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Developing co-operative education in the built environment through post occupancy evaluation of DETE educational facilities

Final Report 2016

Queensland University of Technology (QUT)

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Executive summary

Historically, the Department of Education, Training and Employment (DETE), Queensland has outsourced the role of undertaking Post Occupancy Evaluations (POEs) to professionals to provide the Department with data on the functional, technical and environmental performance of high profile Capital Works Delivery programs. These include, most recently, the South East Queensland Schools PPP Program, State Schools of Tomorrow Program (SSOT), Building the Education Revolution (BER), and the Year 7 Flying Start Pilot Program (in 2011, 20 schools were chosen to pilot the move of Year 7 to high school). In 2013, a POE Pilot Study was developed and undertaken by DETE staff, with the assistance of an externally sourced architect with a high level of knowledge in the design of DETE facilities, with the aim of developing a *Post Occupancy Evaluation Tool* for the Department that would provide a consistent data set to inform the future design of DETE facilities. The POEs that have been undertaken to date have provided the Department with data in relation to the following criteria: functional performance; technical and environmental performance; quality; value for money; and fit-for-purpose. However, each POE commission has collated the data sets utilising different methodologies and by sorting the criteria under a variety of headings. Therefore, whilst the POEs have provided the Department with excellent data, the varying methodologies used have precluded the Department, to date, from being able to accurately compare data across programs over time. One of the key objectives for DETE is to develop a *Post Occupancy Evaluation Tool*, with the requisite surveys and templates, in conjunction with Queensland University of Technology (QUT), which will enable the Department to collect data in a consistent manner thus enabling data comparisons across programs over time.

The Department's aim is to deliver high quality, fit-for-purpose and future focused educational facilities. Further, recent research has shown that there is a link between quality learning environments and improved educational outcomes (Institute for Social Research, 2013). Therefore, another key objective for DETE is for the *Post Occupancy Evaluation Tool* to provide the Department with data that will inform both the Capital Works Planning Process and the Department's *Design Standards for DETE Facilities* suite of documentation which sets the framework for a consistent approach to the delivery and refurbishment of innovative and cost effective educational facilities in Queensland. Research and pilot studies undertaken by DETE suggest that the incorporation of findings from POEs as a key input into the *Design Standards Review Framework* process, and any subsequent amendments to the Capital Works Planning process and the suite of Design Standards, will improve the quality of the learning environments, increase the sustainability and reduce the long-term maintenance costs of infrastructure delivered across the Capital Works Delivery programs. Moreover, the proposed POE process will also complement benchmarking studies on Capital Works programs.

Therefore, this seed project addressed the initial concern of how to professionalise the collection of data from POEs to inform Design Standards for educational facilities. The Post

Occupancy Evaluation Tool mobile application developed by this seed project is unique, builds on previous work found within the literature and addresses a real issue that DETE face in being able to compare and contrast across building types, building methods and approaches to procurement.

Recommendations

There are four main recommendations that emerge from this seed project and these include: (1) development of a mobile application to collect standardised data from POEs; (2) the use of POE data collection to inform Design Standards for educational facilities; (3) the POE mobile application is a valuable tool for use within the built environment curriculum; and (4) a Co-operative Education Centre ready for deployment. These are described in detail below.

Mobile Application to collect standardised data from Post Occupancy Evaluations

This seed project developed a prototype mobile application to aid in the consistent data collection and storage of information arising from POEs. This Post Occupancy Evaluation Tool mobile application is now freely available from the Apple Store and has the potential to impact design principles for education facilities worldwide. This project represents a partnership between QUT together with DETE, who worked together with 28 QUT postgraduate Architecture students to test the validity of the instruments that informed the mobile application. This partnership demonstrates how university and industry partnerships can work closely together to solve real problems within a tight budget and a one-year timeframe.

Recommendation 1: *share the Post Occupancy Evaluation Tool through the Apple Store free of charge to all users.*

Professionalise Post Occupancy Evaluations to inform building Design Standards

Assessors, teachers and students now have a mobile application to support the standardised collection of data for POEs. This standardised data then offers the opportunity to conduct applied research. In turn, this will increase the usability of POEs results; which in turn provide a results database to inform DETE educational building Design Standards. Ultimately, future research into the relationship between learning outcomes and the built environment will endeavour to contribute to what is currently a gap in the literature.

Recommendation 2: *disseminate the accessibility and use of the Post Occupancy Evaluation mobile application broadly to government Capital Works departments.*

Post Occupancy Evaluation mobile application is a valuable tool for the higher education curriculum

This mobile application will be available to universities, academics and students at no charge and this makes the integration of POEs into the curriculum of built environment programs and courses very achievable. With more integration into the curriculum and with ease of access to a standardised instrument, it is anticipated that commissioning POEs as part of Capital Works building activities, more realistic than was previously the case.

Recommendation 3: *disseminate the accessibility and use of the Post Occupancy Evaluation mobile application broadly for integration into built environment curriculum to universities.*

Co-operative Education Centre ready for deployment

The Co-operative Education Centre, where QUT students acquire professional knowledge, skills and attitudes, offers a supportive pathway from study to employment. Phase 2 of this project will establish an ongoing Co-operative Education Centre to offer paid work integrated learning opportunities to built environment students to conduct POEs on DETE educational facilities.

Recommendation 4: *continue to negotiate Phase 2 of this project with DETE for deployment of the Co-operative Education Centre to employ QUT pre-professional students from the built environment disciplines to conduct Post Occupancy Evaluations on educational facilities.*

Acknowledgements

This project could not have been completed without the willingness of a QUT Architecture academic Dr Lindy Osborne and 28 Master of Architecture students who tested the validity of a range of different Post Occupancy Evaluation instruments and scales. These students went beyond their assessment task to conduct a Post Occupancy Evaluation on educational facilities to extend their work into research activities to test different instruments and a range of Likert Scales. The feedback from these students and their research was instrumental in reshaping the School and Room Surveys and confirming the validity of the Teacher and Student Surveys.

The project also benefited from the steering group meetings with the industry partner Capital Works Delivery, Infrastructure Services Branch, Department of Education, Training and Employment (DETE), Queensland.

List of acronyms used

BPE	Building Performance Evaluation
DETE	Department of Education, Training and Employment
OECD	Organisation for Economic Cooperation and Development
OLT	Office for Learning and Teaching
POEs	Post Occupancy Evaluations
QUT	Queensland University of Technology
WIL	Work Integrated Learning

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Introduction

History of Post Occupational Evaluations

Historically, the Department of Education, Training and Employment (DETE) has outsourced the role of undertaking Post Occupancy Evaluations (POEs) to professionals to provide the Department with data on the functional, technical and environmental performance of high profile Capital Works Delivery programs. These include, most recently, the South East Queensland Schools PPP Program, State Schools of Tomorrow Program (SSOT), Building the Education Revolution (BER), and the Year 7 Flying Start Pilot Program (in 2011, 20 schools were chosen to pilot the move of Year 7 to high school). In 2013, a POE Pilot Study was developed and undertaken by DETE staff, with the assistance of an externally sourced architect with a high level of knowledge in the design of DETE facilities, with the aim of developing a *Post Occupancy Evaluation Tool* for the Department that would provide a consistent data set to inform the future design of DETE facilities. The POEs that have been undertaken to date have provided the Department with data in relation to the following criteria: functional performance; technical and environmental performance; quality; value for money; and, fit-for-purpose. However, each POE commission has collated the data sets utilising different methodologies and by sorting the criteria under a variety of headings. Therefore, whilst the POEs have provided the Department with excellent data, the varying methodologies used have precluded the Department, to date, from being able to accurately compare data across programs over time. One of the key objectives for DETE is to develop a *Post Occupancy Evaluation Tool*, with the requisite tools and templates, in conjunction with Queensland University of Technology (QUT), which will enable the Department to collect data in a consistent manner thus enabling data comparisons across programs over time.

The Department's aim is to deliver high quality, fit-for-purpose and future focused educational facilities. Further, recent research has shown that there is a link between quality learning environments and improved educational outcomes (Institute for Social Research, 2013). Therefore, another key objective for DETE is for the *Post Occupancy Evaluation Tool* to provide the Department with data that will inform both the Capital Works Planning Process and the Department's *Design Standards for DETE Facilities* suite of documentation which sets the framework for a consistent approach to the delivery and refurbishment of innovative and cost effective educational facilities in Queensland. Research and pilot studies undertaken by DETE suggest that the incorporation of findings from POEs as a key input into the *Design Standards Review Framework* process, and any subsequent amendments to the Capital Works Planning process and the suite of Design Standards, will improve the quality of the learning environments, increase the sustainability and reduce the long-term maintenance costs of infrastructure delivered across the Capital Works Delivery programs. Moreover, the proposed POE process will also complement benchmarking studies on Capital Works programs.

A central aim achieved in this project was to develop a *Post Occupancy Evaluation Tool* to professionalise POEs through standardised methods and instruments leading to diagnostic analysis of DETE Capital Works.

Ongoing partnership between QUT and DETE

QUT has a strong investment in work integrated learning and has ambitions for all students to engage in a form of this activity during their studies. However, this seed pilot offers QUT an opportunity to partner with DETE in a long-term relationship that will (i) provide students with real opportunities to build POE capacity within the professions of architecture and construction management; (ii) allow QUT to develop the resources and infrastructure to support this relationship; (iii) meet the business needs of DETE through standardisation and completion of POEs; and (iv) ultimately provide students with paid co-operative education experience funded by DETE and brokered by QUT (Garavan & Murphy, 2001). As the intent is for DETE to fund the students to conduct the POEs with QUT as the broker, the co-operative education opportunity is associated with paid employment. Therefore, this activity is outside the usual business of the university and requires external funding to establish the Centre and the standardised methodology, instruments and mobile application for data collection.

Seed project aims and objectives

Project aims

The aim of this seed project is to professionalise POEs through standardised methods and instruments leading to diagnostic analysis of DETE Capital Works and provide an accessible resource to integrate POEs into the built environment curriculum at universities.

Project objectives

There are three main seed project objectives: to professionalise POEs; curriculum renewal; and to prepare a Centre for Co-operative Education for deployment. These are described in more detail below.

Professionalise Post Occupancy Evaluations

This partnership between QUT and DETE will assess the functional, technical and environmental performance of buildings designed and constructed under a number of DETE Capital Works Delivery programs, including ‘A Flying Start for Queensland Children’ which is a significant program of works to enable the movement of Year 7 students into high school across Queensland commencing in 2015. Between 12 to 18 months after project handover, university students will be training to conduct POEs on selected buildings across the range of programs being delivered by DETE.

Curriculum renewal

As QUT academic staff and students will be engaged in facilitating and conducting standardised POEs, there is an important opportunity to bring this applied research activity back into built environment courses through curriculum renewal. This offers an excellent opportunity to reinvigorate the ways in which POEs are viewed within the curriculum structure and the built environment academic community and will establish valid datasets for future research, such as building design standards.

Prepare a Co-operative Education Centre for deployment

The purpose of this Centre is to support the development of POEs as WIL activities for fourth year pre-professional students in the disciplines of architecture and construction management. As paid co-operative education is beyond the remit of QUT as a higher education institution, DETE has agreed to pay students for their time with QUT as the employment broker. Therefore, this activity offers a co-curriculum benefit of paid employment whereby students undertake real world professional activities: POEs. This paid employment will assist students to overcome the hardships that offer a barrier to student engagement (Moore, Ferns & Peach, 2012).

Methodology

Scope and approach

Based on the process model for POEs by Preiser (1995), this project builds through a number of stages as shown in the diagram below

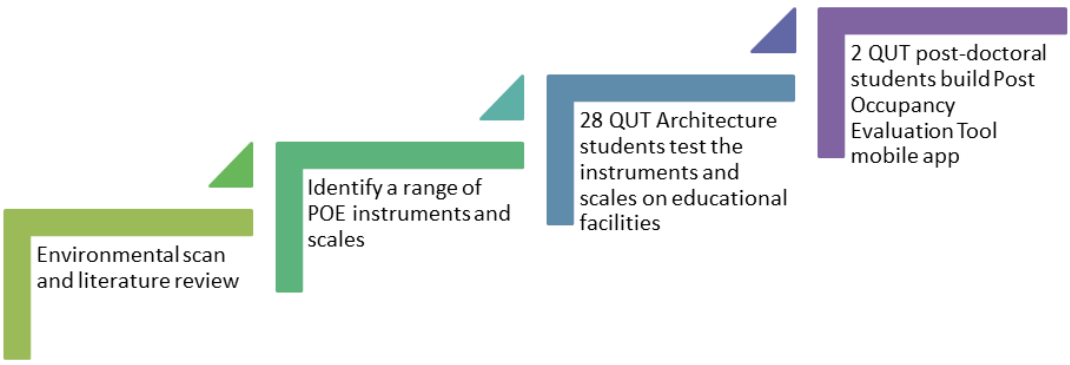


Figure 1 Methodology for Post Occupancy Evaluations

A structured approach will be undertaken to conduct POEs: in-depth investigation on the functional, technical and environmental performance of DETE educational facilities utilising a developed methodology which may include: walk-through building performance reviews, interviews, survey questionnaires, photographic or video recordings, physical measurements. Investigations will typically involve a number of buildings of the same type

with key personnel, group meetings with end-users, as well as inspections in which both positive and negative aspects of building performance are documented photographically.

The key questions that drive this project's approach are:

1. can POEs be professionalised through a standardised approach to instrument development and data capture;
2. will independent evaluation and a standardised approach to POEs to be conducted on DETE educational facilities lead to improved Design Standards.

This will be achieved through:

a. an environmental scan and literature review;
b. identifying a range of POE instruments and scales including existing examples of POEs conducted on DETE Capital Works program. This project will take advantage of POE work already conducted by DETE through various internal and external parties;
c. engaging 28 QUT Architecture students to test the instruments and scales on educational facilities;
d. engaging two doctoral graduates from QUT to build a mobile application to professionalise POEs.

Methods used to prepare the instruments

Environmental scan

The environmental scan was undertaken to identify and review POE literature and instruments developed nationally and internationally for schools with the view to informing the development of a standardised *Post Occupancy Evaluation Tool* to be applied in the OLT project, which seeks to develop co-operative education in the built environment through POE of DETE educational facilities.

Specifically, the scan critically examined the literature to:

1. identify current theorising and practices in POEs
2. identify measures of characteristics
3. ascertain the role of digital technology in POEs

Key terms were used to search academic database (such as QUT Quick Find, and ERIC) to locate literature. These terms include: POE, methodology, education facilities, and technology.

Selection of existing Post Occupancy Evaluations for testing by Masters of Architecture students

After consultation with project stakeholders including DETE three POE tools were selected for testing: one by Sanoff; one used by DETE; and the OECD/CELE POE implemented as follows:

- one *unoccupied* - measures present/absent/performance-condition (adapted scale)
- one *occupied* - measures quality and satisfaction in different areas that influence learning (adapted criteria and scale form Sarnoff, DETE POE criteria, OECD)
- one *occupied* - using OECD categories - so the findings could be easily mapped between OECD user questionnaires.

It was also decided to test two different types of user questionnaires, again to see what they tell us and difference in information. These are:

- two OECD/CELE:
    - one student questionnaire
    - one teacher questionnaire
- Sanoff's School Building Rating Scale: for all users - teachers, students and administration

In all, students were provided with six tools. Three of the tools were walk through observation surveys, two were questionnaires while the last tool was a building survey.

Testing by Masters of Architecture students

Testing was undertaken by 28 postgraduate Masters of Architecture students who used the tools as they were or with modification to suit the educational context. In addition to reporting on the evaluation of the selected spaces the students also provided a critical review of the instruments.

Methods used to analyse the students' projects

The testing yielded 28 student's POE reports. An excel spreadsheet was completed to report on the students' evaluation of the six tools. These included:

- three of the tools were walk through observation surveys;
- two were questionnaires; and
- the last tool was a building survey.

The tools were listed across the page in a heading.

Students (numbered 1 – 28) were listed vertically and colour coded according to the group they were in. Reports were further analysed and the table completed according to the criteria students used from each tool to analyse the buildings.

Analysis was also made of the student's feedback about the tools.

Group 1 – comprised four students. Students utilised five of the tools provided and created another custom tool which evaluated success of Gardens Point (GP) 'D' Block against the criteria listed in the project brief.

Group 2 – comprised six students. Modifications were made to three of the tools, so the questions in a walk through observation tool more closely aligned with student and staff questionnaires. GP 'D' block was the focus of evaluation for this group.

Group 3 – comprised four students. Two walk through observation tools were modified along with a student questionnaire and a building survey to do a POE on GP 'D' block. This group also chose to create questions to use in semi-formal interviews of occupants.

Group 4 – comprised six students. Students of this group used various tools and collectively created two custom tools. One a general survey and the other a custom survey in which participants are asked to list three advantages or positives of the building and to list three disadvantages or negatives of the building. This group also evaluated GP 'D' block.

Group 5 – comprised four students. This group used an observational walk through tool, a staff questionnaire and created a custom survey. They utilised these tools to do a POE of the Caboolture Hub.

Group 6 – comprised four students. Students worked on individual projects, however, used a walk through observation, a custom questionnaire and "3 + 3" survey – see custom survey in *Group 4*.

The analysis of the student work informed the development of a draft walk through tool as well as student and teacher questionnaire tools. These were further refined through discussion with major project participants, particularly DETE.

Project impact, dissemination and evaluation

The impact of this pilot is through:

- develop a *Post Occupancy Evaluation mobile application to collect data and* to inform the planning and design of DETE Capital Works projects;
- use existing scholarly research and completed DETE POEs as a foundation to inform the POE protocols;
- provide DETE, through the partnership with QUT, with a *Post Occupancy Evaluation Too l*which, when implemented, will in turn provide DETE with independently produced POE data in relation to set criteria, including the functional, technical and environmental performance, for completed DETE Capital Works Delivery projects;

Dissemination of this pilot will occur through the progressing of standardised methodology integrated into DETE Capital Works Design Standards and planning activities and opening up this conversation to a wider audience of stakeholders through forums offered at both QUT and DETE (Gannaway, Hinton, Berry & Moore, 2011). This will include:

- disseminate the *Post Occupancy Evaluation Tool* to other government and educational enterprises who implement Capital Works projects; and
- build a foundation in POEs leading to future research grant applications to further investigate the relationship between buildings and learning outcomes in an educational context.

The initial evaluation will be through use by practitioners within the built environment. The take-up rate, use of surveys, storage of information will form the baseline for future improvements and new versions of this mobile application.

Environmental scan and literature review

The purpose of the environmental scan is to aid in the development of a standardised *Post Occupancy Evaluation Tool*. This tool will be applied in the OLT project, which seeks to develop co-operative education in the built environment through POE of DETE educational facilities.

The scan performed a critical examination of the literature to:

1. identify current theorising and practices in POEs
2. identify measures of characteristics
3. ascertain the role of digital technology in POEs

Key terms were used to search academic database (such as QUT Quick Find, and ERIC) to locate literature. These terms include: POE, methodology, education facilities and technology. The following section is offered as an overview of POE literature.

Over the past four decades, efforts have been made to standardise the evaluation of educational facilities. From reviews of the various literature on school POEs, the trend to link environment with pedagogy is emergent but requires further development. There are multiple methods employed and vast array of criteria used to evaluate school environment in relation to learning. They provide an important basis for generating a digital application to aid conducting and housing POE information.

The first theme that emerged from the literature was the overall support of POEs as a valuable concept to support Design Principles for all facilities including educational ones. For example, the Council of Educational Facility Planners International (CEFPI) in 1986 outlined the role and purpose of POEs:

> "the purpose of the appraisal includes: performance of a POE, the formulation of a permanent record to document deterioration, to highlight specific appraisal needs, examine the need for new facilities or evaluate the need for renovation, as well as to serve as an instructional tool."

Cleveland and Fisher (2014) would extend this purpose of POEs to suggest that evaluation of learning spaces enable the collection of evidence to inform future decisions about design and use of learning spaces to support pedagogical objectives. This takes the purpose beyond informing Design Principles to the extent that feedback could inform curriculum design and delivery through leaning spaces (Lackney 2001, p. 2).

A second theme is that POEs transcend disciplinary borders and move beyond the built environment and Design Principles. According to Zimring and Reizenstein (1980, p. 433) conducting POEs offers a number of benefits which include: (i) aid communications among stakeholders such as designers, clients, end-users and others; (ii) creates mechanisms for quality monitoring, similar to using student testing to identify under-performing schools, where decision-makers are notified when a building does not reach a given standard; (iii) the State of POE in Educational Design Practice Supports fine-tuning, settling-in and renovation of existing settings; (iv) provides data that informs specific future decisions; (v) supports the improvement of building delivery and facility management processes; (vi) supports development of policy as reflected in design and planning guides; and (vii) accelerates organisational learning by allowing decision-makers to build on successes and not repeat failures.

A further benefit is that although this current project is focused on educational facilities, POEs are in fact multi-disciplinary and span across disciplines that may include psychology, architecture, urban planning, human geography, urban sociology (Dalton, Kuliga & Holscher, 2013; Stokols, 1995). POEs offer an opportunity to examine the effective for humans who occupy a building to determine if the designed environment meets their needs. From a social design perspective, the "program" is the criterion which is being judged (Gifford, 2007, p. 548). POEs are inclusive of a broad range of methods that are rigorously applied

and objectively applied to investigate the performance of the designed environments from the perspective of their occupants. More recently, POEs have been expanded to draw in the physical and environment performance of a building, for example to include energy consumption (Dalton, Kuliga & Holscher, 2013, p. 163; Strelitz, 2013, p. 194).

According to Zimmerman and Martin (2001, p. 168) there are both benefits and barriers to POEs. As mentioned earlier, the benefits include a closer alignment between human needs and building designs, they offer opportunities to reduce wasted design elements for space and energy consumption, and ultimately inform building design principles for the future. The barriers stem from the completed relationship between the designers, builders and occupants, paucity of reliable indicators and perhaps unrealistic expectations of how this final element would play out in the end.

A third theme is that the modern application of POEs extends well beyond the frequent users of the facilities to those participants who are infrequent users. Dalton and colleagues (2013) noted that visitor or temporary users' experiences are rarely captured. One significant POE project was the PROBE (post occupancy review of buildings and their engineering) practices across 1995 to 2002 (Jaunzens, Cohen, Watson, Maunsell, & Picton , 2002). This project went beyond the usual participants, office workers, and extended the participation to include other staff, visitors, cleaners, security, contractors and passers-by (Leaman & Bordass, 2001, p. 134). While this may offer the optimal approach to POEs participant groups, the more common approach is to focus on the general occupant rather than the exceptional building occupant (Dalton, Kuliga & Holscher, 2013, p. 164).

A final theme is consideration that POEs are actually part of a broader approach. For example, many POEs form part of larger framework of Building performance evaluation (BPE) model put forth by Preiser and Vischer (2006, p. 3), which extends beyond the building delivery point, post occupancy point and all the way through to the building's life cycle. If you consider that BPE transcends POEs to encompass conceptual design to recycling or adaptive reuse of building types, this then makes structured data collection through POEs to be pivotal to the development of structured approaches to BPE (Preiser & Wang, 2006, p. 195).

In summary, it remains clear that whether POEs stand alone or are part of a broader BPE model, standardisation of POEs through the use of a mobile application offers a structured and systematic way to collect data that may ultimately informDesign Principles for educational facilities. The true benefits will be realised when the data collected through the Post Occupancy Evaluation Tools mobile application are harvested and analysed. This will be the true test to determine if this structured and systematic approach can aid Design Principles and perhaps extend into BPE models and other research.

Functionality of the Post Occupancy Evaluation Tool

This mobile application is a joint effort to address the issue of collecting standardised information about education facilities to offer comparative analysis of outcomes and inform the future Design Standards.

The survey instruments located within this mobile application includes the following:

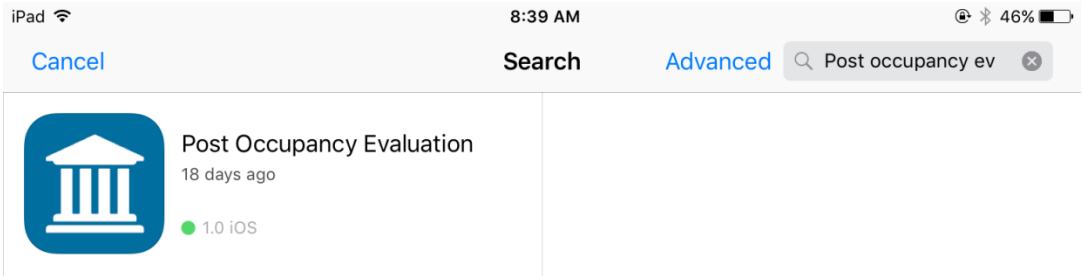
- School Building Survey
- School Room Survey
- Student Survey
- Teacher Survey

The functionality of this mobile application includes the following:

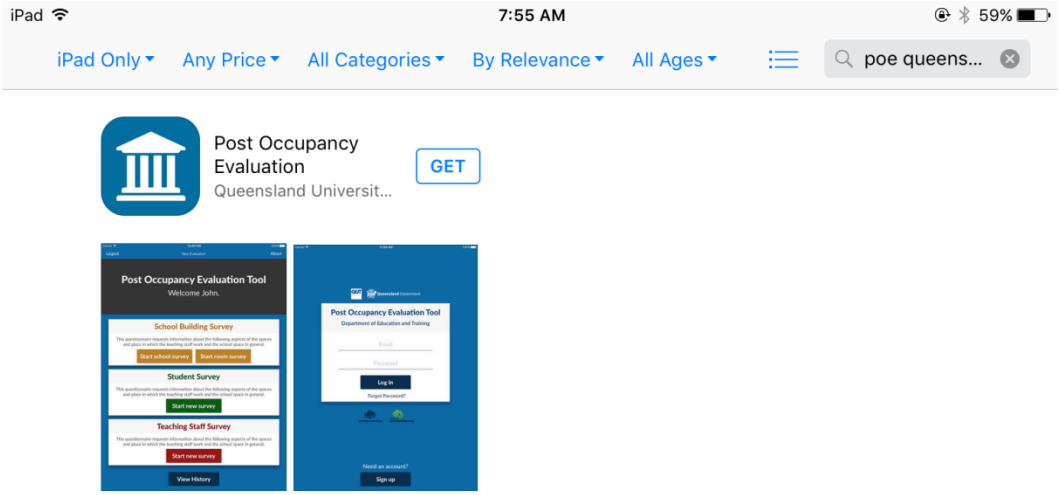
- Start a new survey from a choice of four
- Surveys can be saved completed or partially completed
- History page offers a list of completed or partially completed surveys
- Storage facility available for the data collected
- Data collected includes:
    - Response to Likert Scale questions
    - Open text response boxes
    - Photo capture
    - Video capture
- Data may be extracted through:
    - Download a csv file
    - Download a PDF and send by email
- Feedback point by email

Location of the Post Occupancy Evaluation Tool on iTunes

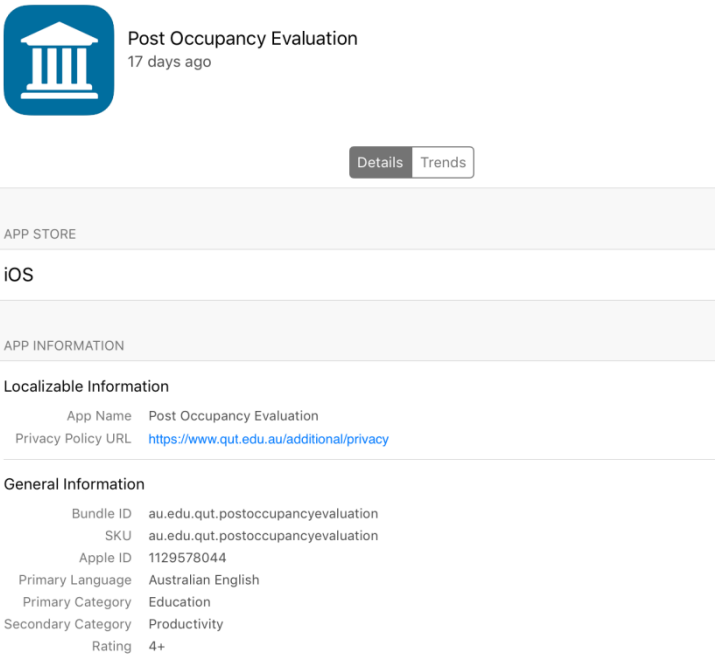
To locate the POE mobile application, go to iTunes and search for ‘post occupancy evaluation’.



The free mobile application will be available for download.

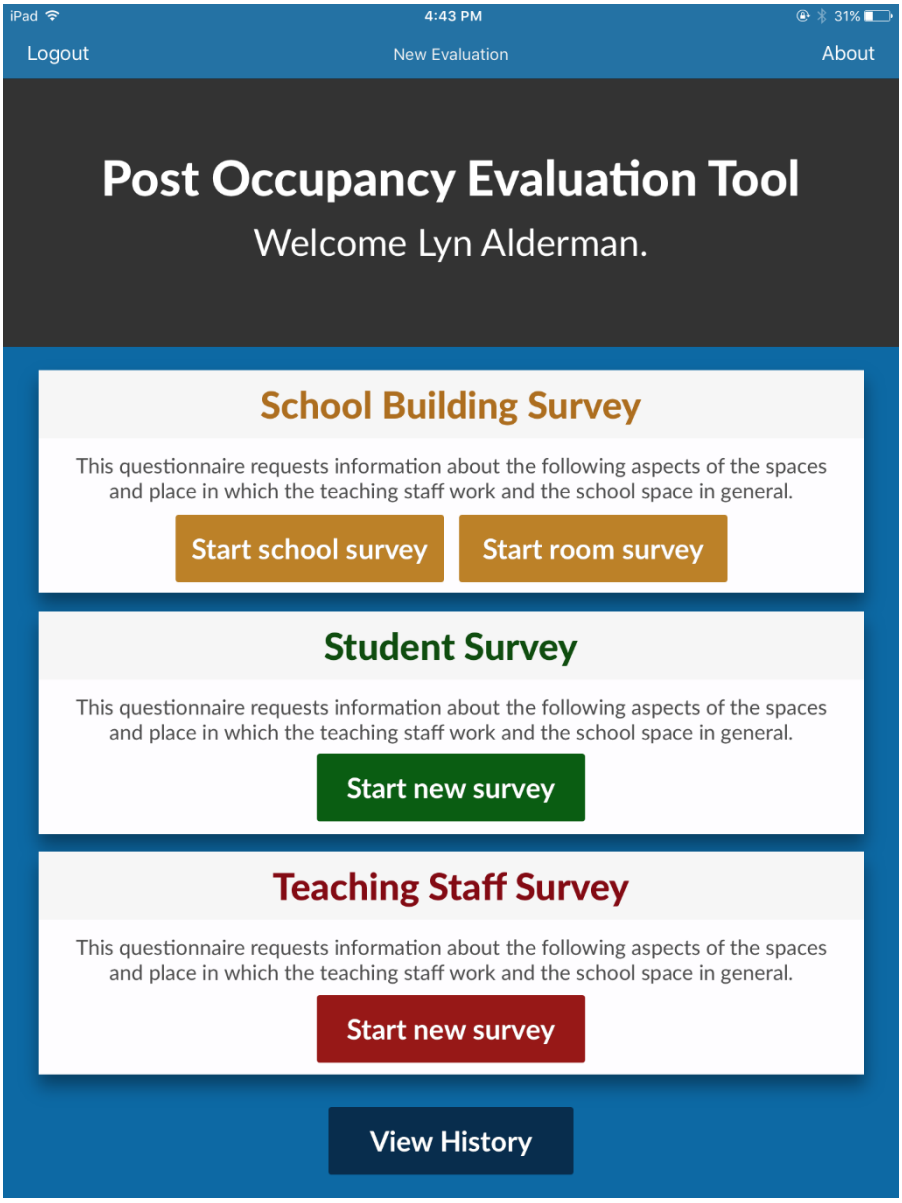


The following example provides information about the mobile application details.



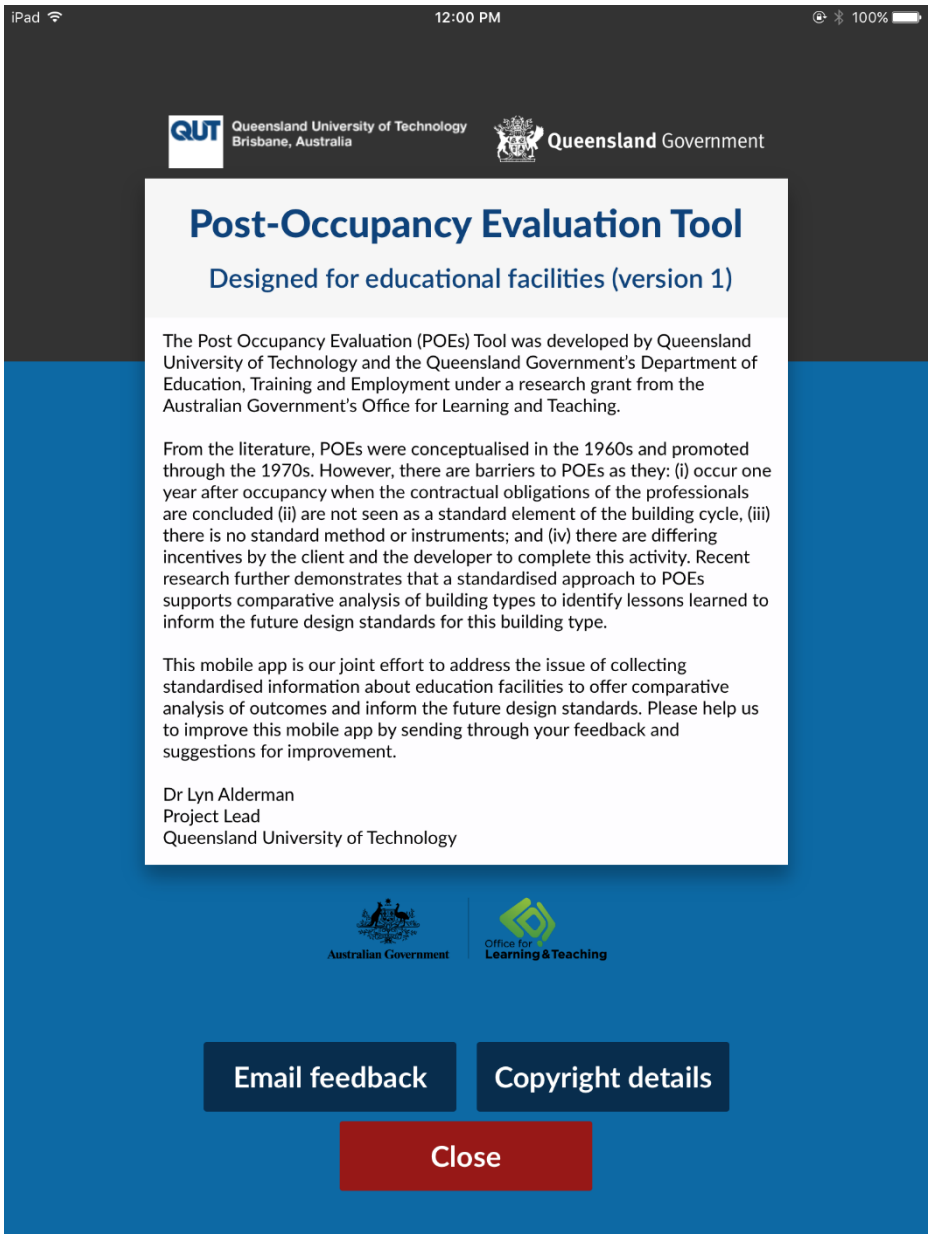
Example of Post Occupancy Evaluation Tool mobile application home screen

The home screen offers the POE assessor an opportunity to view all four surveys including a School Survey, Room Survey, Student Survey and Teaching Staff Survey together with the opportunity to view the history of the surveys for this device.



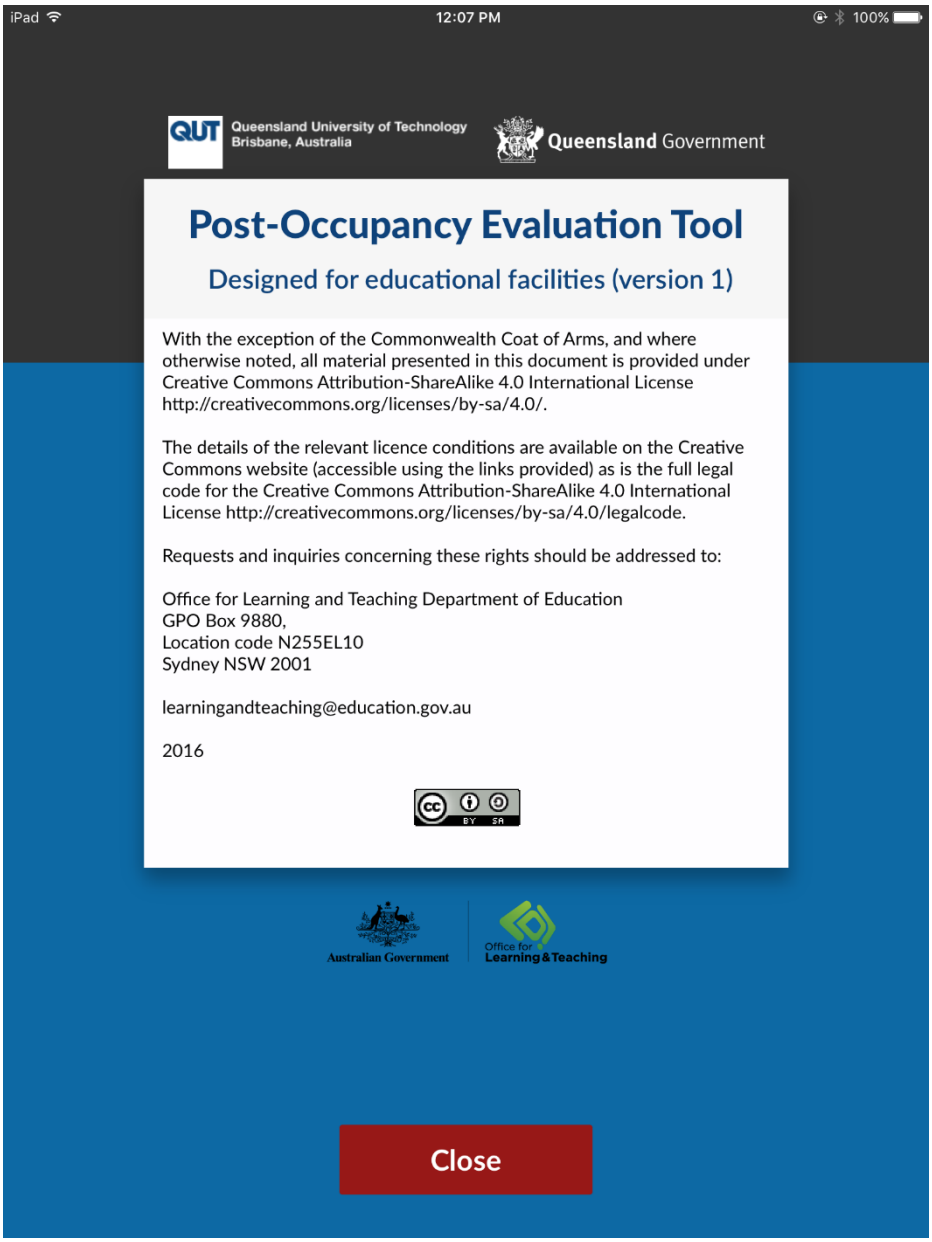
Example of the About page

This page identifies the key partners and funding authority for this mobile application together with a link to the 'copyright details'. In addition, it invites feedback to inform any future development.



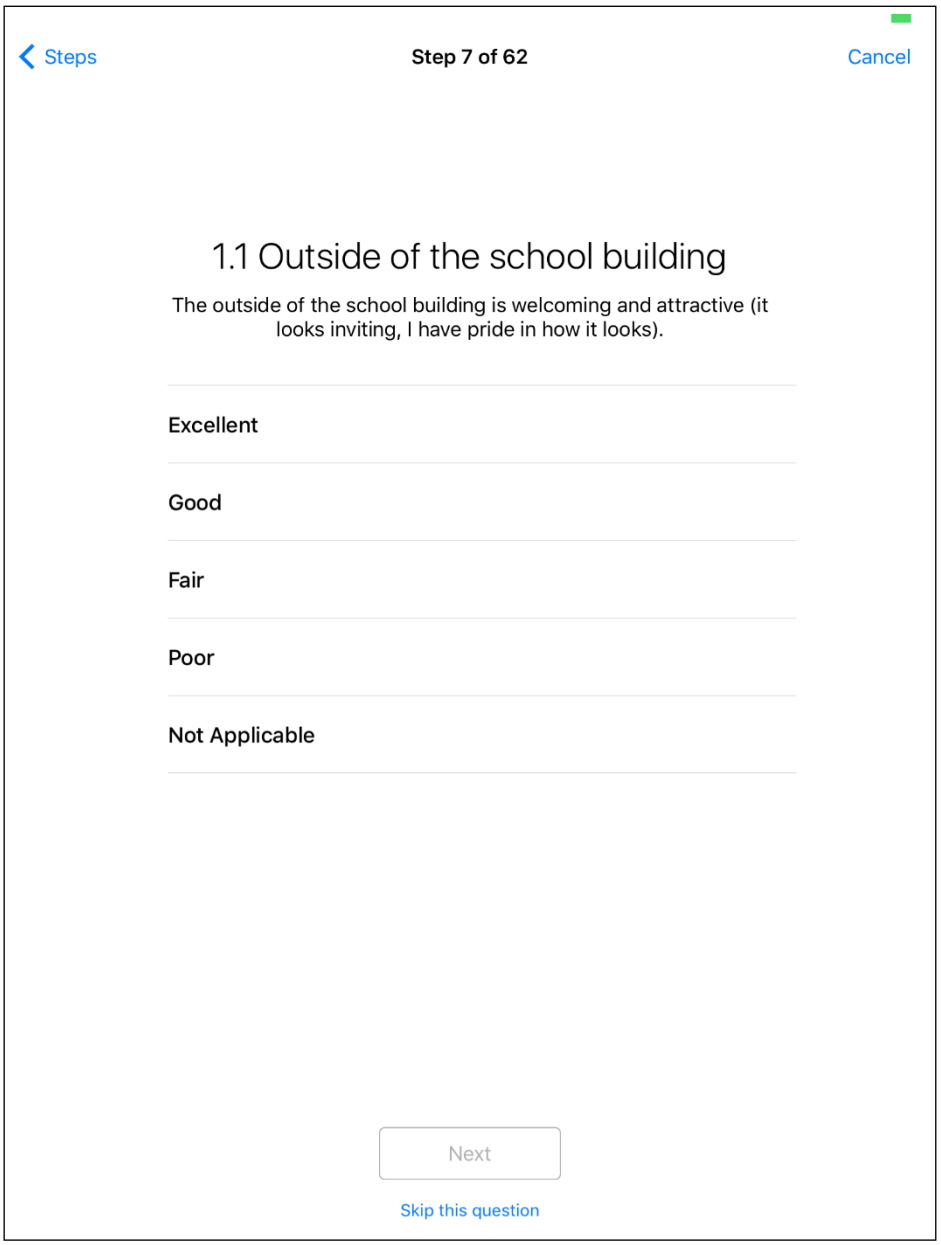
Example of the Copyright page

This page identifies that this mobile application is provided under Creative Commons Attribution-ShareAlike 4.0 International License.



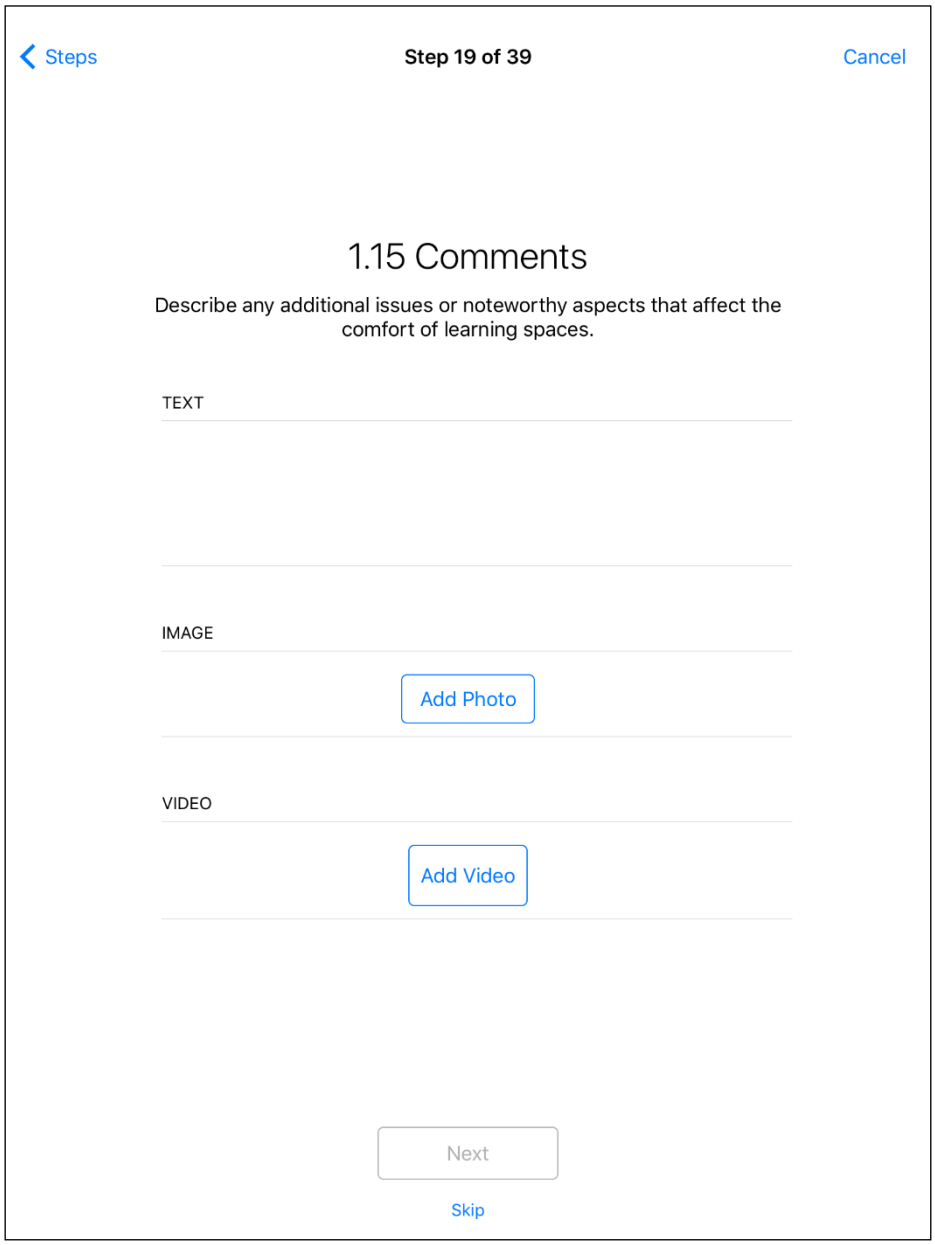
Example of a survey question with the four-point Likert Scale

This step offers the function of asking the POE assessor three options: first, to click on the four-point Likert Scale in answer to the question; second, to identify whether the question is 'not applicable' or third, to 'skip this question'.



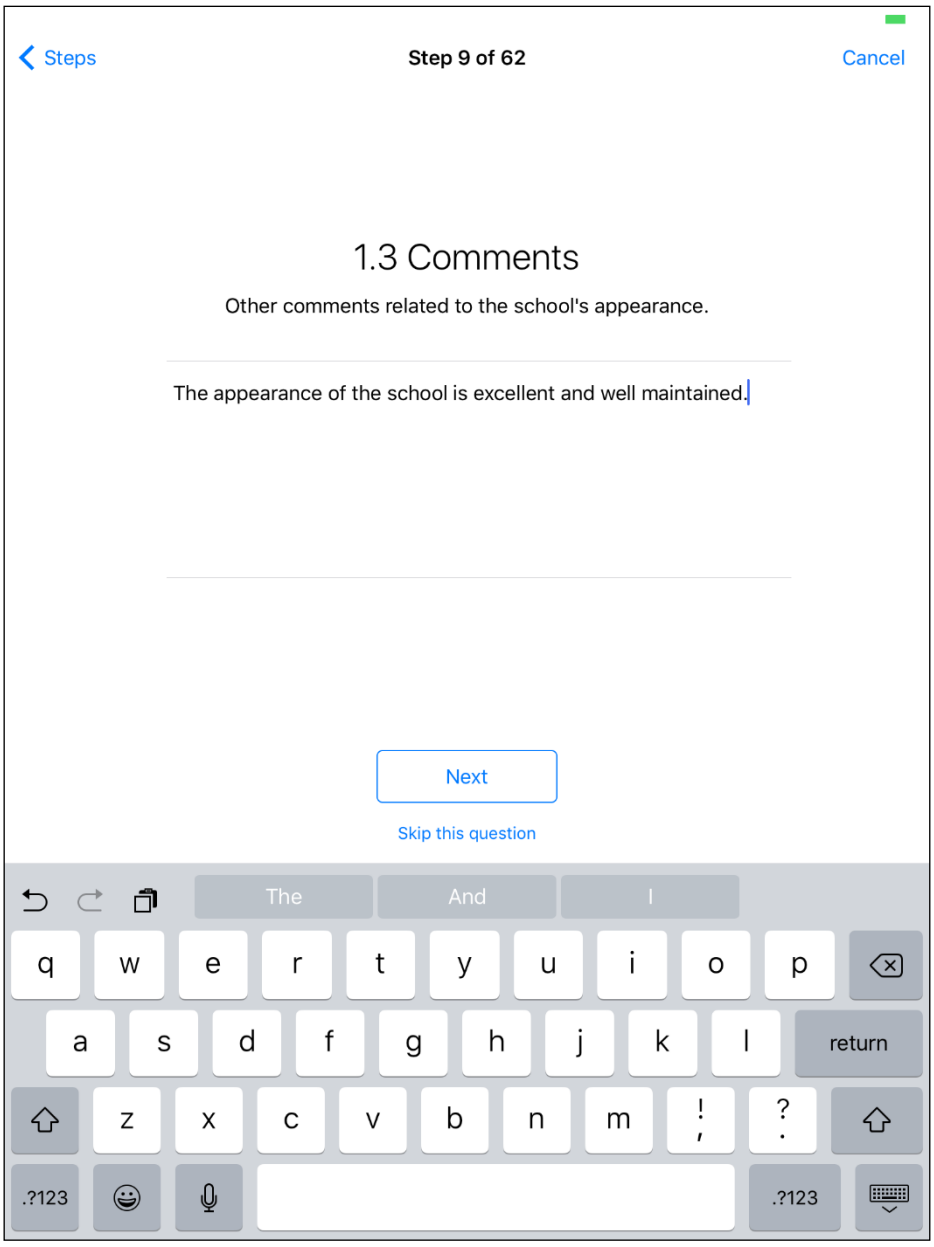
Example of an open-ended question with photo and video functionality

This step offers the function of asking the POE assessor three options: first, to click and enter text in answer to the question; second, to capture a photo; and/or third, to capture a video.



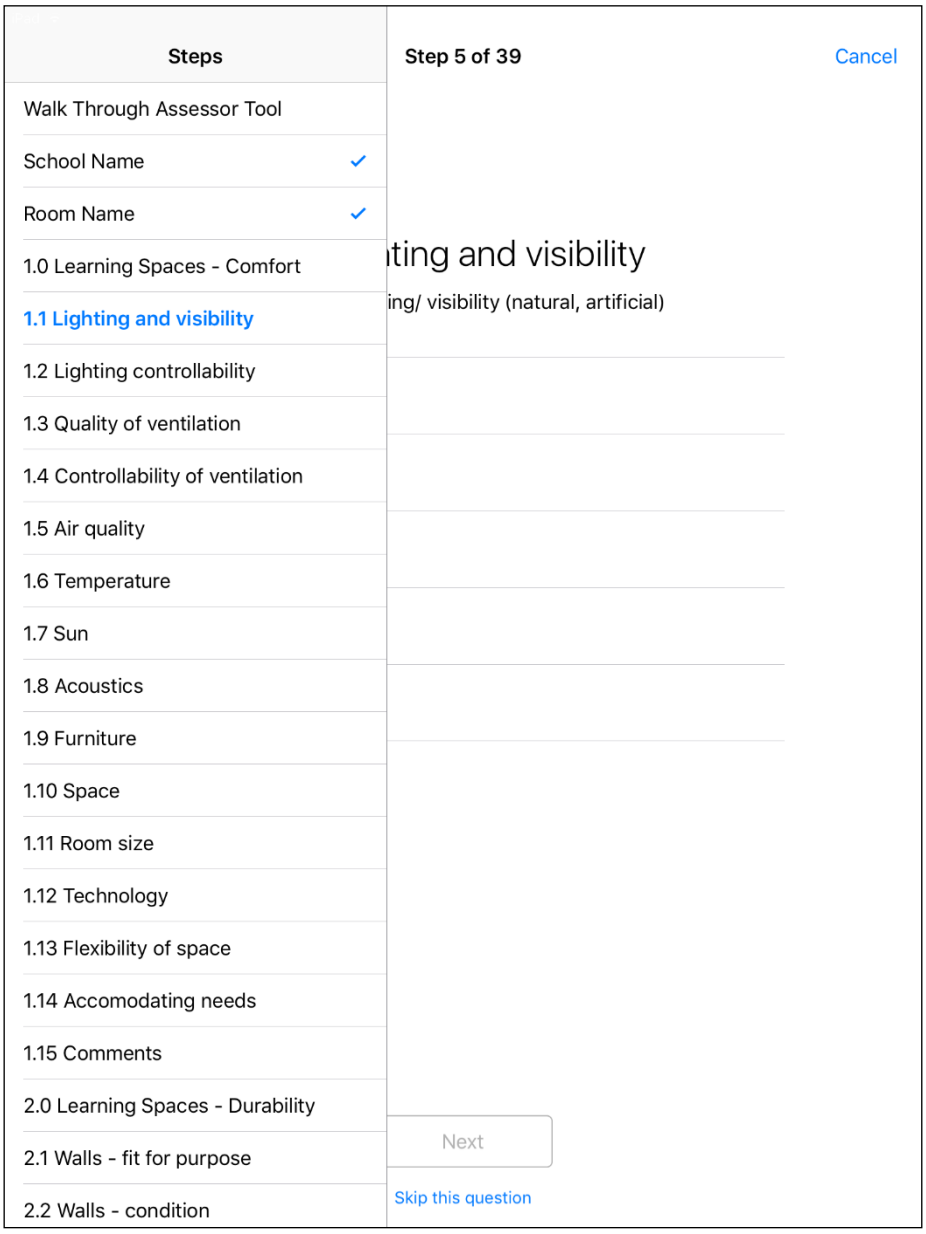
Example of an open-ended survey question

When the POE assessor clicks on the 'text' field, a keyboard pops up to allow data entry. When data entry is complete, simply click 'next' to move to the next question.



Example of how to navigate through a survey

The ‘steps’ icon on the top left-hand side of the screen offers the POE assessor the opportunity to review the complete list of questions. Questions that have been answered are indicated with a ‘tick’. The current step is highlighted in bold light blue. The POE assessor may click on any question to quickly move to that point either earlier or later within the current survey.



Key findings

Recommendations

There are four main recommendations that emerge from this seed project and these include: (1) development of a mobile application to collect standardised data from POEs; (2) the use of POE data collection to inform Design Standards for educational facilities; (3) the POE mobile application is a valuable tool for use within the built environment curriculum; and (4) a Co-operative Education Centre ready for deployment. These are described in detail below.

Mobile Application to collect standardised data from Post Occupancy Evaluations

This seed project developed a prototype mobile application to aid in the consistent data collection and storage of information arising from the POEs. This Post Occupancy Evaluation Tool mobile application was freely available from the Apple Store from March 2016 and has the potential to impact design principles for education facilities worldwide. This project represents a partnership between QUT together with DETE, who worked together with 28 QUT postgraduate Architecture students to test the validity of the instruments that informed the mobile application. This partnership demonstrates how university and industry partnerships can work closely together to solve real problems within a tight budget and a one-year timeframe.

Recommendation 1: *share the Post Occupancy Evaluation Tool through the Apple Store free of charge to all users.*

Professionalise Post Occupancy Evaluations to inform building Design Standards

Assessors, teachers and students now have a mobile application to support the standardised collection of data for POEs. This standardised data then offers the opportunity to conduct applied research. In turn, this will increase the usability of POEs results; which in turn provide a results database to inform DETE educational building Design Standards. Ultimately, future research into the relationship between learning outcomes and the built environment will endeavour to contribute to what is currently a gap in the literature.

Recommendation 2: *disseminate the accessibility and use of the Post Occupancy Evaluation mobile application broadly to government Capital Works departments.*

Post Occupancy Evaluation mobile application is a valuable tool for the curriculum

This mobile application will be available to universities, academics and students at no charge and this makes the integration of POEs into the curriculum of built environment programs

and courses very achievable. With more integration into the curriculum and with ease of access to a standardised instrument, it is anticipated that commissioning POEs as part of Capital Works building activities more realistic that was previously the case.

Recommendation 3: *disseminate the accessibility and use of the Post Occupancy Evaluations mobile application broadly for integration into built environment curriculum to universities.*

Co-operative Education Centre ready for deployment

The Co-operative Education Centre, where QUT students acquire professional knowledge, skills and attitudes, offers a supportive pathway from study to employment. Phase 2 of this project will establish an ongoing Co-operative Education Centre to offer paid work integrated learning opportunities to built environment students to conduct POEs on DETE educational facilities.

Recommendation 4: *continue to negotiate Phase 2 of this project with DETE for deployment of the Co-operative Education Centre to employ QUT pre-professional students from the built environment disciplines to conduct Post Occupancy Evaluations on educational facilities.*

The successful development of a Post Occupancy Evaluation Tool that informs the planning and design of DETE Capital Works projects and applicable to any environment to ensure that POEs are completed in a consistent, ethical manner and safe manner.

This partnership developed a *Post Occupancy Evaluation tool*to apply standardised methods and instruments to conduct POEs of educational facilities leading to improved building design principles to support learning.

The technology supporting this tool is a mobile application to aid in the consistent data collection and storage of information arising from these evaluations. This Post Occupancy Evaluation Tool mobile application was freely available from the Apple Store in March 2016 and has the potential to impact design principles for education facilities worldwide. This application was designed by two post-doctoral students who graduate from QUT.

There were 28 higher education postgraduate students from the Masters of Architecture at QUT who were provided with an opportunity to engage with a number of POE instruments with varying Likert Scales to inform the research instruments.

A Centre for Co-operative Education is ready to be deployed as soon as DETE QLD finalise the contractual arrangements to pay students to conduct the POEs on their educational facilities.

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Appendix A: Certification

Certification by Deputy Vice-Chancellor (or equivalent)

I certify that all parts of the final report for this OLT grant/fellowship (remove as appropriate) provide an accurate representation of the implementation, impact and findings of the project, and that the report is of publishable quality.

Name: ..... Date: 25/07/16

Appendix B: Post Occupancy Evaluation Instruments

The six Post Occupancy Evaluation instruments tested were:

- No. 1 Walk Through Unoccupied Assessor Tool
- No. 2 Walk Through Assessment Tool of Learning Environments
- No. 3 Walk Through Assessor Tool
- No. 4-1 Student Questionnaire
- No. 4-2 Teaching Staff Questionnaire
- No. 5 School Building Rating Scale

A copy of each of these instruments for testing are presented below.

Walk Through Unoccupied Assessor Tool No 1

Name of learning environment:

Building being evaluated:

Rate the quality of performance of the external space for learning space users.

1.0	Site: External appearance	Poor 1	Fair 2	Good 3	Excellent 4
1.1	First Impressions - How welcoming is the school?	❍	❍	❍	❍
1.2	First Impressions – How well maintained does the school look?	❍	❍	❍	❍
1.3	External signage - How well does the signage communicate what it is?	❍	❍	❍	❍
1.4	Comments: *Write any comment or concerns you may have about the way the school appears and presents*				

2.0	Site: Layout and Circulation	Yes	No
2.1	Is the reception/assembly area adequate	❍	❍
2.2	Do the spaces in the building function well?	❍	❍
2.3	Is there sufficient space to suit varied activities	❍	❍

Building and Room

Rate the quality of performance of the internal space for learning space users.

3.0	Internal Space	Poor 1	Fair 2	Good 3	Excellent 4
3.1	Levels of Lighting/Visibility (natural, intensity of lighting)	❍	❍	❍	❍
3.2	Ventilation	❍	❍	❍	❍
3.3	Air quality and comfort (humidity and temperature)	❍	❍	❍	❍
3.4	Acoustics in the room	❍	❍	❍	❍
3.5	Wall finishes	❍	❍	❍	❍
3.6	Floor Quality	❍	❍	❍	❍
3.7	Window Quality	❍	❍	❍	❍
3.8	Door Quality	❍	❍	❍	❍
3.9	Colour selection	❍	❍	❍	❍
3.10	Comments: *Write any comment or concerns you may have about the internal space of the school built environment*				

Fixtures

Rate the quality of performance of the fixtures for Learning Space users

5.0	Storage	Poor 1	Fair 2	Good 3	Excellent 4
5.1	Durability of storage	❍	❍	❍	❍
5.2	Access to storage	❍	❍	❍	❍
5.3	Adequacy of storage space for users	❍	❍	❍	❍
5.4	Ability to cope with future developments	❍	❍	❍	❍
5.5	Comments: *Write any comment or concerns you may have about storage*				

6.0	Services	Poor 1	Fair 2	Good 3	Excellent 4
6.1	Power Points	❍	❍	❍	❍
6.2	IT Provisions (Data and Wireless)	❍	❍	❍	❍
6.3	Telephone	❍	❍	❍	❍
6.4	Controls (AC, louvers and lights)	❍	❍	❍	❍
6.5	Fans	❍	❍	❍	❍
6.6	Comments: *Write any comment or concerns you may have about the services in the learning space*				

7.0	Safety and Security	Poor 1	Fair 2	Good 3	Excellent 4
7.1	Doors and Windows	❍	❍	❍	❍
7.2	Alarms	❍	❍	❍	❍
7.3	Secure places for personal possessions (lockers)	❍	❍	❍	❍
7.4	Emergency Exit signs	❍	❍	❍	❍
7.5	Fire extingushers	❍	❍	❍	❍
7.6	Comments: *Write any comment or concerns you may have about the safety and security elements in the learning space*				

8.0	Privacy - Space for staff to:	Poor 1	Fair 2	Good 3	Excellent 4
8.1	Hold interviews with students, parents etc	❍	❍	❍	❍
8.2	Make professional phone calls	❍	❍	❍	❍
8.3	Do lesson preparation	❍	❍	❍	❍
8.4	Comments: *Write any comment or concerns you may have about the privacy in the learning space*				

9.0	Service Delivery	Poor 1	Fair 2	Good 3	Excellent 4
9.1	Effectiveness of the space in meeting curriculum/unit needs	❍	❍	❍	❍
9.2	Flexibility to provide for varying teaching styles (whole class, small groups)	❍	❍	❍	❍
9.3	Comments: *Write any comment or concerns you may have about the privacy in the learning space*				

10.0	Other comments about the Learning Space

11.0	Rate how well the learning space meets the purpose for which it was designed	Poor									Excellent
		1	2	3	4	5	6	7	8	9	10

Walk Through Assessment Tool of Learning Environments No 2

Name of learning environment:

Building being evaluated:

How much do you agree or disagree with the following statements about entering and moving around the learning space?

1.0	Accessibility	Strongly Disagree	Disagree	Agree	Strongly Agree
1.1	It is easy to get to the main entrance from the street (i.e. through accessible walkways)	❍	❍	❍	❍
1.2	It is easy to get from the inside to the outside of the building.	❍	❍	❍	❍
1.3	It is easy to get from one floor within the building to another.	❍	❍	❍	❍
1.4	It is easy to move along the same floor (i.e. there are no congested corridors or changes in the levels in the building, which makes moving around difficult).	❍	❍	❍	❍
1.5	The routes or pathways around the **inside** of the building are well signposted or easy to identify for visitors or newcomers.	❍	❍	❍	❍
1.6	The routes or pathways **outside** the building are well signposted or easy to identify for visitors or newcomers	❍	❍	❍	❍
1.7	The **main entrance** is well signposted or easy to identify for visitors or newcomers.	❍	❍	❍	❍
1.8	There is sufficient room to drop off and pick up students, and for others to drive through	❍	❍	❍	❍
1.9	The school is accessible for students with special needs, especially drop-off points.	❍	❍	❍	❍
1.10	Comments: Please describe positive or negatives about the accessibility of the learning environment or areas for improvements				

How much do you agree or disagree with the following statement about entering and moving around the learning space?

2.0	Learning Spaces	Strongly Disagree	Disagree	Agree	Strongly Agree
2.1	There is plenty of space for students to work at a desk.	❍	❍	❍	❍
2.2	There is plenty of space for students to move around in the classroom and work with others during class.	❍	❍	❍	❍
2.3	Students have access to functioning computers with Internet access in the classroom.	❍	❍	❍	❍
2.4	The spaces in general are large enough to accommodate the number of students being taught.	❍	❍	❍	❍
2.5	Furniture can be easily moved and arranged to accommodate different learning activities (e.g. activities in large or small groups; seating arrangements in circles, rows or groups).	❍	❍	❍	❍
2.6	There are different areas for students to pursue different learning activities (e.g. quiet space for individual study or reading; space for computer work; space for group work).	❍	❍	❍	❍
2.7	There are functioning technology for teaching – (computer, digital whiteboard, projectors)	❍	❍	❍	❍
2.8	Classrooms are accessible for students with special needs. • Mobility impairments • Sensory (hearing, visual impairments	❍	❍	❍	❍
2.9	Classrooms are equipped for students with special needs.	❍	❍	❍	❍
2.10	Comment: Please describe positives or negatives about the space for learning and any areas requiring improvement.				

How much do you agree or disagree with the following statement about the comfort of the learning space?

3.0	Comfort				
3A.	**Temperature and air quality in the classroom**	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
3A.1	The classroom has good air circulation (i.e. can breathe easily, it is not stuffy or too breezy).	❍	❍	❍	❍
3A.2	The temperature in my classroom is comfortable in Winter.	❍	❍	❍	❍
3A.3	The temperature in my classroom is comfortable in Summer.	❍	❍	❍	❍
3A.4	The ventilation and temperature in the classroom can be controlled (i.e. you can open and close windows; switch on fans, air conditioners or heaters; or adjust the thermostat).	❍	❍	❍	❍
3A.5	Comment : Please describe positives or negatives about the space for learning and any areas requiring improvement.				

How much do you agree or disagree with the following statement about the comfort of the learning space?

3B.	**Noise in the classroom**	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
3B.1	There is not too much noise coming from **inside** the classroom to disrupt student's work.	❍	❍	❍	❍
3B.2	There is not too much noise coming from **outside** the room to disrupt student's work.	❍	❍	❍	❍
3B.3	Sound echoes too much in the classroom	❍	❍	❍	❍
3B.4	Comment : Please describe positives or negatives about the space for learning and any areas requiring improvement.				

How much do you agree or disagree with the following statement about the comfort of the learning space?

3C.	**Lighting in the classroom**	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
3C.1	There is natural light from the windows.	❍	❍	❍	❍
3C.2	The classroom has good lighting (i.e. it is not too dark or too bright), so that students can work comfortably.	❍	❍	❍	❍
3C.3	Lighting levels in the classroom can be controlled (i.e. you can turn the lights on and off, open and close shutters/blinds to control natural light).	❍	❍	❍	❍
3C.4	Comment : Please describe positives or negatives about the space for learning and any areas requiring improvement.				

How much do you agree or disagree with the following statement about the comfort of the learning space?

3D.	Furniture in the classroom	Strongly Disagree	Disagree	Agree	Strongly Agree
3D.1	Students can sit at the desks comfortably.	❍	❍	❍	❍
3D.2	The chairs are comfortable to sit on.	❍	❍	❍	❍
3D.4	Comment : Please describe positives or negatives about the space for learning and any areas requiring improvement.				

How much do you agree or disagree with the following statement about the visual appearance of the learning space?

4.0	School's visual appearance	Strongly Disagree	Disagree	Agree	Strongly Agree
4.1	The **outside** of the school building is welcoming and attractive.	❍	❍	❍	❍
4.2	The **inside** of the school building is welcoming and attractive.	❍	❍	❍	❍
4.3	The **classroom** is covered in displays of student's work and other decorations, which makes it look attractive.	❍	❍	❍	❍
4.4	The school building conveys to the community the importance of learning.	❍	❍	❍	❍
4.5	Comment : Please describe positives or negatives about the space for learning and any areas requiring improvement.				

How much do you agree or disagree with the following statement about the safety of the learning space?

5.0	Safety	Yes	No
5.1	Is there a plan showing emergency exits in each classroom?	❍	❍
5.2	Are fire extinguishers located near each classroom?	❍	❍
5.3	Is there a functioning fire alarm in the school/campus?	❍	❍
5.4	Is there security personnel within the school/campus?	❍	❍
5.5	Is there security measures in the building (locks, screens)?	❍	❍

How much do you agree or disagree with the following statement about securing belongings

6.0	Secure storage of belongings	Strongly Disagree	Disagree	Agree	Strongly Agree
6.1	There are secure lockers in which students can store their belongings.	❍	❍	❍	❍
6.2	There are secure spaces in which staff can store their belongings.	❍	❍	❍	❍
4.5	Comment : Please describe positives or negatives about the space for learning and any areas requiring improvement.				

How much do you agree or disagree with the following statement about maintenance of the learning space

7.0	Maintenance	Strongly Disagree	Disagree	Agree	Strongly Agree
7.1	Classrooms are clean.	❍	❍	❍	❍
7.2	The school building and grounds generally are clean	❍	❍	❍	❍
7.3	Classrooms are well maintained (*i.e.* wall paint and floor coverings are in good condition, windows and doors function correctly and the ceiling does not leak).	❍	❍	❍	❍
7.4	The school buildings and grounds are well maintained (*i.e.* wall paint and floor coverings are in good condition, windows and doors function correctly and the ceiling does not leak).	❍	❍	❍	❍
7.5	The toilet spaces for students and staff are clean and functional.	❍	❍	❍	❍

7.6 Comment : Please describe positives or negatives about the space for learning and any areas requiring improvement.

Are the following environmentally friendly spaces or devices available at the school?

8.0	Environmental sustainability	Yes	No	I don't know
8.1	Spaces for separating waste in the classroom (e.g. paper).	❍	❍	❍
8.2	Spaces for separating waste outside the classroom (*e.g.* paper, glass, plastic, biodegradables).	❍	❍	❍
8.3	Water saving devices or spaces (e.g. automatic shut off taps, dual flush toilets, rainwater collection tanks).	❍	❍	❍
8.4	Energy saving devices or spaces (e.g. motion detectors for lights in classrooms, solar panels).	❍	❍	❍
8.5	Spaces used by the students in lessons (e.g. meters to monitor energy consumption, ecological/horticultural spaces)	❍	❍	❍

8.6 Comment : Please describe positives or negatives about the space for learning and any areas requiring improvement.

9.0	**Overall Comments - If you have any additional comments about the learning environment. If your comments relate to a particular room, please indicate the room number or name**

Walk Tour - Assessor Tool No 3

Name of learning environment:

Building being evaluated:

1.0	Site Surroundings
1.A	**Description of the Surrounds.** Provide a description of the learning environment in its setting (Geography and Demography)

Location Surroundings Rate how well the Surroundings and the Learning Environment Fit. Tick the relevant box for each statement.

1.B	School Fit	Does not fit	Fits fairly	Fits good	Fits Excellently
1.C	Does the building/school suit the pattern of the surrounding streets?	❍	❍	❍	❍
1.D	Comments: write any comment or concerns you may have about the way the learning space suits or fails to suit the context of the surrounding area.				

School External Appearance

2.0	External Appearance	Does not fit	Fits fairly	Fits good	Fits Excellently
2.1	First Impressions - How welcoming is the school	❍	❍	❍	❍
2.2	First Impressions - How well maintained is the school?	❍	❍	❍	❍
2.3	External signage - How visible is the signage of the school?	❍	❍	❍	❍
2.4	How well does the setting convey to the community, the importance of learnings?	❍	❍	❍	❍
2.5	Write any comment or concerns you may have about the external appearance of the learning space.				

3.0	Parking and entry into the site.	Yes	No	
3.1	Are there suitable public set down	❍	❍	If yes what's available If no what is missing/problematic
3.2A	Is there suitable parking for student population - for public vehicles	❍	❍	If yes what's available If no what is missing/problematic
3.2B	Is there suitable parking for student population - for bicycles	❍	❍	If yes what's available If no what is missing/problematic
3.3	Is there compliant wheelchair accessible car parking located near entry gates?	❍	❍	If yes what's available If no what is missing/problematic
3.4	Is there suitable staff & visitor car parking	❍	❍	If yes what's available If no what is missing/problematic
3.5	Are there accessible main entry gates for students with mobility needs?	❍	❍	If yes what's available If no what is missing/problematic
3.6	Is it safe for all students to get from the set down/parking to the main entry of the school?	❍	❍	If yes what's available If no what is missing/problematic

3.7 Describe the overall ease and accessibility of getting to the site from the street and parking and any aspects needing improvement?

For each item listed below, please rate your overall satisfaction with its quality.

4.0	**Massing.** Buildings are organized in form into some type of massing. Massing of the parts gives both form and meaning as well as variety to the building.	Very Unsatifactory	Unsatisfactory	Somewhat Unsatisfactory	Somewhat satisfactory	Satisfactory	Very Satisfactory
4.1	Viewed from the outside, do the building parts integrate well with each other to form pleasing appearance?	❍	❍	❍	❍	❍	❍
4.2	Is it clear what various parts of the building might mean to visitors?	❍	❍	❍	❍	❍	❍
4.3	Are the various parts of the building planned carefully in relation to one another and to the characteristics of the site?	❍	❍	❍	❍	❍	❍
4.4	Discuss the subdivision of the building into identifiable parts and how successful has the concept of massing been employed?						

For each item listed below, please rate your overall satisfaction with its quality,

5.0	**Wayfinding.** The ability for students, teachers, staff and visitors to discern routes, traffic patterns or passageways in and around the building.	Very Unsatifactory	Unsatisfactory	Somewhat Unsatisfactory	Somewhat satisfactory	Satisfactory	Very Satisfactory
5.1	Are sufficient routes, pathways, streets and passage ways provided to and around the-building?	❍	❍	❍	❍	❍	❍
5.2	Are all the circulation routes understandable and convenient for students and teachers?	❍	❍	❍	❍	❍	❍
5.3	Are all the circulation routes within the building easily understood by newcomers, visitors, and service people?	❍	❍	❍	❍	❍	❍
5.4	Are all the circulation routes and pathways accessible and convenient for students and teachers with disabilities?	❍	❍	❍	❍	❍	❍
5.5	Write your comments about the clarity of circulation in and around the building.						

6.0	**Outdoor Areas**	Yes	No	
6.1	Is there appropriate spaces for outdoor learning	❍	❍	If yes what's available If no what is missing/problematic

Rate your satisfaction of the quality of the outdoor areas.

6.2	**Satisfaction of Outdoor Space**	Very Unsatifactory	Unsatisfactory	Somewhat Unsatisfactory	Somewhat satisfactory	Satisfactory	Very Satisfactory
6.3	Green areas and natural elements adjacent to the learning environments	❍	❍	❍	❍	❍	❍
6.4	Spaces for Social Interaction	❍	❍	❍	❍	❍	❍
6.5	Spaces for play	❍	❍	❍	❍	❍	❍
6.6	Spaces for individual time – solitary play	❍	❍	❍	❍	❍	❍
6.7	Write any comments about the outdoor areas of the learning environment.						

For each item listed below, please rate your overall satisfaction with its quality,

7.0	**Maintenance**	Poor	Fair	Good	Excellent
7.1	School grounds upkeep	❍	❍	❍	❍
7.2	Cleanliness	❍	❍	❍	❍
7.3	Comments: Write any comments about the visual appearance of the learning environment.				

7.4	Expansion	Yes	No
7.5	Is there potential for future expansion of site	❍	❍

8.0	Building				
8.1	Appearance	Poor	Fair	Good	Excellent
8.1A	How well does it convey learning and a user friendly message?	❍	❍	❍	❍

8.1B	ESD Are there Environmental sustainability features present in the building? (please tick one)	Yes	No
8.1B.1	Materials & systems durability (lifecycle cost)	❍	❍
8.1B.2	Building orientation for passive cooling	❍	❍
8.1B.3	Sun shading,	❍	❍
8.1B.4	Thermal insulation,	❍	❍
8.1B.5	Natural light - daylighting,	❍	❍
8.1B.6	Cross ventilation	❍	❍
8.1B.7	Water saving devices	❍	❍
8.1B.8	Energy saving devices/power efficiency	❍	❍
8.1B.9	Other:	❍	❍

9.0	Access and Inclusion	Yes	No	
9.1	Is ***the building entry and layout accessible for student with disabilities?*** *(sensory, cognitive, physical)*	❍	❍	If yes what makes it appropiate to use If no describe what is problematic
9.2	**Is the building layout and circulation appropriate to use?** (volume of students, ease of use)	❍	❍	If yes what makes it appropiate to use If no describe what is problematic

10.0 Interface

Rate your satisfaction of the quality of the interface between interior and exterior.

10.1	Interface. The meeting place where the inside of the building connects with the outside.	Very Unsatifactory	Unsatisfactory	Somewhat Unsatisfactory	Somewhat satisfactory	Satisfactory	Very Satisfactory
10.2	Does the exterior of the building indicate its interior function(s)?	❍	❍	❍	❍	❍	❍
10.3	Does the inside of the building connect with the outside of the building?	❍	❍	❍	❍	❍	❍
10.4	3. Are the exits and entrances easily accessible?	❍	❍	❍	❍	❍	❍
10.5	Are the various openings related to thoughtful planning of the interior? (Consider entry of light, view, privacy, noise, heat, glare, atmosphere, etc.	❍	❍	❍	❍	❍	❍
10.6	Are the exits appropriate from a safety point of view?	❍	❍	❍	❍	❍	❍
10.7	How pleasant is the experience when you move from the exterior of the building to the interior by means of the main entrance?	❍	❍	❍	❍	❍	❍
10.8	How clear the clues to what are is public and what is private?	❍	❍	❍	❍	❍	❍
10.9	Write your comments about how well the design of the building had addressed the problems of interface?						

For each item listed below, please rate its quality in learning space:

11.0	Maintenance	Poor	Fair	Good	Excellent
11.1	Building exterior	❍	❍	❍	❍
11.2	Building fixtures	❍	❍	❍	❍
11.3	Cleanliness	❍	❍	❍	❍
11.4	Write any comments about the maintenance of the learning environment				

For each item listed below, please rate your overall satisfaction with its quality

12.0	Safety and Security		
12.1	**Degree of Safety and Security**	Yes	No
12.2	Emergency exit signage and plan (mark locations on building plan)	❍	❍
12.3	Fire alarms and extinguishers location (mark locations on building plan)	❍	❍
12.4	Building security – lock/alarms	❍	❍

13.0 Positives and Negatives

13.1 Describe what is positive about the outside space and layout of the setting for learning?(if walking tour – ask them to point this out?)

13.2 Describes what you don't like about the outside space and layout of the setting for learning (if walking tour ask them to point this out?)

13.3 What could be changed to improve outside space and layout of the setting for learning the learning experience? (if walking tour ask them to point this out?)

14.0	Classroom		
14.1	**Energy Saving Devices**	Yes	No
14.2	**ESD**. Are there Environmental sustainability features present in the classroom (materials & systems durability (lifecycle cost), building orientation, sun shading, thermal insulation, daylighting, cross ventilation, water saving, energy/power efficiency)	❍	❍
14.3	Spaces for separating waste in the classroom (e.g. paper).	❍	❍
14.4	Spaces for separating waste outside the classroom (e.g. paper, glass, plastic, biodegradables).	❍	❍
14.5	Water saving devices or spaces (e.g. automatic shut off taps, dual flush toilets, rainwater collection tanks).	❍	❍
14.6	Energy saving devices or spaces (e.g. motion detectors for lights in classrooms, solar panels).	❍	❍
14.7	Other	❍	❍

Rate the quality of each aspects and describe your overall impression.

15.0	Spatial Layout - Security, Inclusion and Conducive to Learning	Poor	Fair	Good	Excellent
15.1	Personal Space provision for students	❍	❍	❍	❍
15.2	Personal Space provision for teachers	❍	❍	❍	❍
15.3	Shared Space provision	❍	❍	❍	❍
15.4	Accessible circulation for all students and teachers (inclusive of disability)	❍	❍	❍	❍
15.5	Access to storages	❍	❍	❍	❍
15.6	Access to lockers/bags areas	❍	❍	❍	❍
15.7	Access to outdoors	❍	❍	❍	❍
15.8	Access to technology facilities in room	❍	❍	❍	❍
15.9	Connections between activities	❍	❍	❍	❍
15.10	Furniture and technologies accessible for students with disabilities	❍	❍	❍	❍
15.11	Write your comments about the overall spatial layout of the classroom in supporting learning				

For each item listed below, please rate your overall satisfaction with its quality,

16.0	Physical Attributes – Comfortable for Use and Conducive to Learning	Poor	Fair	Good	Excellent
16.1	Intensity of lighting for learning	❍	❍	❍	❍
16.2	Suitability of lighting for learning	❍	❍	❍	❍
16.3	Amount of Natural lighting- (day light)	❍	❍	❍	❍
16.4	Suitable Acoustics for Learning	❍	❍	❍	❍
16.6	Temperature comfort - Summer	❍	❍	❍	❍
16.7	Flexibility of use of the space	❍	❍	❍	❍
16.8	Aesthetic appeal	❍	❍	❍	❍
16.9	Ventilation and air flow	❍	❍	❍	❍
16.10	Color	❍	❍	❍	❍
16.11	Visually distracting	❍	❍	❍	❍

16.12 Write your comments about the overall quality of the physical attributes of the classroom in supporting learning.

17.0	Seating Arrangements - Tick what is observed	Yes
17.1	Rows	❍
17.2	Groups	❍
17.3	Rows and Groups	❍
17.4	Horse shoe	❍
17.5	Circle	❍
17.6	Other:	❍

18.0 Furniture and Fixtures

18.1	Comfortable for Use and Conducive to Learning	Yes	No
18.2	Movable furniture (desk, chairs) to enable different learning activities	❍	❍
18.3	Space allows for flexibility in furniture arrangement	❍	❍
18.4	Comfortable seating	❍	❍
18.5	Wall boards for display	❍	❍
18.6	Write your comments about the overall furniture of the classroom in supporting learning		

19.0 New Technologies and Services (technology, IT provisions, PowerPoints, Controls).

Write what's present and rate its quality

19.1	ICT equipment -	Poor	Fair	Good	Excellent
		❍	❍	❍	❍
		❍	❍	❍	❍
		❍	❍	❍	❍
		❍	❍	❍	❍

20.0 Fixed features – (shelves ,non-electric whiteboard, displays)

Write what's present and rate its quality

20.1	Fixed fixture item	Poor	Fair	Good	Excellent
		❍	❍	❍	❍
		❍	❍	❍	❍
		❍	❍	❍	❍
		❍	❍	❍	❍

For each item listed below, please rate your overall satisfaction with its quality.

21.0	Maintenance	Poor	Fair	Good	Excellent
21.1	Classroom cleanliness	❍	❍	❍	❍
21.2	Classroom flooring	❍	❍	❍	❍
21.3	Classroom walls	❍	❍	❍	❍
21.4	Classroom doors	❍	❍	❍	❍
21.5	General comments of the maintenance of the classroom and any areas to be improved:				

21.6	Community Use	Yes	No
21.7	Does this room get used by the community?	❍	❍
21.8	Describe when it is used, frequency and for what purpose.		

22.0	Satisfaction with the Quality of Classroom						

Please rate your overall satisfaction with its quality of spaces,

22.1	Social Space: The ability of the school environment to accommodate diverse human needs.	Very Unsatifactory	Unsatisfactory	Somewhat Unsatisfactory	Somewhat satisfactory	Satisfactory	Very Satisfactory
22.2	Does the building suit the students' ability to personalize their workspace?	❍	❍	❍	❍	❍	❍
22.3	Does the classroom function in relation to other space requirements (Such as: small group meetings, projects, etc.)	❍	❍	❍	❍	❍	❍
22.4	Does the classroom allow for needed privacy, or individual pursuits	❍	❍	❍	❍	❍	❍
22.5	Does the building arrangement allow for casual contact among students and teachers?	❍	❍	❍	❍	❍	❍
22.6	Does the building arrangement allow for a centralized area of information exchange	❍	❍	❍	❍	❍	❍
22.7	Are there exhibition spaces to display student work?	❍	❍	❍	❍	❍	❍
22.8	Is the location of teachers' offices accessible?	❍	❍	❍	❍	❍	❍
22.9	Write your comments about the overall furniture of the classroom in supporting learning						

23.0	Comfort: The environmental conditions affecting human comfort	Very Unsatifactory	Unsatisfactory	Somewhat Unsatisfactory	Somewhat satisfactory	Satisfactory	Very Satisfactory
23.1	Do the learning spaces in the building suit an individual's thermal comfort?	❍	❍	❍	❍	❍	❍
23.2	Is there an ability to adjust thermal comfort on an individual basis?	❍	❍	❍	❍	❍	❍
23.3	Does the light level in the building support learning spaces?	❍	❍	❍	❍	❍	❍
23.4	Is the noise level in a typical learning space distracting?	❍	❍	❍	❍	❍	❍
23.5	Write your comments about the achievement of human comfort in the building.						

24.0	Safety. Degree of Safety and Security	Very Unsatifactory	Unsatisfactory	Somewhat Unsatisfactory	Somewhat satisfactory	Satisfactory	Very Satisfactory
24.1	Safe indoor environments for students to learn	❍	❍	❍	❍	❍	❍
24.2	Safe outdoor environments for students to learns	❍	❍	❍	❍	❍	❍
24.3	Places designed for personal items of each student	❍	❍	❍	❍	❍	❍
24.4	Write any comments about the safety and security of the learning environment.						

25.0 Overall Classroom Impression in terms of its adequacy for learning?

Upload Photographs

Upload Notes

26.0 Positives and Negatives

26.1 Describe what is positive about the classroom for learning? (if walking tour – ask them to point this out?)

26.2 Describes what you don't like about the classroom as a learning space (if walking tour ask them to point this out?)

26.3 What would you change to improve the learning experience? (if walking tour ask them to point this out?)

Student Questionnaire No 4-1

Please provide the following information about yourself and your school

Student Name:

Date of Birth:

Name of school:

Date and time of questionnaire completion:

Room number:

Subject taught in room

Instructions

This questionnaire requests information about the following aspects of **your classroom** and school in general:

1. Accessibility

2. Learning spaces

3. Comfort

4. School's appearance

5. Safety and security

6. Maintenance

7. Environmental sustainability

Students are requested to complete **all** questions. If a question is not applicable, please please tick "Not applicable".
- Please tick one box for each question.
- The questionnaire should take students about 30-35 minutes to complete.

Your responses will remain strictly confidential. They will be used in an international study about the quality of the school learning environment.

How much do you agree or disagree with the following statements about entering and moving around the school?

1.0	**Accessibility**	Strongly Disagree	Disagree	Agree	Strongly Agree	Not applicable
1.1	It is easy to get **to** the main entrance **from** the street (i.e. through accessible walkways).	❍	❍	❍		❍
1.2	It is easy to get **from** the inside **to** the outside of the building.	❍	❍	❍	❍	❍
1.3	It is easy to get from one floor within the building to another.	❍	❍	❍	❍	❍
1.4	It is easy to move along the same floor (i.e. there are no congested corridors or changes in the levels in the building, which make moving around difficult).	❍	❍	❍	❍	❍
1.5	The routes or pathways around the **inside** of the building are well signposted or easy to identify for visitors or newcomers.	❍	❍	❍	❍	❍
1.6	The routes or pathways **outside** the building are well signposted or easy to identify for visitors or newcomers.	❍	❍	❍	❍	❍
1.7	The **main entrance** is well signposted or easy to identify for visitors or newcomers.	❍	❍	❍	❍	❍
1.8	There is sufficient room to drop off and pick up students, and for others to drive through.	❍	❍	❍	❍	❍

How much do you agree or disagree with the following statements about your classroom?

2.0	**Learning Spaces**	Strongly Disagree	Disagree	Agree	Strongly Agree	Not applicable
2.1	There is plenty of space for me to work at my desk.	❍	❍	❍	❍	❍
2.2	There is plenty of space for me to move around in the classroom and work with others during class.	❍	❍	❍	❍	❍
2.3	I have access to functioning computers with Internet access in my classroom.	❍	❍	❍	❍	❍

How much do you agree or disagree with the following statements about the **temperature** and **air quality** in your classroom?

3.0	**Comfort**	Strongly Disagree	Disagree	Agree	Strongly Agree	Not applicable
3.1	My classroom has good air circulation (i.e. I can breathe easily, it is not stuffy or too breezy).	❍	❍	❍	❍	❍
3.2	The temperature in my classroom is comfortable in **Winter**	❍	❍	❍	❍	❍
3.3	The temperature in my classroom is comfortable in **Summer**	❍	❍	❍	❍	❍

How much do you agree or disagree with the following statements about the safety and security of your school?

5.0	Safety and Security	Strongly Disagree	Disagree	Agree	Strongly Agree	Not applicable
5.1	I feel safe in the school.	❍	❍	❍	❍	❍
5.2	I feel safe in the school grounds.	❍	❍	❍	❍	❍
5.3	There are secure lockers in which I can store my belongings.	❍	❍	❍	❍	❍

In the case of an emergency, do you know how to?

5.4	Emergency	Yes	No
5.4A	Set off the fire alarm.	❍	❍
5.4B	Find emergency exits.	❍	❍

How much do you agree or disagree with the following statements about the maintenance of your school?

6.0	Maintenance	Strongly Disagree	Disagree	Agree	Strongly Agree	Not applicable
6.1	My classroom is clean.	❍	❍	❍	❍	❍
6.2	The school building and grounds are generally clean.	❍	❍	❍	❍	❍
6.3	My classroom is in good physical condition (i.e. wall paint and floor coverings are not damaged, windows and doors function correctly and the ceiling does not leak).	❍	❍	❍	❍	❍
6.4	The school buildings and grounds are well maintained (*i.e.* wall paint and floor coverings are in good condition, windows and doors function correctly and the ceiling does not leak).	❍	❍	❍	❍	❍
6.5	The toilet spaces are clean and functional.	❍	❍	❍	❍	❍

Are the following environmentally-friendly spaces or devices available at your school?

7A.0	Environmental sustainability	Yes	No	I don't know
7A.1	Spaces for separating waste in the classroom (e.g. paper).	❍	❍	❍
7A2	Spaces for separating waste outside the classroom (e.g. paper, glass, plastic, biodegradables).	❍	❍	❍
7A.3	Water saving devices or spaces (*e.g.* automatic shut off taps, dual flush toilets, rainwater collection tanks).	❍	❍	❍
7A.4	Energy saving devices or spaces (*e.g.* motion detectors for lights in classrooms, solar panels).	❍	❍	❍
7A.5	Spaces used by the students in lessons (e.g. meters to monitor energy consumption, ecological/horticultural spaces)	❍	❍	❍

How much do you agree or disagree with the following statements about your school's commitment to the goals of environmental sustainability?

7B.0	Maintenance	Strongly Disagree	Disagree	Agree	Strongly Agree	Not applicable
7B.1	Most students are interested in taking steps to [to green the school] reduce the school's negative impact on the environment	❍	❍	❍	❍	❍
7B.2	Most teaching staff are interested in taking steps to [to green the school] reduce the school's negative impact on the environment.	❍	❍	❍	❍	❍
7B.3	My community is interested in taking steps to [to green the school] reduce the school's negative impact on the environment.	❍	❍	❍	❍	❍
7B.4	I try to [to green my home] reduce my own negative impact on the environment	❍	❍	❍	❍	❍

8.0 Comments

If you have any additional comments about your school environment, please write them here. If they refer to one of the questions above, please cite the question number. If you comments relate to a particular room, please indicate the room number.

Teaching Staff Questionnaire No 4-2

Please provide the following information about yourself and your school

Name of school:

Date and time of questionnaire completion:

Teacher's Name

Subject, class(es) and grade(s) taught

Average number of students with special needs in one of your classes

Instructions

This questionnaire requests information about the following aspects of the spaces and place in which you work and the school space in general.

1. Teaching and teaching staff spaces

2. Comfort

3. School's appearance

4. Safety and security

5. Maintenance

Teaching staff are requested to complete **all** questions. If a question is not applicable, please please tick "Not applicable".
- Please tick one box for each question.
- The questionnaire should take students about 30-35 minutes to complete.

Your responses will remain strictly confidential. They will be used in an international study about the quality of the school learning environment.

1.0	Teaching and teaching staff spaces
1.1	Please list the space(s) that you currently use for teaching (e.g. regular classrooms, computer laboratory, science laboratory, library, gymnasium or sports spaces).

How much do you agree or disagree with the following statements about the teaching space(s) you currently use?

2.0	Teaching Spaces	Strongly Disagree	Disagree	Agree	Strongly Agree	Not applicable
2.1	The spaces in general are large enough to accommodate the number of students being taught.	❍	❍	❍	❍	❍
2.2	Furniture can be easily moved and arranged to accommodate different learning activities (e.g. activities in large or small groups; seating arrangements in circles, rows or groups).	❍	❍	❍	❍	❍
2.3	There are different areas for students to pursue different learning activities (e.g. activities in large or small groups; seating arrangement in circles, rooms or groups).	❍	❍	❍	❍	❍
2.4	The physical layout of the classroom allows for new methods and teaching practices.	❍	❍	❍	❍	❍
2.5	There are areas where students' work can be displayed (*e.g.* wall boards).	❍	❍	❍	❍	❍
2.6	There is enough space for me to work at my desk or move around when teaching.	❍	❍	❍	❍	❍
2.7	Students have adequate access to functioning computers, with Internet.	❍	❍	❍	❍	❍
2.8	I can use electronic equipment - such as video projector, DVDs and projection screens.	❍	❍	❍	❍	❍
2.9	The school is accessible for students with special needs, especially drop-off points.	❍	❍	❍	❍	❍
2.10	Classrooms are accessible for students with special needs.	❍	❍	❍	❍	❍
2..11	Classrooms are equipped for students with special needs.	❍	❍	❍	❍	❍

3.0	Spaces for Teaching Staff
	Please list the spaces that you currently use in the school for completing work outside teaching time, such as for lesson preparation, making, administrative work, staff meeting, etc.

How much do you agree or disagree with the following statements about the spaces available for teaching staff in the school?

3.1	Spaces for Teaching Staff	Strongly Disagree	Disagree	Agree	Strongly Agree	Not applicable
3.2	There is enough space in the school to carry out work outside teaching time.	❍	❍	❍	❍	❍
3.3	There is enough space to hold meetings between staff or with parents.	❍	❍	❍	❍	❍
3.4	There are functioning computers to help me complete work outside teaching time.	❍	❍	❍	❍	❍
3.5	The staff room is a comfortable area for teaching staff.	❍	❍	❍	❍	❍

How much do you agree or disagree with the following statements about the **temperature** and **air quality** in the teaching space(s) that you currently use?

4.0	Comfort	Strongly Disagree	Disagree	Agree	Strongly Agree	Not applicable
4.1	The classroom has good air circulation (*i.e.* I can breathe easily, it is not stuffy or too breezy).	❍	❍	❍	❍	❍
4.2	The temperature in my classroom is comfortable in ***Winter***	❍	❍	❍	❍	❍
4.3	The temperature in my classroom is comfortable in ***Summer***	❍	❍	❍	❍	❍
4.4	I can control ventilation and temperature in the classroom (*i.e* . you can open and close windows; switch on fans, air conditioners or heaters; or adjust the thermostat).	❍	❍	❍	❍	❍

How much do you agree or disagree with the following statements about **noise** in the teaching space(s) that you currently use?

5.0	Noise	Strongly Disagree	Disagree	Agree	Strongly Agree	Not applicable
5.1	Sound echoes too much in the classroom.	❍	❍	❍	❍	❍
5.2	(When students are quiet) I have to raise my voice to ensure that students hear me at the back of the classroom.	❍	❍	❍	❍	❍
5.3	Noise from outside the classroom does not disrupt student learning.	❍	❍	❍	❍	❍

How much do you agree or disagree with the following statements about **light** in the teaching space(s) that you curently use?

6.0	Lighting	Strongly Disagree	Disagree	Agree	Strongly Agree	Not applicable
6.1	The classroom has good lighting (*i.e.* it is not too dark or too bright; there is no glare), so that I can teach and see students and their work without difficulty.	❍	❍	❍	❍	❍
6.2	I can control lighting in the classroom (*i.e.* you can turn the lights on and off, open and close shutters/blinds to control natural light).	❍	❍	❍	❍	❍

How much do you agree or disagree with the following statements about the **visual appearance** of the school?

7.0	School's Appearance	Strongly Disagree	Disagree	Agree	Strongly Agree	Not applicable
7.1	The *outside* of the school building is welcoming and attractive.	❍	❍	❍	❍	❍
7.2	The inside of the school building is welcoming and attractive.	❍	❍	❍	❍	❍
7.3	The school building conveys to the community the importance of learning.	❍	❍	❍	❍	❍

How much do you agree or disagree with the following statements about the **safety** and **security** of your school?

8.0	Safety and Security	Strongly Disagree	Disagree	Agree	Strongly Agree	Not applicable
8.1	I feel safe in the school.	❍	❍	❍	❍	❍
8.2	I feel safe in the school grounds.	❍	❍	❍	❍	❍
8.3	There are secure lockers in which I can store my belongings.	❍	❍	❍	❍	❍

How much do you agree or disagree with the following statements about the **maintenance** of your school?

9.0	Maintenance	Strongly Disagree	Disagree	Agree	Strongly Agree	Not applicable
9.1	Classroom is clean.	❍	❍	❍	❍	❍
9.2	The school building and grounds are generally clean.	❍	❍	❍	❍	❍
9.3	Classrooms are well maintained (*i.e.* wall paint and floor coverings are in good condition, windows and doors function correctly and the ceiling does not leak).	❍	❍	❍	❍	❍
6.4	The school buildings and grounds are well maintained (*i.e.* wall paint and floor coverings are in good condition, windows and doors function correctly and the ceiling does not leak).	❍	❍	❍	❍	❍
6.5	The toilet spaces are clean and functional.	❍	❍	❍	❍	❍

10.0 Comments

If you have any additional comments about your school environment, please write them here. If they refer to one of the questions above, please cite the question number. If you comments relate to a particular room, please indicate the room number.

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE

School Building Rating Scale No 5

Name of learning environment:

Building being evaluated:

For each item listed below, please rate your overall satisfaction with its quality.

1.0	**Physical Features**	Very Unsatisfactory	Unsatisfactory	Somewhat Unsatisfactory	Somewhat satisfactory	Satisfactory	Very Satisfactory
1.1	Connection between indoor and outdoor areas within the campus	❍	❍	❍	❍	❍	❍
1.2	Appropriate building for learning	❍	❍	❍	❍	❍	❍
1.3	Accessibility for people with disabilities – Code compliant?	❍	❍	❍	❍	❍	❍
1.4	Building designed and built to the scale of children	❍	❍	❍	❍	❍	❍
1.5	Control of internal and external noise level	❍	❍	❍	❍	❍	❍
1.6	Views and natural light through windows	❍	❍	❍	❍	❍	❍
1.7	Visibility of main entrance for students and visitors	❍	❍	❍	❍	❍	❍
1.8	Comments: Write any comments about the physical features of the learning environment						

For each item listed below, please rate your overall satisfaction with its quality.

2.0	**Outdoor Areas**	Very Unsatisfactory	Unsatisfactory	Somewhat Unsatisfactory	Somewhat satisfactory	Satisfactory	Very Satisfactory
2.1	Appropriate outdoor areas for learning	❍	❍	❍	❍	❍	❍
2.2	Green areas adjacent to the learning environments	❍	❍	❍	❍	❍	❍
2.3	Outdoor play areas for students	❍	❍	❍	❍	❍	❍
2.4	Outdoor learning environments with natural elements	❍	❍	❍	❍	❍	❍
2.5	Outdoor learning environments for social interaction	❍	❍	❍	❍	❍	❍
2.6	Outdoor learning areas for individual learning styles	❍	❍	❍	❍	❍	❍
2.7	Comments: Write any comments about the outdoor areas of the learning environment						

For each item listed below, please rate your overall satisfaction with its quality.

3.0	Learning Environments - Classrooms	Very Unsatisfactory	Unsatisfactory	Somewhat Unsatisfactory	Somewhat satisfactory	Satisfactory	Very Satisfactory
3.1	Indoor learning areas for individual learning styles	❍	❍	❍	❍	❍	❍
3.2	Centralized grouping of administration areas	❍	❍	❍	❍	❍	❍
3.3	Workrooms adjacent to classrooms	❍	❍	❍	❍	❍	❍
3.4	Areas of instruction for the arts	❍	❍	❍	❍	❍	❍
3.5	Areas of instruction for science	❍	❍	❍	❍	❍	❍
3.6	Teachers workspace	❍	❍	❍	❍	❍	❍
3.7	Comfortable and stress-free classrooms	❍	❍	❍	❍	❍	❍
3.8	Stimulating classroom atmosphere for learning	❍	❍	❍	❍	❍	❍
3.9	Size of the learning groups in classrooms	❍	❍	❍	❍	❍	❍
3.10	Comfortable classroom temperature in winter	❍	❍	❍	❍	❍	❍
3.11	Comfortable classroom temperature in summer	❍	❍	❍	❍	❍	❍
3.12	Indoor air quality in classrooms	❍	❍	❍	❍	❍	❍
3.13	Adaptability of classrooms to changing uses	❍	❍	❍	❍	❍	❍
3.14	Lighting quality in classrooms	❍	❍	❍	❍	❍	❍
3.15	Classrooms directly connected to outdoors	❍	❍	❍	❍	❍	❍
3.16	Classroom walls conducive for displaying students' work	❍	❍	❍	❍	❍	❍
3.17	Hallways conducive for displaying student work	❍	❍	❍	❍	❍	❍
3.18	Classrooms is equipped for student with disabilities	❍	❍	❍	❍	❍	❍
3.19	Comments: Write any comments about the learning environment itself						

For each item listed below, please rate your overall satisfaction with its quality.

4.0	Social Areas	Very Unsatisfactory	Unsatisfactory	Somewhat Unsatisfactory	Somewhat satisfactory	Satisfactory	Very Satisfactory
4.1	Inside quiet areas for eating	❍	❍	❍	❍	❍	❍
4.2	Outside quiet areas for eating	❍	❍	❍	❍	❍	❍
4.3	Private spaces for students both inside and outside building(reading areas, quiet places, reflection areas, listening areas etc.)	❍	❍	❍	❍	❍	❍
4.4	Places where students can be noisy and engage in physical activity	❍	❍	❍	❍	❍	❍
4.5	Public areas fostering a sense of community	❍	❍	❍	❍	❍	❍
4.6	Students personalizing their own places	❍	❍	❍	❍	❍	❍
4.7	Comments: Write any comments about the social areas of learning environment itself						

For each item listed below, please rate your overall satisfaction with its quality.

	5.0 Media Access - refers to ICT	Very Unsatisfactory	Unsatisfactory	Somewhat Unsatisfactory	Somewhat satisfactory	Satisfactory	Very Satisfactory
5.1	Technology access for students in the learning environments	❍	❍	❍	❍	❍	❍
5.2	Technology access for teachers in the learning environments	❍	❍	❍	❍	❍	❍
5.3	Internet connectivity access in the learning environments	❍	❍	❍	❍	❍	❍
5.4	Equipment quality	❍	❍	❍	❍	❍	❍
5.5	Ease of Use	❍	❍	❍	❍	❍	❍
5.6	Comments: Write any comments about your experience in ICT access and use in the learning environment.						

For each item listed below, please rate your overall satisfaction with its quality.

	6.0 Transition Spaces and Circulation Routes	Very Unsatisfactory	Unsatisfactory	Somewhat Unsatisfactory	Somewhat satisfactory	Satisfactory	Very Satisfactory
6.1	Circulation routes within and among learning environments	❍	❍	❍	❍	❍	❍
6.2	Hallways as passageways within the school	❍	❍	❍	❍	❍	❍
6.3	Clear markings for interior circulation routes	❍	❍	❍	❍	❍	❍
6.4	Transition spaces inside and outside of the learning environments	❍	❍	❍	❍	❍	❍
6.5	Covered pathways among buildings within the campus	❍	❍	❍	❍	❍	❍
6.6	Comments: Write any comments about the social areas of the learning environment						

For each item listed below, please rate your overall satisfaction with its quality.

	7.0 Visual Appearance	Very Unsatisfactory	Unsatisfactory	Somewhat Unsatisfactory	Somewhat satisfactory	Satisfactory	Very Satisfactory
7.1	Visual appearance of the exterior of school	❍	❍	❍	❍	❍	❍
7.2	Visual appearance of the interior of school building	❍	❍	❍	❍	❍	❍
7.3	Harmony of the school building with surroundings	❍	❍	❍	❍	❍	❍
7.4	Variation of ceiling heights within the school for comfort	❍	❍	❍	❍	❍	❍
7.5	Variation of ceiling heights within the school for intimacy	❍	❍	❍	❍	❍	❍
7.6	Visual stimulation of school building	❍	❍	❍	❍	❍	❍
6.6	Comments: Write any comments about the visual appearance of the learning environment.						

For each item listed below, please rate your overall satisfaction with its quality.

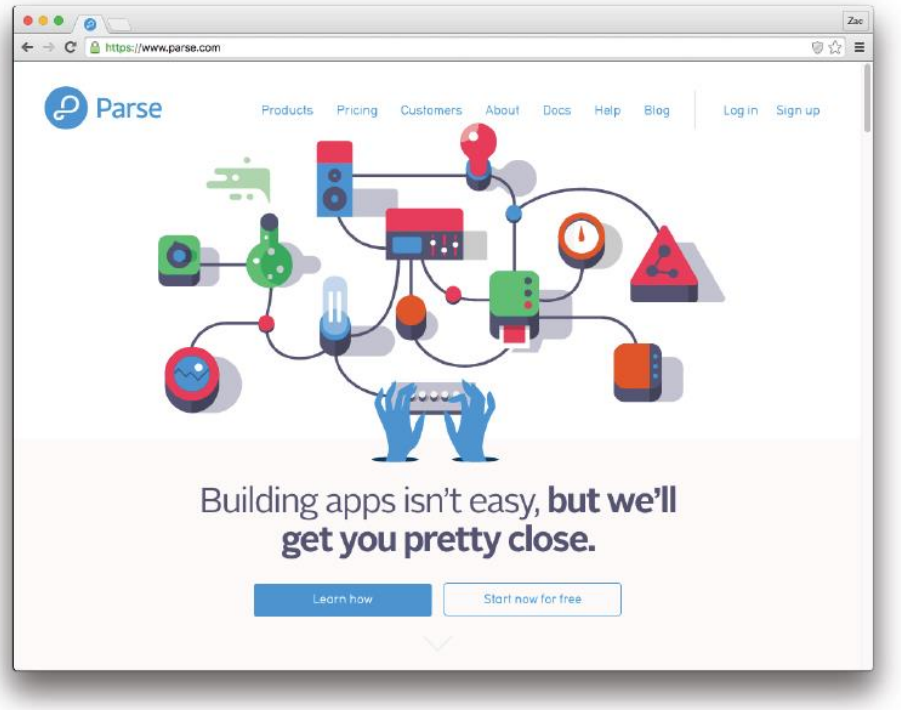
8.0	**Degree of Safety and Security**	Very Unsatisfactory	Unsatisfactory	Somewhat Unsatisfactory	Somewhat satisfactory	Satisfactory	Very Satisfactory
8.1	Safe location of learning environments free of non-pedestrian traffic	❍	❍	❍	❍	❍	❍
8.2	Safe location of learning environments	❍	❍	❍	❍	❍	❍
8.3	Safe indoor environments for students to learn	❍	❍	❍	❍	❍	❍
8.4	Safe outdoor environments for students to learn	❍	❍	❍	❍	❍	❍
8.5	Secured storage spaces for students	❍	❍	❍	❍	❍	❍
8.6	Secured storage spaces for teachers	❍	❍	❍	❍	❍	❍
8.7	Places designed for personal items of each student	❍	❍	❍	❍	❍	❍
8.8	Comments: Write any comments about the safety and security of the learning environment						

9.0	**Overall Impression**	Very Unsatisfactory	Unsatisfactory	Somewhat Unsatisfactory	Somewhat satisfactory	Satisfactory	Very Satisfactory
9.1	Student friendly learning environments	❍	❍	❍	❍	❍	❍
9.2	Teacher friendly learning environments	❍	❍	❍	❍	❍	❍
9.3	Comments: Write any comment about your overall impression of the learning environment						

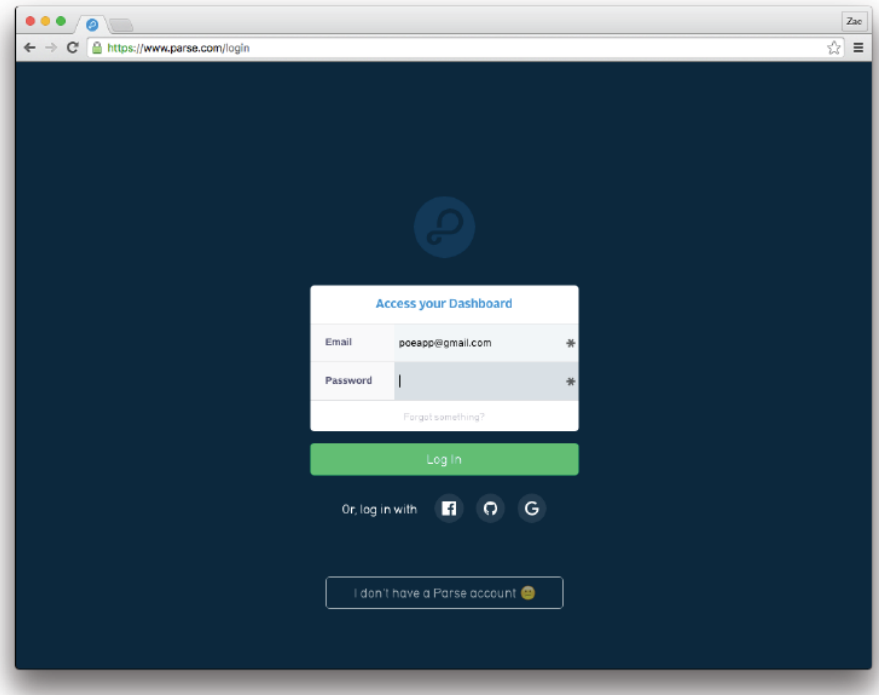
10.0	**Personal Information**	Student	Teacher	Administration	Maintenance	Other
10.1	What is your position?	❍	❍	❍	❍	❍
10.2	How long have you been at this school?					
		Female	Male			
10.3	What is your sex?	❍	❍			

Appendix C: Parse data download instructions

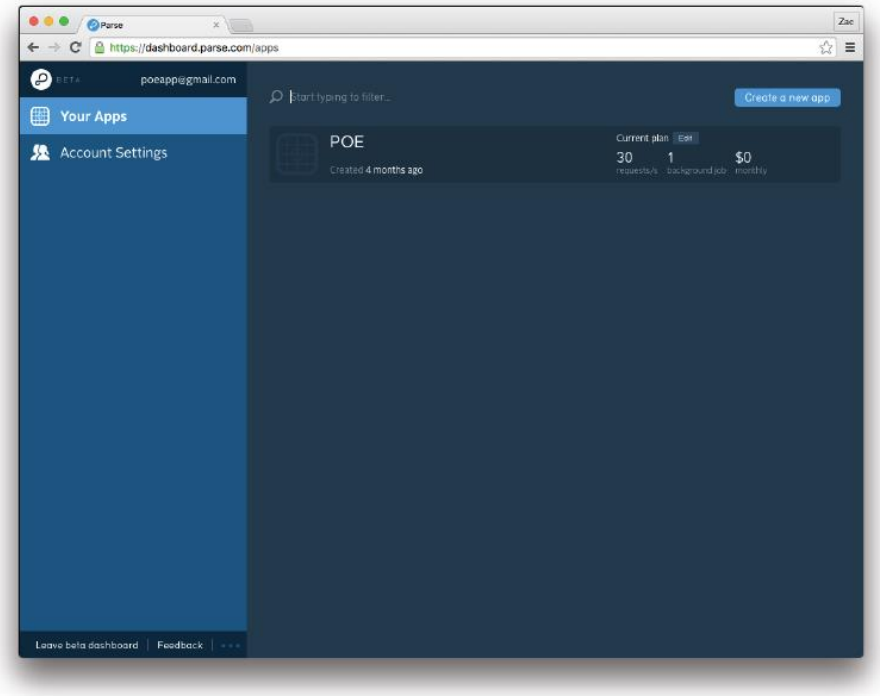
Visit http://www.parse.com in your browser and click **Log in**.



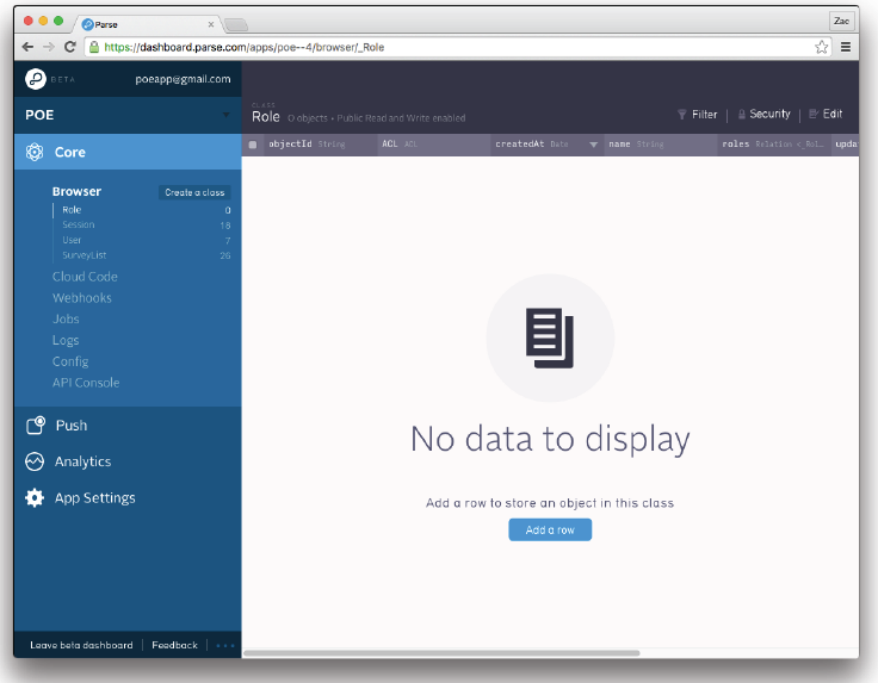
Type in the account **email** and **password** provided on delivery and press **Log in**.



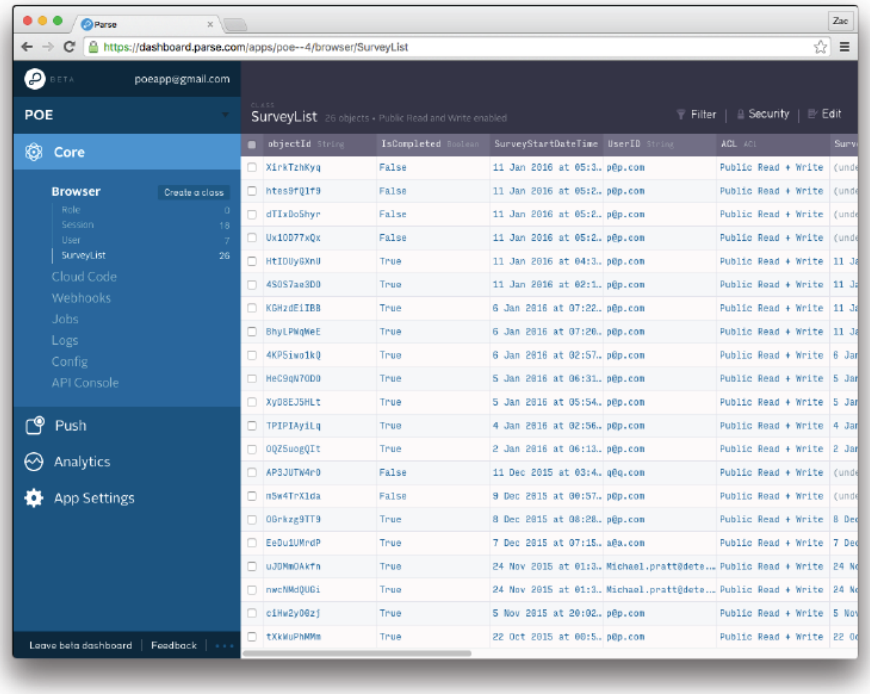
Click **POE** in order to start browsing the data saved.



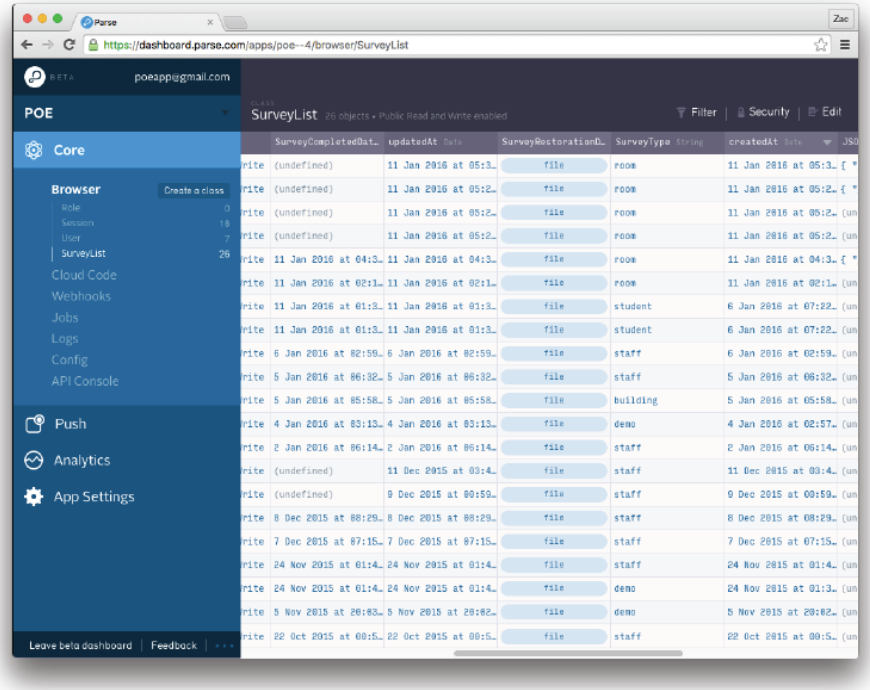
In the left menu you will see a list of tables. Click **SurveyList** to view the survey results.



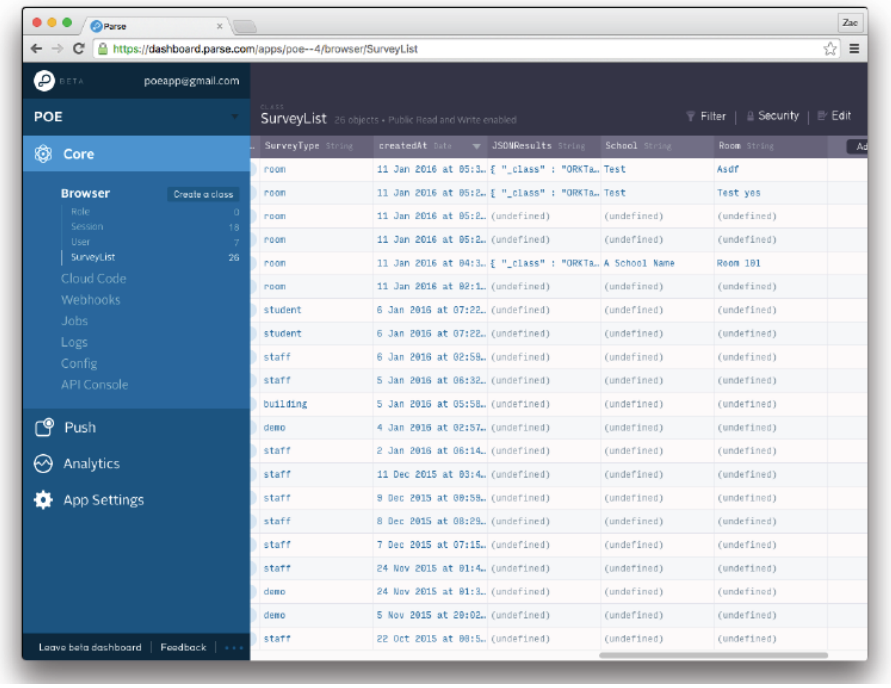
You will see a table of survey results. Each row is a new survey submitted from the mobile application. You can see which surveys have been completed, by whom and when they were started.



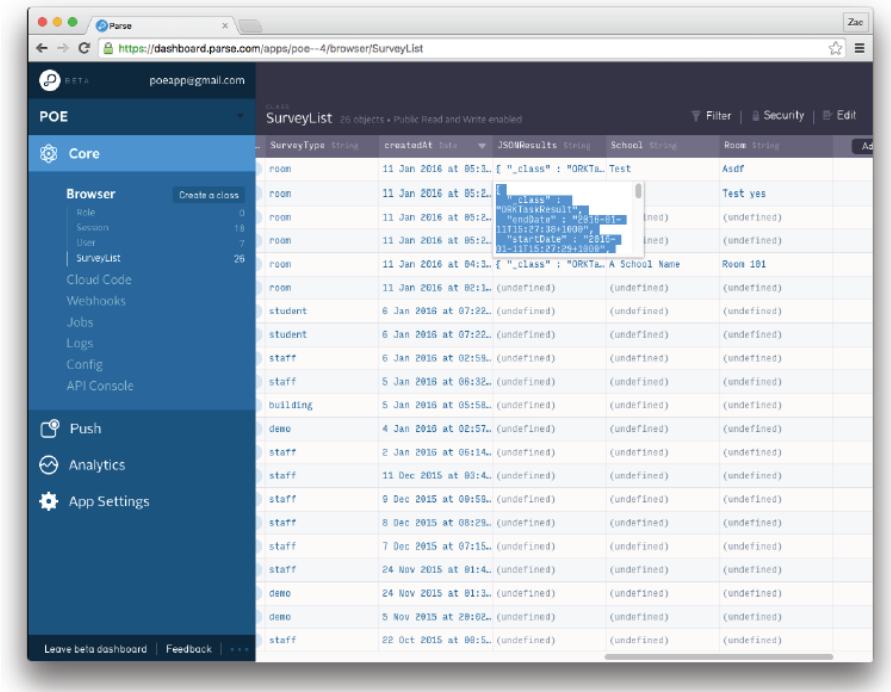
Scroll across and you can see more survey information, including the type of survey (school, room, staff or student), school name and room code (if provided)



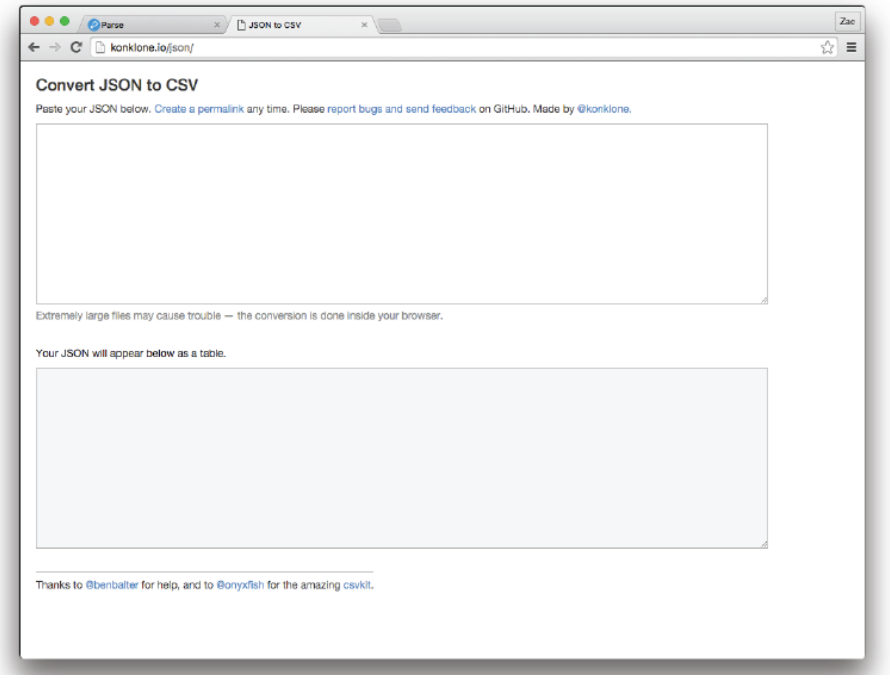
Getting the survey results in a format suitable for analysing is easy. Simply find the JSONResults column (or email the survey data to yourself in the survey).



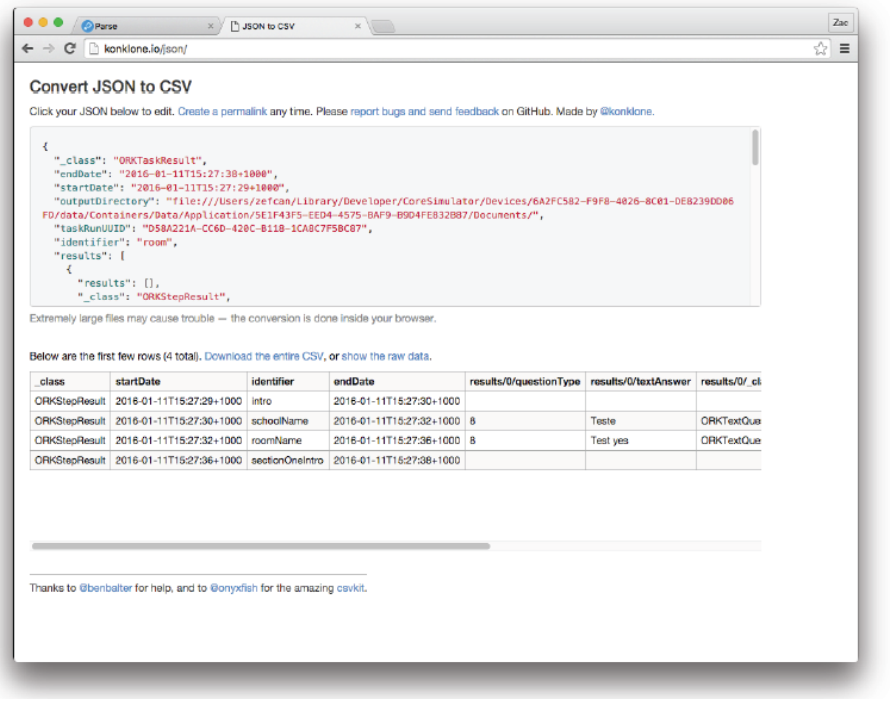
Then select the cell of the survey you want the results for and copy the contents of the cell.



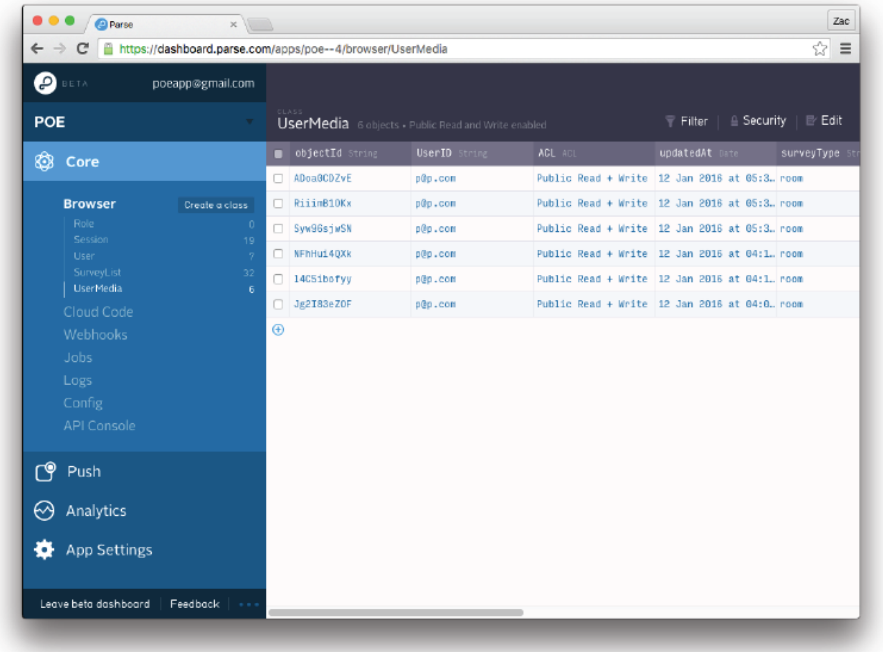
You can then use a converter such as http://konklone.io/json/ to turn the JSON result you copied, or emailed yourself, into a table that can be used in Microsoft Excel.



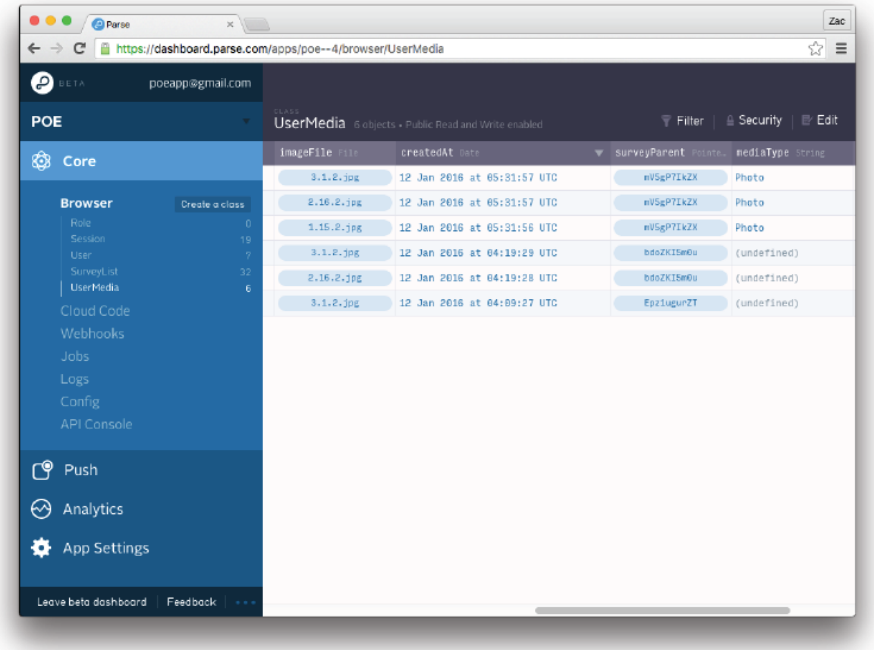
Simply paste the JOS results and it will be converted into a CSV that you can download. The results of the survey include details such as the start and end date and the results of each question from the survey.



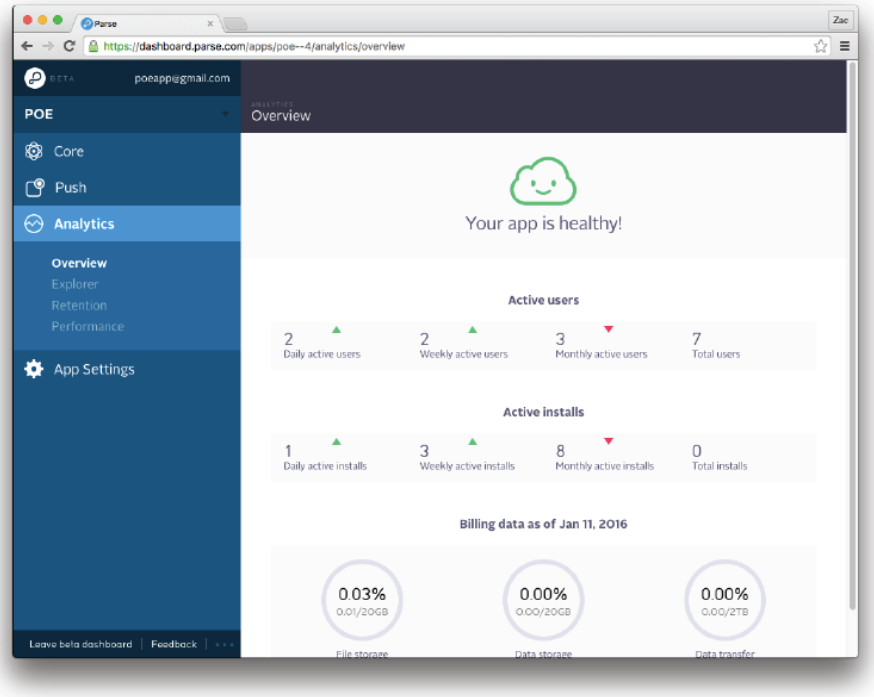
In Parse you can view any media (images, videos) uploaded by users by selecting the **UserMedia** table in the menu on the left. This table lists all uploaded media showing who uploaded it, when it was uploaded and survey type. In the email sent through the mobile application, a link is provided to each media element.



Scroll across to see the media file and click to download it. You can also see which survey the media file belongs to and what type of media it is.



In Parse you can explore the usage of the mobile application by selecting **Analytics** in the menu on the left. From here you can see how many people are using the application.



Finally, if you need to change any account information such as the password (which is important to change after delivery) simply click the poeapp@gmail.com text in the menu.