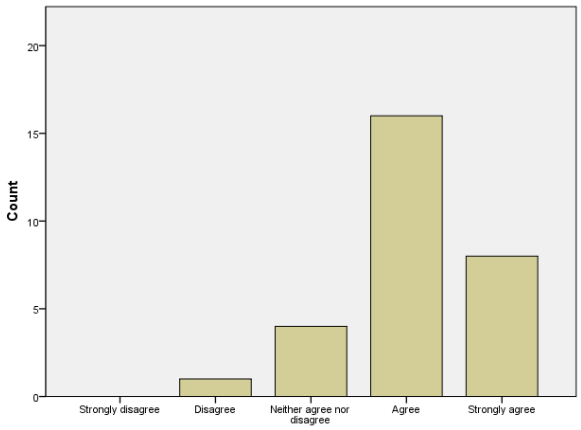

Figure 7: The critical reflection which is part of the post-campaign report (i.e. the "Learning Component") was useful for my learning.

Interestingly, the more students felt that the critical reflection was useful for their learning, the more they felt that participating in the Challenge improved their ability to collaborate effectively in a professional group setting ($r(27) = .425$, $p = .022$). This finding can be explained by the fact that the "Learning Component"

focuses predominantly on aspects of collaboration (i.e. group dynamics and client dynamics), thus furthering students' learning in this realm.

How can the students' experience in the Challenge be improved?

One of the goals of the survey was to determine if the client selection processes could have been improved. Students were asked if they preferred finding a client on their own (which they had to in this class) or if they would have preferred being assigned a client to work with. As shown in Figure 8, the students were divided on this question. Although 44.8% percent indicate that they would prefer being assigned a client to work with, 27.5% would prefer finding a client on their own.

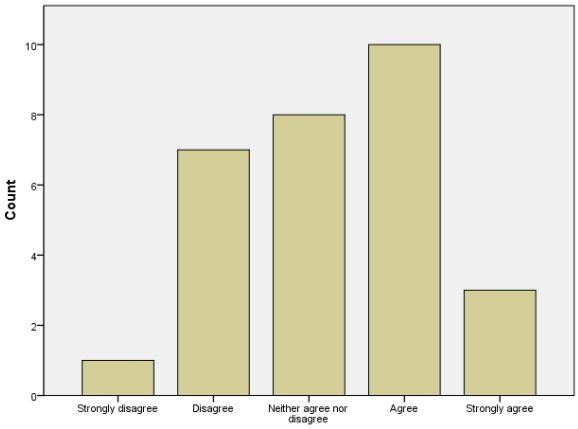

Figure 8: I would prefer being assigned a client to work with rather than finding a client on my own.

This suggests that, rather than making the decision to assign clients or have students find clients on their own, professors should consider offering both options to the students. This way, students who prefer finding a client on their own can do so, while students who want to be assigned a client can be catered to as well.

Furthermore, the survey questioned students' preferences with regards to ideal team size. Google specifies a minimum (3) and maximum (6) team size. The survey asked the students to indicate their preference outside of these boundaries. Although 80.6% of students in the class were members of five-student teams and 19.4% were in a six-student team, 48.3% would prefer a four-student team while 41.4% would prefer a five-student team. The distribution of responses is shown in Figure 9.

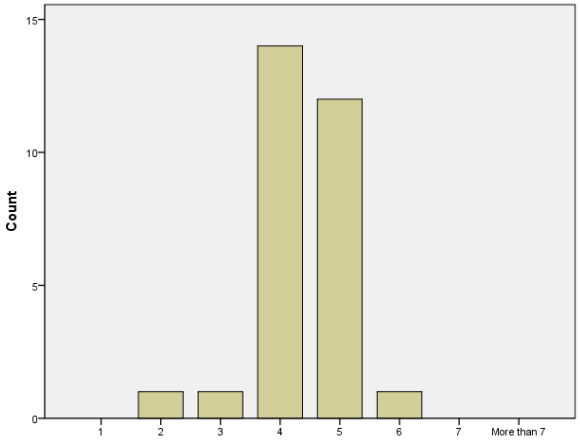

Figure 9: What would be the ideal team size for the Challenge?

Also, it should be noted that team size preference was not correlated with any other question on this survey. Thus, professors should aim to form teams consisting of four students, with the option of creating a five-student team, if necessary.

The survey also asked students how the Challenge could have been improved. Students were asked to give open-ended feedback to this question. Several themes were identified for improvement after an in-depth reading of the students' responses. A lot of students mentioned that their experience could have been improved by being part of a smaller team, which was consistent with findings regarding optimal team sizes above. Moreover, several students specifically stated preferring to be assigned a client to work with, which is also reflected by quantitative analysis above. However, in addition to these two points, the following two themes were identified for improvement: (1) provide additional case studies, (2) require Google Analytics. The following sections will discuss each theme.

<u>Provide additional case studies</u>

Several students mentioned that their experience could have been improved, had they been given additional materials in the form of case studies or conceptual papers. As one student noted, *"maybe go in depth with terminology with other case studies in class […] to support the learning of what was being taught in class."* Similarly, another student pointed to her need for additional theoretical background: *"The challenge was a great learning tool, but I would have liked to see an increased focus on e-marketing theory."* Similarly, another student

noted that he would have preferred to conduct additional research prior to the challenge to familiarize himself with the specific terminology of Google AdWords. Thus, specific case studies dealing with search engine marketing, or online marketing in general, could have been helpful to the students.

Require clients to use Google Analytics

Several students were frustrated with the fact that their client did not want to use Google Analytics, or any other form of web analytics. Google Analytics tracks website visitors, including those coming through ads on Google, and would allow students to better understand and optimize the customer conversion process. For example, one student stated: *"Use of Google Analytics […] could have improved our team's experience."* Similarly, another student noted: *"I really wish we could have used Google Analytics."* In fact, one student even suggested that students should only be allowed to work with clients that use Google Analytics: *"I think it would have been beneficial if we had to choose companies that did employ Google Analytics."* Since most clients outsourced web development to a third party, they were reluctant to pay their service provider for the integration of Google Analytics. Therefore, maybe it would be a good idea to require clients to use Google Analytics, if they want to participate in the Challenge.

6. CONCLUSIONS AND LIMITATIONS

This paper provides an overview of how the Challenge was implemented in an undergraduate Computer Information Systems class. Specifically, this research focused on understanding (1) what students like about the Challenge, (2) what students learn in the Challenge, and (3) how can the students' experience in the Challenge be improved.

Based on a survey among students, it was found that students enjoyed working on a real project, seeing cause and effect in action, and gaining marketable skills as a result of the Challenge.

The key learning outcome of the Challenge was for the students to be able to explain core concepts in online marketing (such as click-through rate, landing page experience, and ROI). The students agreed that the Challenge improved their ability to explain core concepts relating to online marketing, such as click-through rate (CTR), landing page experience, campaign optimization, and return-on-investment (ROI). The only two learning objectives that received a "disagree" response were "collaborate effectively in a professional group setting" and "explaining how to incorporate social media into a company's marketing plan". The latter was not covered in detail in the Challenge.

When asked how the challenge could be improved, students suggested working in teams of four and working on additional case studies relating to online marketing. Lastly, students emphasized the need to pre-select clients based on their willingness to use Google Analytics, as this would significantly improve students' ability to optimize campaign performance.

The study was limited in scope to just one classroom with a small sample size of just 29. The data collected was primarily descriptive in nature. Future work should be done to see if the challenge increased their knowledge of core concepts as compared to a course that did not utilize the Challenge.

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Editor's Note:

This paper was selected for inclusion in the journal as a ISECON 2013 Meritorious Paper. The acceptance rate is typically 15% for this category of paper based on blind reviews from six or more peers including three or more former best papers authors who did not submit a paper in 2013.

Appendix A: Survey Items

Question	*Answer choices*
1. Our client was helpful and accessible when needed.	(1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree)
2. Our client was interested in our work and the Challenge.	(1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree)
3. Compared to other teaching tools (such as simulations or case studies), I was more deeply engaged with the Challenge.	(1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree)
4. I enjoyed participating in the Challenge.	(1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree)
5. I was enthusiastic about participating in the Challenge.	(1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree)
6. I would prefer being assigned a client to work with rather than finding a client on my own.	(1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree)
7. Participating in the Challenge improved my ability to collaborate effectively in a professional group setting.	(1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree)
8. Participating in the Challenge improved my ability to discuss online marketing and media planning.	(1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree)
9. Participating in the Challenge improved my ability to discuss the benefits of targeting advertising to a select audience.	(1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree)
10. Participating in the Challenge improved my ability to explain how to incorporate social media into a company's marketing plan.	(1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree)
11. Participating in the Challenge improved my ability to explain the following concepts: clickthrough rate, landing page experience, campaign optimization, and return on investment (ROI).	(1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree)
12. Participating in the Challenge improved my ability to illustrate how technical and cultural factors affect the success of an online advertising campaign.	(1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree)
13. The critical reflection which is part of the post-campaign report (i.e. the "Learning Component") was useful for my learning.	(1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree)
14. I had used Google AdWords before starting this class.	(1 = True, 2 = False)
15. I spent about _____ hours per week working on the Challenge outside of class (for example doing related research, checking performance, updating the account, etc.).	(1 = 0, 2 = 1-5, 3 = 5-10, 4 = 10-20, 5 = More than 20)
16. What would be the ideal team size for the Challenge?	(1 = 1, 2 = 2, 3 = 3, 4 = 4, 5 = 5, 6 = 6, 7 = 7, 8 = More than 7)
17. I'm a _____.	(1 = Freshman, 2 = Sophomore, 3 = Junior, 4 = Senior)
18. I'm a CIS major.	(1 = True, 2 = False)
19. My gender is _____.	(1 = Female, 2 = Male)
20. What did you like most about participating in the Challenge?	(Open-ended)
21. How could your experience in the Challenge have been improved?	(Open-ended)

Appendix B: Correlations among Learning Objectives

	1	2	3	4	5	6
1. Collaborate effectively in a professional group setting.	--					
2. Discuss online marketing and media planning	.410*	--				
3. Discuss the benefits of targeting advertising to a select audience	.598**	.620***	--			
4. Explain how to incorporate social media into a company's marketing plan	.199	.125	.178	--		
5. Explain the following concepts: clickthrough rate, landing page experience, campaign optimization, and return on investment (ROI);	.240	.622***	.450*	.290	--	
6. Illustrate how technical and cultural factors affect the success of an online advertising campaign	.442*	.590**	.578**	.192	.670***	--

* $p < .05$, ** $p < .01$, *** $p < .001$