Experiences in Implementing Electronic Questionnaire on Student Learning Activities

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Abstract

Student feedback is important as one measure, among many, used to enhance and provide evidence-based information that assists in the improvement for continued success and planning for the future. Student Activities Questionnaire (SAQ) is one of the formal channels at CPCE Student Affairs Office (CPCE CSAO) to collect first hand personal feedback from participants on the effectiveness of learning experience through the activities. It helps CSAO to keep providing quality student services and developmental activities in various themes for students' whole-person development. Respondents were asked to express their opinions on the statements in 5-point scales and optionally write down comments or suggestions. In 2015/16, the paper-based SAQ has gradually changed to an online SAQ (eSAQ) system. A full implementation of eSAQ was conducted in 2016/17. Our study aims to investigate any significant changes in terms of response rate and amount of written comments using paper-based SAQ and eSAQ. The results showed that 2015/16 paper-based SAQ had a significantly better response rate than both years' eSAQ. When comparing both years' eSAQ, the response rate had a positive improvement from 2015/16 to 2016/17. In the written comment parts of eSAQ, the ratio of written comments per respondent also increased significantly in 2016/17. Moreover, the ratio of the word count of the written comments words per respondent also rose substantially. Respondents were more willing to answer the open-end questions using eSAQ. The advantages of using eSAQ can be found in some activities not suitable for paper-based. In addition, eSAQ promoted environmental protection and enhanced efficient administrative work. Some measurements were suggested to improve eSAQ response rate such as using QR code and email reminder.

Keywords: Student Feedback, Electronic Questionnaires, Developmental Activities

Introduction

Student feedback is important as one measure, among many, used to enhance and provide evidence-based information that assists in the improvement of continued success and planning for the future. One of the direct channels is to give students from a questionnaire to collect first-hand personal feedback from participants on the effectiveness of learning experience through the activities. It aims to help the activity organizer to understand the students' perception on the effectiveness in learning and quality of activity provision. It helps the organizer to keep providing quality student services and developmental activities in various types for students' whole-person development. Respondents were asked to express their opinions on the statements by giving scores on the list of questions and provide some comments or suggestions.

Trend and experience of using online questionnaire

Online questionnaires can be administered in a time-efficient manner, minimizing the period it takes to get a questionnaire into the field and for data collection. Moreover, some online questionnaire software allows users to download data easily and generate some simple descriptive statistics directly. Therefore, technology offers huge efficiencies in the execution of repetitive administrative tasks such as data entry.

Online questionnaires are quite flexible and convenient. Nowadays, students can easily have Internet access either at home or through college free Wi-Fi by using various devices such as personal computers, tablets and even their mobile phones at any time they want.

In some online questionnaires, the respondent must answer a question properly before going to the next question or completing the survey. This eliminates item non-response and the necessity to throw out answers that that been entered improperly. As a result, a complete and large sample can be easy to obtain.

For other advantages, online questionnaire can be construed as environmentally friendly. Furthermore, online questionnaire can be found in some activities not suitable for paper-based. However, some may wonder if the results obtained through electronic methods could be comparable to those obtained through paper forms. A question also arises as to whether any shift to a new mode of administration might come at a price – a reduction in the quality of the data.

Avery et al. (2006) investigated the effects of using paper form and electronic questionnaire for course evaluations at Cornell University. Compared with paper delivery, Web-based methods led to lower response rates. Lower response rates might result from a perception that electronic evaluations offer less anonymity than paper. However, the lower response rates may be temporary. As students get adjusted to the new system, response rates may increase significantly.

Nulty (2008) did a meta-analysis on the adequacy of response rates to online and paper surveys in different universities. In general, online surveys are much less likely to achieve response rates as high as surveys administered on paper. Methods for boosting online survey response rates such as reminder emails worked.

Denscombe (2009) did online and paper questionnaires among aged 15-16 students on the use of tobacco and alcohol. Compared with paper-based questionnaires, the administration of questionnaires online tends to produce lower item non-response rates where the questions are open-ended and require respondents to provide unstructured text-based answers online, but it has relatively little impact on the item non-response rates for fixed-choice question. Perhaps entering text is less burdensome.

McPeake (2014) examined the use of electronic surveys in healthcare research and discussed the advantages of electronic surveys over traditional surveys. It also suggested some ways to improve response rate. For example, keeping the survey as short as possible, including the estimated time to complete a survey, and setting up reminder packs or alerts, etc.

Oishi (2016) held two web questionnaire surveys to obtain some educational information of the students in a Japanese university. Reminders were sent to remind students to answer the questions. Finally, the response rate of first questionnaire survey was 13.6% initially and became 36.5% after reminding. The rate of second survey was 15.1% initially and increased to 40.6% after reminding. These response rates were really high because the response rate of general web questionnaire survey was at most 10%. Also, the reminder showed its effect on the response rate.

From the literature reviews, electronic questionnaire may have a lower response rate than the traditional paper questionnaire. But the technology of electronic platform is getting more advanced and user-friendly, users are likely to be familiar with the

electronic platform and willing to answer the questionnaire, as well as the open-ended questions. Many methods could also be adapted to boost up the response rate.

Background of CSAO

The College of Professional and Continuing Education (CPCE), founded in 2002 by The Hong Kong Polytechnic University (PolyU), focuses on the provision of high quality self-financed programmes at the post-secondary level. The mission of CPCE is to offer quality higher education opportunities for senior secondary school leavers, sub-degree graduates and mature students that provide a solid foundation for further studies, career development and lifelong learning. CPCE Student Affairs Office (CSAO) is one of the units under CPCE. It provides quality student services and developmental activities in various themes for students' whole-person development. The activities and services are classified into ten themes: Career Development, Contributions and Services, Counselling Services, Further Studies, Global Exposure, Leadership and Communication, Physical and Psychological Wellness, Recognition, Sustainability and Knowledge Enrichment, and Facilities and Support Services. These activities seek to nurture students' creativity, active learning and critical thinking abilities as well as to enhance their self-confidence, a positive attitude and a sense of responsibility.

Student Activity Questionnaire (SAQ) is regarded as one of the channels at CSAO to collect first-hand personal feedback from participants on the effectiveness of learning experience through the activities. It aims to help CSAO to keep providing quality student services and developmental activities in various themes for students' whole-person development. Respondents were asked to express their opinions on the statements in 5-point scales, with the poles being 1 (strongly disagree) and 5 (strongly agree), and optionally write down comments or suggestions.

Study Objective

Our study aims to investigate the impact of introducing electronic-based questionnaire for the students' responses, including the changes in response rate and amount of written comments using paper-based SAQ and eSAQ. It would help the organizers of student activities to anticipate the behaviour change of students when the channel of

the data collection is put online The rates showed statistically significant with a two-tailed p-value of less than 0.05 in two independent proportions tests for response rate and Poisson rate tests for comment count.

Methodology

To promote environmental protection and enhance efficient administrative work, it was planned that starting from 2015/16, the paper-based SAQ has gradually changed to an online SAQ (eSAQ) system. The pilot implementation of eSAQ was conducted in 2016/17. In the selection of the questions, there are four compulsory 5-point scales generic statements included in all questionnaires. Questions about different Intended Learning Outcomes (ILOs) would be included according to the nature of the activities. Lastly, project owners would confirm the programme specific statement questions for their own use.

For paper form SAQ, the questionnaires were provided to project owners before the activity by administrative staff. Project owners distributed the SAQ papers to participants by the end of the activity. For some off-campus activities without physical presence of project owners (e.g. community services), administrative staff would send the scanned SAQ papers to participants. Then, administrative staff scanned the SAQ papers and prepared the reports and raw data files. Reports would be sent to the respective project owners afterwards. SAQ questionnaires were kept in office's storeroom and were shredded after the respective academic year. E-reports and raw data files were kept in the shared drive.

For eSAQ, QR code and/or URL link with password were provided to project owners before the activity. Project owners showed the information to participants by the end of the activity. Administrative staff directly sent eSAQ information to participants for some off-campus activities without physical presence of project owners. Then administrative staff generated the eSAQ reports and raw data files from online survey platform. Reports were sent to the respective project afterwards. E-reports and raw data files were kept in the shared drive.

Findings and Results

1. 2015/16 paper form versus 2015/16 eSAQ

In 2015/16, both paper form SAQ and eSAQ were used. The response rates were then compared to see which would be more favourable to higher response rate. Table 1 listed the response rate by two modes. The overall response rate of paper SAQ was much higher than that of eSAQ (96.5% vs. 57.9%, p<0.001).

For the activities by theme, the response rates were significantly higher in paper SAQ than eSAQ in Career Development (90.4% vs. 37.4%, p<0.001) and Sustainability and Knowledge Enrichment (93.5% vs. 27.5%, p<0.001). On the contrary, Leadership and Communication got significantly higher response rate in eSAQ than paper SAQ (80.8% vs. 60.4%, p=0.0371).

For the activities by project title, only Challenge and Explore Series had significantly higher response rate in eSAQ than paper SAQ (80.8% vs. 60.4%, p=0.037). Life Appreciation Series (97.1% vs. 72.0%, p<0.001), Complementary Studies Programme (100.0% vs. 37.8%, p<0.001), and Sustainability Programme (46.0% vs. 15.6%, p<0.001) had significant better response rate in paper SAQ.

Generally, better response rate was found in paper SAQ, especially in activities of Career Development, Sustainability and Knowledge Enrichment, Life Appreciation Series, Complementary Studies Programme, and Sustainability Programme. But the activities of Leadership and Communication / Challenge and Explore Series were more favourable to eSAQ. Also, some of the activities such as Contributions and Services, Physical and Psychological Wellness, Local Community Services, and Psychological Wellness-related Activity had more or less the same response rate in paper SAQ and eSAQ.

Table 1. Response rate of 2015/16 paper SAQ and eSAQ

	2015/16 paper SAQ		2015/16 eSAQ	
	No. of response	Return rate	No. of response	Return rate
Overall	2473	96.5%	358	57.9%
By theme				
Career Development	123	90.4%	117	37.4%
Contributions and Services	32	74.4%	13	65.0%
Leadership and Communication	29	60.4%	21	80.8%

Physical and Psychological Wellness	1441	100.0%	178	96.7%
Sustainability and Knowledge Enrichment	715	93.5%	19	27.5%
By project title				
Local Community Services	7	50.0%	13	65.0%
Challenge and Explore Series	29	60.4%	21	80.8%
Life Appreciation Series	67	97.1%	18	72.0%
Psychological Wellness-related Activity	302	93.8%	160	100.0%
Complementary Studies Programme	634	100.0%	14	37.8%
Sustainability Programme	81	46.0%	5	15.6%

2. 2015/16 eSAQ versus 2016/17 eSAQ

eSAQ was done in both years. Their response rates were compared to see if any improvement would be found. Table 2 listed the response rate in two years. The overall response rates were 57.9% and 63.7% in 2015/16 eSAQ and 2016/17 eSAQ respectively. There were 5.8% significant (p=0.004) improvement. Although paper-based had a significantly (p <0.001) better response rate than eSAQ, the rate had a significant (p=0.007) improvement in eSAQ from 2015/16 to 2016/17.

For the activities by theme, the response rates increased significantly from 2015/16 to 2016/17 in Career Development (37.4% vs. 77.5%, p<0.001) and Sustainability and Knowledge Enrichment (27.5% vs. 88.3%, p<0.001). On the contrary, a significant decline of response rate was found in Contributions and Services (65.0% vs. 35.8%, p=0.007), and Physical and Psychological Wellness (96.7% vs. 52.3%, p<0.001).

For the activities by project title, a significant drop of response rate was found in Local Community Services Activity (65.0% vs. 35.8%, p=0.007), and Psychological Wellness-related Activity (100.0% vs. 71.0%, p<0.001).

In summary, the response rate improved from 2015/16 to 2016/17, especially in the activities of Career Development, and Sustainability and Knowledge Enrichment. All these activities had a better response rate in paper SAQ in 2015/16. There's still room for improvement of response rate in eSAQ for these activities. However, some individual theme or project title got an inverse trend, such as Contributions and Services, Physical and Psychological Wellness, Local Community Services, and Psychological Wellness-related Activity. Coincidentally, all these activities had the similar response rates in paper SAQ and eSAQ in 2015/16.

Table 2. Response rate of 2015/16 and 2016/17 eSAQ

| | 2015/16 eSAQ | | 2016/17 eSAQ | |
	No. of response	Return rate	No. of response	Return rate
Overall	358	57.9%	1824	63.7%
By theme				
Career Development	117	37.4%	134	77.5%
Contributions and Services	13	65.0%	39	35.8%
Leadership and Communication	21	80.8%	284	69.4%
Physical and Psychological Wellness	178	96.7%	726	52.3%
Sustainability and Knowledge Enrichment	19	27.5%	459	88.3%
By project title				
Local Community Services	13	65.0%	39	35.8%
Challenge and Explore Series	21	80.8%	46	71.9%
Life Appreciation Series	18	72.0%	40	57.1%
Psychological Wellness-related Activity	160	100.0%	98	71.0%
Complementary Studies Programme	14	37.8%	378	100.0%
Sustainability Programme	5	15.6%	56	53.8%

3. Numbers of written comments

For the open-end questions, respondents were free to answer in Chinese and/or English. The answers were recorded digitally only for eSAQ. There were 4 and 5 open-end questions in 2015/16 and 2016/17 eSAQ respectively. In terms of numbers of written comment, the response rate increased significantly ($p<0.001$) from 0.04 comments per respondent (15/358) to 0.37 (681/1824) between 2015/16 and 2016/17. For the individual question, the response rate also increased significantly. Larger proportion of respondents was more likely to express their opinions in the questions of "What aspect(s) of the course do you like most?" (0.01 to 0.15) and "How might the course be improved?" (0.01 to 0.11). These comments were important to modify and optimize the activities in future.

Table 3. Number of written comments of 2015/16 and 2016/17 eSAQ

| | 2015/16 eSAQ (N=358) | | 2016/17 eSAQ (N=1824) | |
Questions	No. of comments	Rate	No. of comments	Rate
Overall	15	0.04	681	0.37
If you have any other comments or suggestions on the activity, please write them in the following box.	3	0.01	56	0.03

What aspect(s) of the course do you like most?	5	0.01	265	0.15
How might the course be improved?	4	0.01	207	0.11
Please suggest complementary course (s) / topic(s) that you think are interesting or useful.	3	0.01	66	0.04
Please suggest PE course(s) that you might be interested in.	N/A	N/A	87	0.05

4. Word count of comments

For the word count of the written comments, a character in Chinese or a single word in English was regarded as 'one unit'. The rate rose significantly (p<0.001) from 0.31 words per respondent (111/358) to 2.00 (3645/1824). For the individual question, the rate also rose significantly. The trend is that respondents were more willing to answer the open-end questions instead of leaving it blank, and express their opinions with more words when using eSAQ. Longer fragments and sentences were found in their comments. It could let the activity organizers to effectively understand the pros and cons of the activities and do it better in the next time.

Table 4. Number of word count in the written comments of 2015/16 and 2016/17 eSAQ

Questions	2015/16 eSAQ (N=358)		2016/17 eSAQ (N=1824)	
	No. of word count	Rate	No. of word count	Rate
Overall	111	0.31	3645	2.00
If you have any other comments or suggestions on the activity, please write them in the following box.	30	0.08	557	0.31
What aspect(s) of the course do you like most?	46	0.13	1223	0.67
How might the course be improved?	23	0.06	1453	0.80
Please suggest complementary course (s) / topic(s) that you think are interesting or useful.	12	0.03	220	0.12
Please suggest PE course(s) that you might be interested in.	N/A	N/A	192	0.11

Conclusion and Recommendation

The response rate using paper form seems better than using eSAQ. It may be due to the new implementation of eSAQ. Students may not be very familiar with it. The response rate using eSAQ improved in 2016/17. Furthermore, the response rate of

written comments improved too. The implementation of eSAQ is positive. Our findings are also coherent with the previous studies. Although the change from paper form to electronic resulted in lower response rate, it is good to see the written comments could be well recorded.

Some measurements could be made so as to facilitate the eSAQ. Moss and Hendry (2002) noticed that the more complicated access may have filtered out less motivated respondents. The ease of access to the survey page is important. The use of plain and simple designs, to minimise download time and reduce the need for complex Internet skills to navigate the form. Principles of good paper questionnaire design also apply to online surveys: items should have simple sentence constructions, be positively worded, and ask only one question.

To improve response rates, these practices are suggested: limit the number of times respondents are contacted, offer small incentives, and develop the best possible surveys. An e-mail reminder is also a good way to boost the response rate. However, it may be misclassified as junk mail. Also, it is quite possible that many students use campus addresses infrequently, relying instead on e-mail accounts that they have set up on other Internet service providers. Alternately, students may use a campus e-mail address, but have limited access to a computer on which to check their e-mail (Sax, 2003). The contact e-mail should be short and direct the respondent right to the survey URL. It is not the number of questions that affect the response rate, but the amount of time and effort needed to complete a survey (Evans, 2005). Moss and Hendry (2002) suggested that giving a realistic estimate of survey completion time could help too.

Nulty (2008) suggested persuading respondents that their responses will be used. Let the students believe that the academics will take the feedback seriously by involving some active demonstration to students that feedback is valued and acted upon. If the project owners also take the opportunity to demonstrate and/or convince students that their feedback has been, or will be, used to good effect.

The impacts of introduction of eSAQ to replace paper-based SAQ will be further investigated in the coming year with the consideration on the aspects of the student's responses, the written comment richness, as well as the effect of the introduced feedback facilitation measures.

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