

Sustaining a Student Information Assurance Club



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ABSTRACT: *A number of schools that teach Information Assurance have formed student clubs to promote Information Assurance. Very little has been written on how to sustain a club. As the Information Assurance discipline matures, our approach to creating and sustaining student clubs should mature as well. This research project was a true “fishing expedition” of contacting existing student clubs and asking them what worked and what didn’t work at their school.*

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1. Introduction

In recent years, schools have begun to form Information Assurance Clubs (Livermore, 2011). Information Assurance clubs are an excellent way to increase the involvement of students with representatives from industry and government. This increased interaction greatly improves the quality of their education and the program they are in (Schneider, 2013). Clubs provide a number of benefits to the students including improved academic performance and a better sense of connection to the school. There is a positive and linear relationship between clubs and academic success (Huang & Change, 2004). Students are looking for more cocurricular involvement and participation in student clubs has been steadily increasing since the 1960’s (Sanders, 2011).

Starting a new student club is challenging and rewarding but sustaining a club has a different set of challenges. School clubs have failed for a variety of reasons. In some cases, schools may be forced to suspend or cancel a club’s charter (South Puget Sound Community College, N. D). There is very little in the literature on sustaining any type of student club much less an Information Assurance club. This research was conducted solely from self-interest and curiosity.

2. Methodology

The first step to learning the success factors behind sustaining an Information Assurance Club was to contact existing clubs. This was challenging because there is not a national list or registry of Information Assurance clubs and there is not a recognized expert on them. This project began by using an Internet search engine to identify existing IA clubs. Searches were done using the following terms: Information Assurance Club, Computer Security Club, and Security Club.

The searches identified 34 schools that had a Website registered with the search engine as having an Information Assurance Club. The Websites were often sketchy and only 31 of the school Websites provided contact information. Surveys were sent

to all of these schools just before the Winter break in 2012. One of the Websites had incorrect or outdated information so only 30 of the schools received the survey invitations. Nine responses were received for a 30% return rate. The research population was small but the return rate was relatively high for volunteer workers that had no connection to the researcher and no participation incentives.

3. Results

The first goal of the research was to determine the maturity and longevity of these clubs. The oldest club was founded in 2005 and two were formed in 2012. The majority of the clubs were less than three years old so there are not a lot of mature clubs with long track records. With a small sample and only two clubs with a history longer than five years it is difficult to draw any conclusions about the impact of club longevity. The club origin years are summarized in Table 1.

Unknown	2005	2006	2007	2008	2009	2010	2011	2012
1	1		1		1	1	2	2

Table 1. Year of Club Formation

Other student clubs and organizations have much longer track records. The Kiwanis have been sponsoring youth organizations since 1915 and the Key Club since 1925 (Sitter, 2006). These clubs can be looked at over time to see which chapters have thrived and which have failed. It will be some time before longitudinal and comparative studies can be done with IA clubs.

Many of the schools who teach Information Assurance have attained the Center of Academic Excellence in Information Assurance Education (CAE-IA) or one of the two derivations; the Center of Academic Excellence Research (CAE-R) or the Center of Academic Excellence Two Year (CAE-2Y) from the National Security Agency (NSA) and the Department of Homeland Security (DHS). The respondents reported that three of the schools had attained the CAE designation while six of the schools had not.

At every school the author has worked at, some student clubs have been far more active than others. In an attempt to measure how active the clubs are, the survey asked how often the clubs meet. More than half of the clubs meet on a weekly basis. Another third of the clubs meet biweekly with only one club that met less frequently. The responding IA clubs meet regularly and have full agendas at their meeting. The meeting frequency results are summarized in Table 2.

Weekly	Bi-weekly	On-demand
5	3	1

Table 2. Club Meeting Frequency

Another metric of club activity and robustness is how many students and faculty members regularly attend the meetings. The student attendance ranged from five to 75. The clubs had an average attendance of 25.2 students per meeting. The median attendance was 11.5 which show the strong variability in attendance. Many of the clubs do not have regular support from faculty at their meetings. The most common response to the number of faculty attending meetings was zero. The average number of faculty attendees was 1.1 with a range of answers between zero and three. Three of the clubs received financial support from their school. The remaining six clubs did not receive any financial assistance and reported using raffles, bake sales, and other means to raise the necessary operating funds. Funding student clubs is done differently at different schools. Some clubs are required to raise all of their own funds while other schools charge a student activity fee and distribute the money to clubs on their campus (Anon, 1999).

In an attempt to collect some qualitative information, the survey included a number of open ended questions. The first open ended question asked what the respondents considered to be the reasons for their club's success. The importance of copying best practices in education has been well documented (Marsla, & Thompson, 2004). Educators need to learn from other educators about what works best in their respective disciplines and fields. The survey answers documenting what works well in Information Assurance clubs are summarized in Table 3. Similar responses were grouped together and the number of similar responses is the second column of the table.

These responses match closely with the factors cited by the American Society of Civil Engineers (ASCE) for their student

chapters (Evans, Evans, & Sherman, 2001). The ASCE states that there are seven keys to a successful student chapter:

1. Motivated students
2. Proactive faculty advisor
3. Institutional support
4. Dedicated alumni support group
5. Good ties to local engineers/contractors/regulators
6. Good ties to local ASCE branch
7. Receptive community

The next question asked what are the biggest challenges that your club has faced. The schools that answered the survey operate in different environments with different student populations but face many of the same challenges. Table 4 lists the challenges that have faced the existing Information Assurance clubs.

Reason for Success	Responses
Dedicated and passionate students	5
Competitions	1
E-mail and social media to keep connected	1
Security labs	1
Alignment with student's educational goals	1
Support from the school and faculty with strong security backgrounds	1

Table 3. Reasons for Club Success

The comments about students graduating and getting jobs may hit some schools harder than others. Community colleges retain their students for shorter periods of time because they only offer two year degrees versus some schools that may be able to retain full time students for up to six years if they pursue an undergraduate and a graduate degree at the same school. Some schools have a higher percentage of working students than others. Students who work 30 hours or more per week are less likely to participate in clubs or extracurricular activities than students who do not work or work less than 30 hours (Eiling & Eiling, 2000).

The appeal of clubs is typically the activities that they sponsor. The clubs responded with some fascinating activities that other clubs may wish to copy. Preparing for and competing in cyber-security competitions was the most popular answer with presentations by graduate students and industry representatives a close second. One school club works with a local business incubator to launch security-related businesses. The typical club activities are listed in Table 5.

Biggest Challenges	Responses
New student members who need to be trained for the competitions	3
Campus paperwork regarding student club activities	2
Students graduating or getting jobs	2
Maintaining student interest	2
Tough competition in cyber-defense competitions	1
Finding meeting space	1
Lack of interest in the student body as we do not have a cyber-security major	1
Preparing topics and sessions for the club meetings	1

Table 4. Biggest Challenges facing Clubs

The most common club activities were preparing for and competing in cyber-security competitions. This may be explained by the answers to a questions asking if the club was formed primarily to compete in these competitions. Seven of the responding schools said that their clubs were indeed formed primarily to compete. The remaining two schools had not formed their clubs for these competitions. This is a predictable result because of the many benefits students can gain from cybersecurity competitions. Students are able to work in teams larger than most classes as teams of up to 80 members have competed at Defcon Capture the Flag competitions (Eagle, 2013). Students enjoy the competitions because they often encounter situations that they might not see in the classes at their home school.

The last question of the survey was an open ended question asking if the respondents had any suggestions that might be helpful. Only one respondent had any suggestions but their ideas were sound. Having recently been involved with the formation of an IA club, the author is painfully familiar with the mountain of paperwork and administrative hurdles involved in starting a new club. One of the earlier questions identified the bureaucratic hurdles associated with forming a new club as being one of the biggest challenges faced by two of the respondents. The suggestions received in the survey are listed in Table 6.

Club Activities	Responses
Preparing for and competing in Cyber-security competitions	3
Presentations from industry representatives and graduate students	2
Weekly study sessions	1
Work with local middle schools	1
Attendance at events such as Defcon, Engineering Expo	1
Work with a local business incubator to launch small security businesses	1
Discussion of recent cyber-security news and events	1
Learning	1

Table 5. Typical Club Activities

Club Activities	Responses
Use social media	1
Serve food at the club meetings and activities	1
Make sure that you complete the necessary school paperwork for activities well ahead of time	1

Table 6. Suggestions to other clubs

4. Conclusions

Information Assurance Clubs are a relatively new development in the rapidly evolving Information Assurance educational environment. Clubs are an excellent way to develop camaraderie among the IA students and help them compete in the various cyber-security competitions around the country. Students achieve a number of benefits from participating in extracurricular activities like an Information Assurance Club. Schools that are building an Information Assurance program or pursuing the CAE designation from the NSA and DHS should consider forming and investing in a student Information Assurance Club. Club sponsors should recognize that cyber-defense and industry speakers are the most popular activities for IA clubs. Several of the items listed as the biggest challenges facing a club were school paperwork and finding a place to meet. These items are completely under the control of every school and administration needs to support clubs and not be a deterrent to them.

Student clubs need a reason for existence. Several of the responses indicated that their clubs exist for competition in cyber-defense competitions. Preparing for competitions provides a reason for frequent meetings and group interaction. Providing a competitive focus or organizing an ongoing industry lecture series provides a focus that meets the needs of the student members and the school.

Future researchers should conduct a study of IA clubs and clubs in other academic areas. It might be revealing to see how clubs without competitions and industry speakers survive. The research could be extended to community and industry groups.

There are organizations like the Colloquium for Information Systems Security Education (CISSE) that have thrived for years on volunteer labor and minimal outside support. The success factors for other organizations should be applicable to a student IA club.

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Author Biography

Jeffrey A. Livermore received his doctorate in Information Systems from Nova Southeastern University and completed a post-doctoral fellowship in Information Assurance at the University of Maryland University College. He has taught at a number of schools including Lawrence Technological University and the University of Baltimore. He has published extensively in agile software development methodology implementation and the ethics and techniques of teaching information systems and information assurance.