

OP Observer: A Class Observation Tool for Measuring the Effectiveness of Teaching Practice

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The Asian Conference on Education 2019
Official Conference Proceedings

Abstract

The aim of this paper is to present an evaluation of the effectiveness of a class observation tool in measuring learner-centred practice at a New Zealand tertiary institution. This research arose from an awareness that many lecturers are still mainly providing teacher-centred classes, which have been proven to be less effective and engaging for the students' learning process. We believe that making this measurement tool more efficient will help capture more information that is beneficial for lecturers' reflective practice and will overall bring about a higher quality tertiary education for students. We designed this project in collaboration with a group of IT students and their lecturer at Otago Polytechnic, Auckland International Campus, New Zealand. We initially conducted class observations on a paper-based tool to identify teacher-centred and learner-centred activities used by lecturers. This was later turned into a Web-based class observation tool for more efficiency. We conducted 25 observations and the results were then discussed with the respective lecturers to involve them in a reflective session on the effectiveness of their teaching practice. Our experience with this tool helped to further create a mobile phone application (app), to make it more user-friendly. We believe that the function of this observation tool could be further extended/customised to also measure other aspects of teaching practice.

Keywords: Web-based class observation tool, effectiveness of teaching practice, learner-centred practice, reflective practice.

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Introduction and background

The importance of learner-centred practice for better quality teaching

The concept of learning and teaching has undergone many changes across time and, more recently, there is an increasing focus on learner-centred practice. There has consequently been a change in the role of the teacher as well, with a learner-centred classroom favouring the teacher as ‘facilitator’, rather than the more classic ‘instructor’. However, many teachers, especially in the tertiary education sector, still seem to prefer teacher-centred classes and the conveyance of their material to students through the classic ‘lecturing’ technique.

There have been different ideas to what could constitute more effective ‘learning’ for students. Moon (2004) draws attention to the difference between ‘learning’ and ‘teaching’, especially when teaching is meant as ‘instructing’. Instead of the classic ‘lecturing’ or ‘instructing’, she suggests ‘facilitating learning’, which she explains as “aiding or mediating learning in order to help the learner to learn more effectively.” (p.12). According to a definition provided by Kitson et al in 1998 (as cited in Harvey et al., 2002), ‘facilitation’ is “a technique by which one person makes things easier for others”.

Moon also suggests a multitude of other activities that could be part of a facilitative learning process, such as brainstorming, syndicate work, games and simulations (Moon, 2004, p.13). Through these activities, a facilitator can gain the more impactful role of ‘enabling’ students and getting them more actively involved in their own learning: “an ‘enabling’ facilitator role is more likely to be developmental in nature, seeking to explore and release the inherent potential of individuals.” (Harvey et al., 2002). The role of teacher as ‘instructor’ seems to be seen as an outdated version within the learning and teaching process. As Osterman (1998) points out, knowledge cannot be acquired in a purely theoretical context where it is passed from teacher to student. For learning to really take place, it requires student engagement and “it is necessary to enable the learner to take an active role in determining the direction and progress of learning” (Osterman, 1998, p.10).

This idea goes hand-in-hand with Osterman’s idea that a teacher should not assume that students do not possess any knowledge prior to joining their classes. Instead he argues that, in order to build new knowledge, the teacher always needs to rely on the previous or existing knowledge of students, or ‘prior learning’ (Osterman, 1998; Boud, 2004). In other words, effective classroom facilitation is about teachers taking a step back and getting the students to participate more actively in classwork, whilst at all times guiding them in the right direction. “[...]the facilitator’s role is concerned with enabling the development of reflective learning by helping to identify learner needs, guide group processes, encourage critical thinking, and assess the achievement of learning goals” (Harvey et al., 2002).

The importance of observations on a teacher’s professional development

A possible cause for teacher-centred classrooms in tertiary education might be based on the idea that a lecturer’s job is to lecture, and not to facilitate. Another more likely cause for this approach could be what Maingay (1988) calls ‘ritual teaching

behaviour', where the teaching becomes routine and the teachers no longer reflect on their teaching methods (p.119). Maingay suggests class observations as a solution for this issue and argues that the observer could play an important role in making the teacher think about their professional practice. Ideally, this would enable teachers to get to what Maingay calls 'principled teaching behaviour' (1988, p.119), which consists of both regular classroom rituals, as well as more informed and conscious practice (teacher awareness of strategies). Referring especially to an ELT (English Language Teaching) context, Bowen and Marks point out that "[c]lassrooms have often been characterized as 'black boxes' because once the door is shut and the lesson starts, no one outside has any idea what goes on inside." (1994, p.7). This is why a class observation can be an effective tool in measuring a teacher's professional development. Malu (2015) argues that there should not be any difference in approaching professional development for the teaching profession compared to other practical fields such as medicine or police, and that teaching can also be improved by having more experienced professionals observing and giving constructive feedback.

The idea of peer observation has been discussed in literature as arguably a less intrusive, more effective way of offering constructive feedback in terms of teaching practice, "to improve quality of teaching" in a "non-threatening" way (Sullivan, Buckle, Nicky, & Atkinson, 2012). Maingay calls this "a rare, but very much to be encouraged situation." (1988, p.121). Observations are often used for teacher assessment, or evaluation purposes (Maingay, 1988, p.120), and can therefore become a daunting experience for the teacher being observed. The potential 'teacher resistance' to professional development in general might be stemming from a classic power relation (manager observing employee/team member). Rehman calls these "top-down models of supervision" and believes observations to be much more effective when the evaluation aspect is taken out of the equation (Rehman, 2018). "When professionalization activities had no summative bearing, the supervisor/supervisee interaction dynamic changed, and the working relation became much more collegial." (Rehman, 2018). Irrespective of the professional field, a well-conducted peer observation process "may be perceived by the teacher as a constructive, developmental adjunct to their teaching, which improves opportunities for student learning." (Sullivan et al., 2012).

Wilson's "team action" supports the idea that self-development could be improved by working with colleagues from the same field, in a less formal context (2001). "Teachers can sit in on each other's classes and use the joint experience of the lesson as the basis for a discussion on teaching and learning." (Wilson, 2001). This idea is further supported by Ahmed, Nordin, Shah and Channa (2018), who believe that no observation can be complete without a 'post observation conference' with the peer observer, with the aim to provide reciprocal constructive feedback and help with professional development. This informal collegial experience could eventually lead to a formal teacher development programme (Wilson, 2001).

The importance of observation tools

The class observation process has been improved by using a number of observation tools developed by different educational institutions. The first generation of class observation tools were paper-based. The observer mapped the classroom environment and the student-teacher interactions on paper. For example, Te Kotahitanga

Observation Tool was used to measure the degree of teacher-student interaction in New Zealand schools (Berryman & Bishop, 2011). This tool was particularly designed to measure teachers' engagement with Maori students, and could gather evidence about the lesson, mapping student and teacher locations, measuring the cognitive level of the lesson, coding teacher-student interactions, identifying cultural visibility in the classroom, measuring the teacher's responsiveness and providing feedback to the teachers. More recently, the paper-based class observation tools have been modernised and digitised into more visual and interactive models.

Celik, Baran and Sert's (2018) recent article about mobile-app observation methods as opposed to other more traditional observation methods is one of the few examples in literature that describes a digital observation tool. VEO (Video Enhanced Observation - 2014) is the mobile application that they used in their experiment to discover if this was a better option than paper-pen and video observation methods, especially when it came to post-observation feedback accuracy (Celik et al., 2018). Used in ELT classes, it consists of a video recording of the lesson being observed, with annotations (tags) on the screen for better recalling of the activities and procedures that were used during the lesson.

Table 1 presents some other examples of class observation tools from literature currently in use.

Name of the observation tool	Digital or paper-based	Description
Peer Observation Evaluation Tool (POET) designed by Trujillo et al. (2008)	Paper-based tool	<p>The POET is a peer assessment tool for assessing teaching and learning in large classrooms. Its key strength is that it allows customisation of the peer assessment processes.</p> <p>Functionalities:</p> <ul style="list-style-type: none"> • Pre-observation recording • Classroom observation recording (teaching strategies and presentation skills recording) • Classroom climate recording • Post-observation meeting recording
Classroom Assessment Scoring System (CLASS) developed by Robert Pianta at the centre for Advanced Study of Teaching and Learning University of Virginia (2008)	Paper-based tool	<p>CLASS is an observation tool that can assess the effectiveness of interactions between teachers and students in classrooms.</p> <p>Functionalities:</p> <ul style="list-style-type: none"> • Observing the classroom and recording notes • Recording audios and videos • Producing qualitative and quantitative data for analysis and recommendations • Gauging the teacher's effectiveness

The Narrative Logs introduced by the University of Toronto (2017)	Paper-based tool	<p>Narrative logs record the verbal and non-verbal behaviour in a classroom. They are used to describe what the observer sees and hears rather than the observer’s discernment.</p> <p>Functionalities:</p> <ul style="list-style-type: none"> • Records the observer’s comments or questions related to what is happening in the classroom • Very useful in guiding the post observation consultation and self-assessment
The Lesson Observation App and Online Reporting Tool - VUWBO (2018)	Digital tool	<p>VUWBO evaluates the quality of teaching and curriculum implementation. It helps to identify teaching strengths and areas for improvement.</p> <p>Functionalities:</p> <ul style="list-style-type: none"> • Observing classrooms and recording notes • Taking photos to support work scrutiny, discuss classroom layout or student behavioural interaction with the teacher • Creating reports for staff • Monitoring improvement over time

Table 1: Class observation tools

Peer observation process with OP Observer

The creation of the OP Observer digital class observation tool at our tertiary institution originated from the necessity to have an easier peer observation process than with our previous paper-based observation tool. Using a digital tool enabled us to better measure teacher performance, in order to give more accurate feedback.

OP Observer captured the learning environment in terms of the different types of learner-centred or teacher-centred activities and the movements of the classroom facilitator every 30 or 60 seconds.

Our peer observation had three stages (as shown in Figure 1):

1. Pre-observation: Lecturers were introduced to learner-centred practice through some reading and videos on Moodle (a short Moodle course). This was followed by an online questionnaire on Moodle. The staff experienced this process by themselves. After submitting the questionnaire, the class observation team (a team of peer lecturers within the institution) followed up with them by organising a professional feedback conversation to clarify any specific issues the staff might have had. During this conversation, staff were also asked to come up with

potential ways of incorporating learner-centred activities into their respective courses.

2. Observation: A class observation using the OP Observer tool. Their class facilitation was observed by a member of the class observation team. They were primarily observed on their application of learner-centred activities. A summary of the class observation results was then emailed to the respective staff.
3. Post-observation: The whole observation process was concluded with a professional feedback conversation between the observer and the respective staff member to create an action plan for continuous improvement in the application of learner-centred practice in their classes.

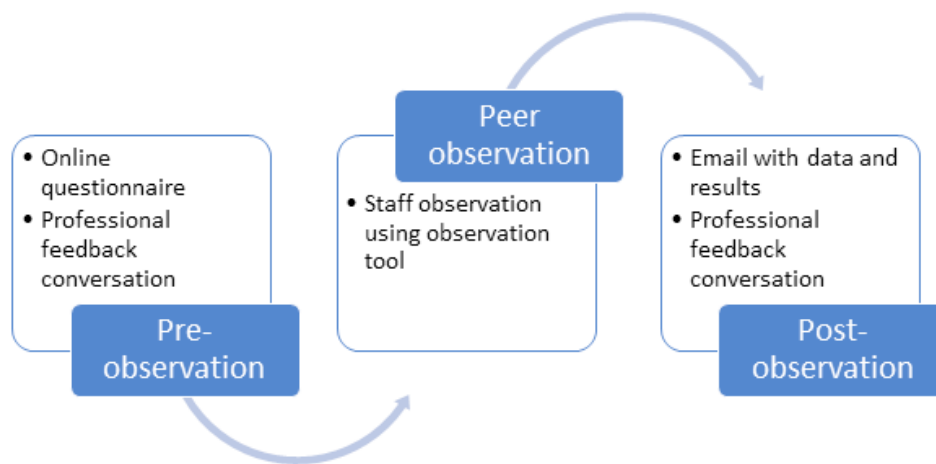


Figure 1: Peer observation process
[adapted from Bell's peer observation process – as quoted in Sullivan et al., 2012]

OP Observer development process

Paper-based observation tool

Description: We started the staff class observations with a paper-based version to observe the teacher-centredness and learner-centredness of our learning and teaching environment. As shown in Figure 2, the classroom setup (classroom furniture, whiteboard, door and the positions of learners) was manually sketched. The lecturer's positions and class activity types were recorded every 30 seconds, while noting down the exact activity the lecturer was engaged in. The activities were divided into two groups: teacher-centred and learner-centred (see Figure 3 below). The average total observation time was 30-40 minutes.

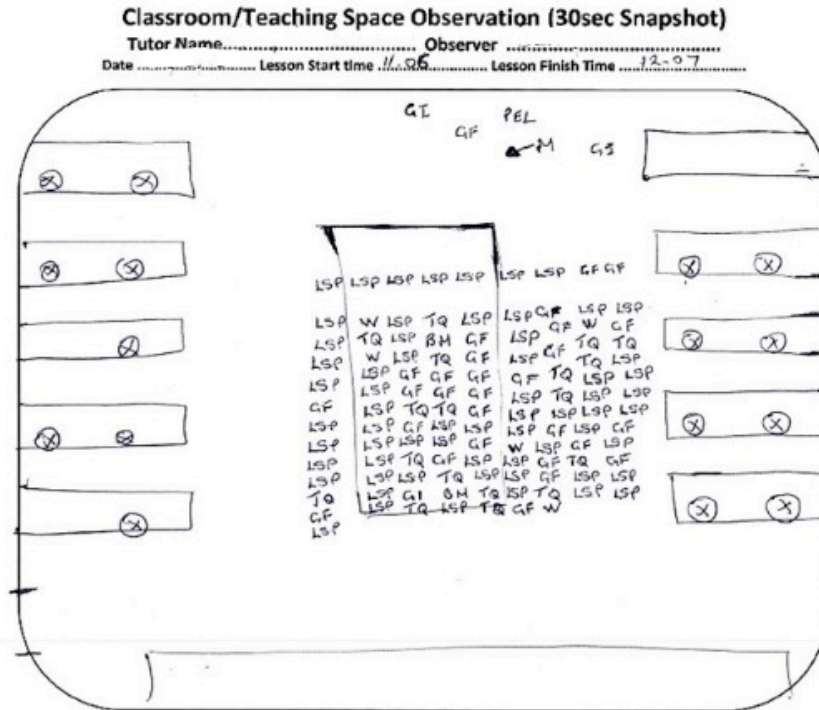


Figure 2: The original paper-based observation tool

Teacher Centred		Learner Centred	
1	One on one teacher individual student	Wv	Watching a Video or watching student activity
CD	Class teaching demonstration	PEL	Engaged in practical experiential learning activity
GI	Giving Instructions	REF	Reflective practice - Learners making meaning
Wh	Whiteboard writing (student copying)	GF	Giving feedback on learners ideas
TQ	Teacher asking questions	M	Moving around the learning setting
DP	Data Projector ppt teacher presentation	SQ	Teacher responding to student questions
BM	Behaviour Management	LSP	Listening to student presentations/ideas
L	Tutor lecturing		

Figure 3: Legend of teacher-centred and learner-centred activities

Feedback: The class observation team expressed that the paper-based observation process was time-consuming and that it was difficult to observe and take notes at the same time. Therefore, in order to improve the overall class observation process and provide better quality feedback for the lecturers, we decided to digitise the observation tool. We proposed to incorporate more built-in features such as being able to select types of teacher-centred and learner-centred activities, the classroom layout and the ability to map the teacher's movements in the classroom. A summary of the observation results was expected to be produced in the digitised tool.

OP Observer Web-based tool (version 1)

Description: Moving on to the digitised version was only possible with the help of one of our IT lecturers and his students on the Graduate Diploma in Information

Technology programme. They created this web-based tool to accommodate our requirements, as part of their final project. The system administrators (the class observation team) were given the authority to add and update the observer and teacher details and access the observation results. This tool provided a digital platform to observe and record 30-second snapshots of learner-centred and teacher-centred class activities. As illustrated in Figure 4, the observation codes of learner-centred and teacher-centred activities were on the sides of the screen, while the classroom setup was based on simple letter icons created to represent the furniture such as tables, chairs, board and door. The observer was able to code and map the teacher's activities. The observation report was generated based on the percentages of the class activities facilitated by the teacher (see Figure 5 for the results sample).

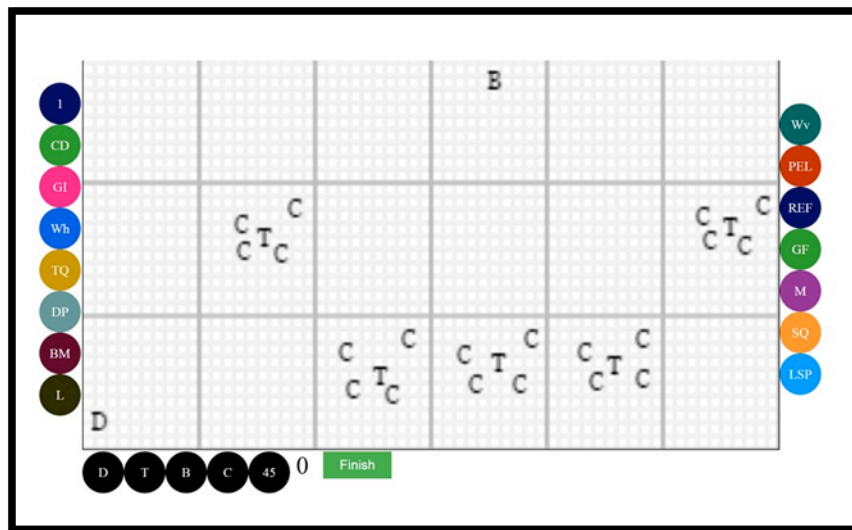


Figure 4: The Web-based class observation tool (version 1)

Observation Details

Code Name	Count	Percentage
Wh	2	8.7%
PEL	6	26.09%
L	1	4.35%
TQ	5	21.74%
SQ	2	8.7%
GF	5	21.74%
Wv	2	8.7%

Figure 5: Observation results screen

Feedback: After trialling the web-based class observation tool, we identified some areas for further improvement. Firstly, icons should be refined to reflect what they

really mean, for example chairs should look like real chairs. The OP observer tool should be able to capture the teacher’s position in the classroom. It was noted that the 30-second snapshot time was too short to record any changes in teacher activities. Overall, we requested to increase the user-friendliness of the digital platform and produce a graphical report or diagram under results, for the teachers to better reflect on the student-centredness of their class deliveries.

OP Observer Web-based tool (version 2)

Description: As shown in Figure 6, the updated version of the web-based observation tool was incorporated with more representative icons on the digital platform. The 30-second snapshot time was increased to 60 seconds, expecting to increase the accuracy of the observations.

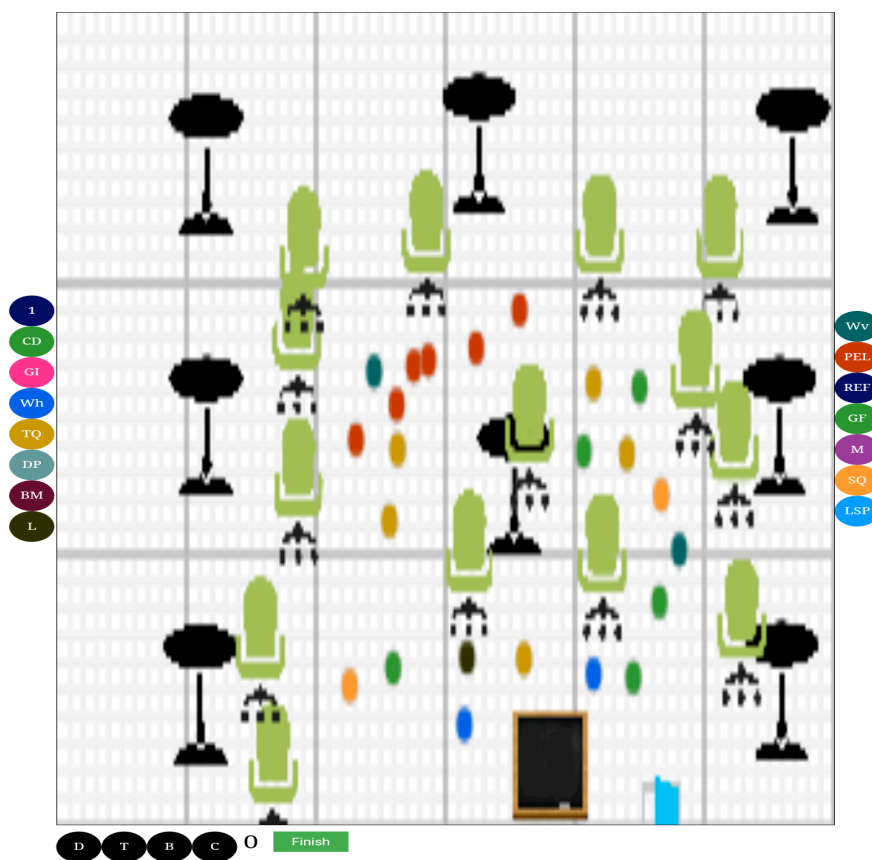


Figure 6: The Web-based class observation tool (version 2)

Application: This is the version we used for the 25 class observations as part of our peer observation process, as represented in Figure 7 below.

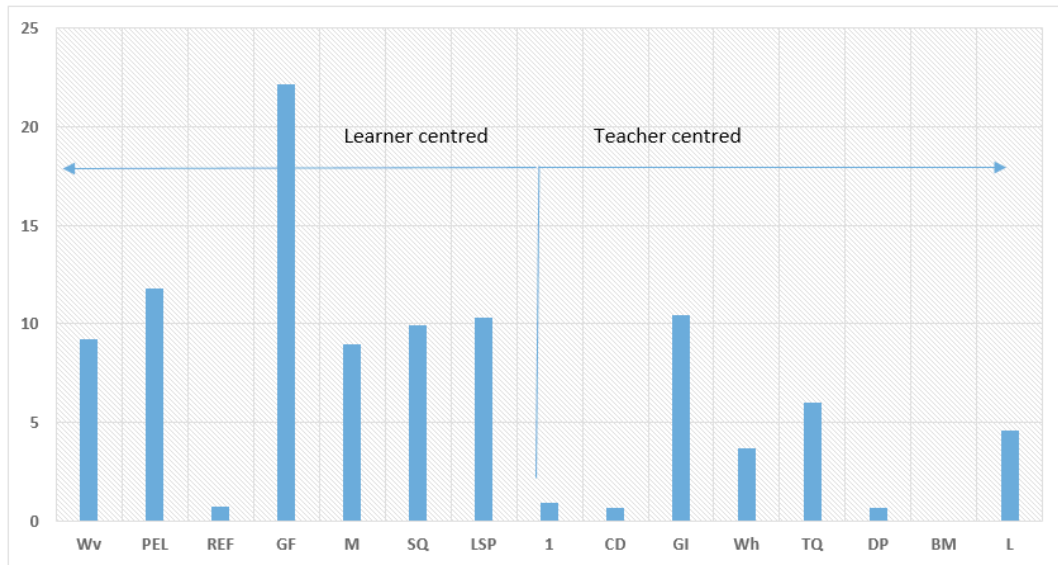


Figure 7: Observation results

The class observation results show that 27% of the class activities observed were teacher-centred and 73% of them were learner-centred. Giving feedback on learners' ideas (22%), engaging in practical experiential learning activity (11%), listening to student presentations/ideas (10%) and teacher responding to student questions (10%) were the four key learner-centred activities observed. However, reflection activities represented only 1%.

Feedback: After experiencing the updated web-based version of OP Observer, we decided to transform the OP Observer web-based tool into a Mobile phone application. The feedback received from the class observation team is summarised in Table 2 below.

Suggested improvement criteria	Description
To increase the user-friendliness of the tool	Restricted application in landscape mode to gain more space to design the classroom layout.
	Better quality graphical icons and functionality (e.g. zooming and rotating icons).
	Improved data entry system allowing the observer to insert the teacher's details representing their departments.
	Having a system that automatically selects the date and time. This would provide more time for the observer to setup the classroom layout.
To improve the security of the system	Having a login ID and password to log in with the observer's own details.
	Increased privacy and confidentiality of the observation results. For example, the observer should only be able to view and access his/her own observation report.
	Creating an administration panel for analysis of all observations.
	Creating a central database to store, analyse and generate overall observation results.
To generate graphical reports for analysis	Generating doughnut charts to support accurate and fast analysis. A diagram/graph was still not inserted in version 2 as part of the results report.
	Generating output that provides the teacher with data on their performance in terms of overall teacher-centredness and learner-centredness, written feedback and a map of teacher's overall movements during the observation.
	Having a system to automatically send the post observation result (both qualitative and quantitative) to the teacher.

Table 2: Feedback summary

OP Observer App

Description: The OP Observer App was developed relying on the feedback provided on the web-based observation tool. With the OP Observer App, the observer can conduct a class observation anywhere, anytime with a tablet or mobile device. The access to this tool is personalised with a registered user ID and password. The tool is capable of generating the observation start time, end time and date by itself. A virtual classroom layout can be easily designed with the 3D icons representing the furniture (Figure 8). The observation period is now customised (30 or 60 seconds). The activity code (learner-centred and teacher-centred) legend provides guidance to the observer throughout the observation process and is colour-coded for better visualisation. This tool has an undo button that helps to minimise any mistakes made by the observer. The results screen includes pie charts for both teacher-centred and learner-centred activities. After the observation is completed, an automatic email containing the results (percentage of the learner-centredness, classroom setup, photos and videos taken during the observation) is sent to the teacher. Overall, the OP Observer App significantly improved the security features and the user-friendliness of the interface.

The graphical output produced was highly readable. Appendix A provides a detailed presentation of this tool.

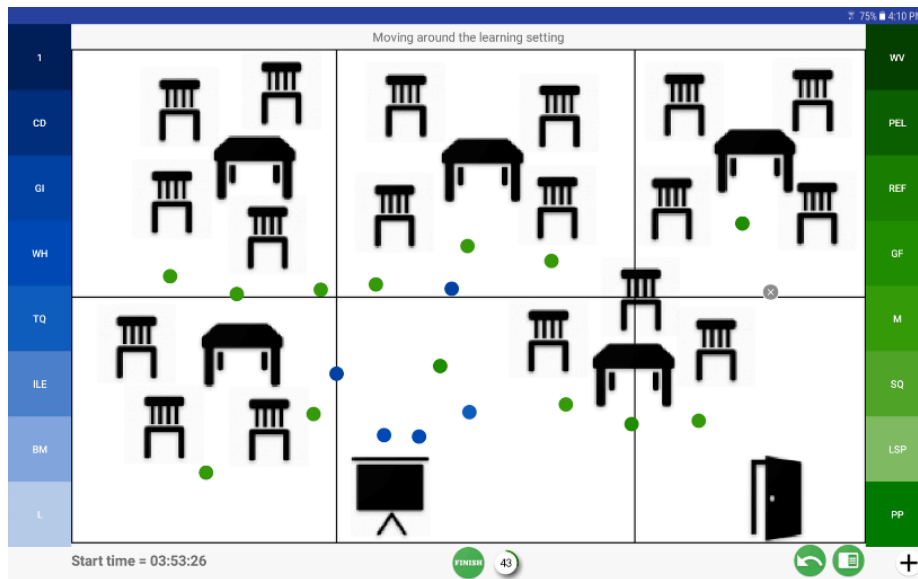


Figure 8: OP Observer App interface

Discussion of the results

This study aimed to evaluate the effectiveness of a class observation tool in measuring learner-centred practice at a New Zealand tertiary institution. We presented the development process of OP Observer from its paper-based version to its newest version as a mobile application. The final observation tool developed (OP Observer App) was evaluated by the class observation team in terms of its ease of operation, usage convenience and visual appeal (Lee & Lee, 2016) (Appendix B).

Ease of operation: the evaluators reported that the operation procedure of this app was simple and that errors made by observers are easy to correct with the aid of the undo button in the app. However, there should not be any unnecessary steps in the operation. For example, the operation process can be made faster by having the login details already in the system. Also, the floor plans/classroom setup should be in the system in order to minimise unnecessary time taken to set up the classroom in the app prior to the observation.

Usage convenience: the evaluators noted that the OP Observer App was easy to install on any portable digital device. However, as the app does not provide a user manual, it cannot be used without a demo from the class observation team. It was suggested that a step-by-step instruction of use (or an example) should be provided to guide and help observers (for example a manual, a short video clip, or a flow chart). The app should be getting regular updates to keep in line with new software developments. The results page at the end is automatically connected to the observer's email address, so that it can be saved and sent for later use.

Visual appeal: all evaluators were satisfied with the visual appeal of the OP Observer App. They noted that the screen design/look was attractive to the user and the navigation process was simple and enjoyable. However, evaluators suggested that the

navigation could be further improved by having an indication of the previous and the next steps of the observation process. They appreciated the presence of a graphical representation of post-observation results that indicated both the teacher-centredness and learner-centredness of the learning and teaching environment in detail.

Conclusions

It is challenging to determine the learner-centeredness of the programmes delivered in tertiary education. Therefore, a tool for observing, measuring and reflecting on the learning and teaching environment to improve learner-centredness is a valuable tool to help with this process. The OP Observer tool impacts on enhancing staff capability and ultimately student learning. The post-observation results can be helpful to identify areas for improvement and guide staff into further professional development. In addition, by recording this type of information, educational institutions can improve their learning and teaching performance. The development of this tool represented an excellent example of an interdisciplinary team project and overall, it helped create better staff relationships and inform staff goals. The fact that this whole process was done by a peer lecturer within the organisation, further increased its validity and overall staff motivation to improve their own teaching practice.

Recommendations for improvement

The OP Observer tool could be further improved for higher quality observation and post observation results. Class observations can be planned, and reminders can be sent out to observers and teachers. This tool can include text boxes so that the observers can provide positive and constructive qualitative feedback to the teachers.

The OP Observer App is used to measure learner-centred and teacher-centred practice, but this is not the only variable that can be measured. It can also be used to measure other aspects of teaching practice, such as teacher-learner rapport, learner engagement and capabilities or skills development. It could even be adapted to observe the learners' behaviour as well (for example what the learners spend most of their time doing in class).

Acknowledgements

We would like to thank Dr. Barry Law, former Innovation, Development and Change consultant at Otago Polytechnic Auckland International Campus, who came up with the initial concept of having an observation tool to measure learner-centred teaching practice. He designed the paper-based version of the tool and guided us throughout the development of the OP Observer tool.

We would also like to thank Dr. Hymie Abd-Latif, Senior Lecturer at Otago Polytechnic, for helping develop the digital versions of the observation tool, together with his students on the Graduate Diploma in Information Technology programme.

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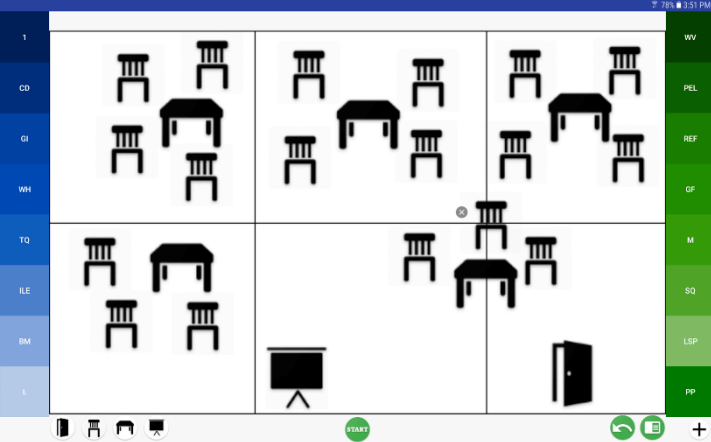
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Appendices

Appendix A: Screenshots and description of OP Observer App

OP Observer login page	
OP Observer user interface	
Virtual classroom setup with furniture	

Selection of appropriate student-centred and teacher-centred activity (legend)

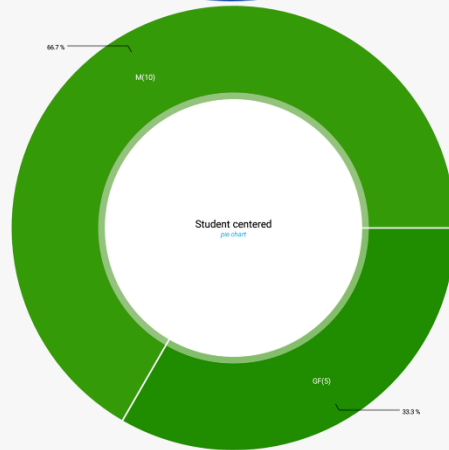
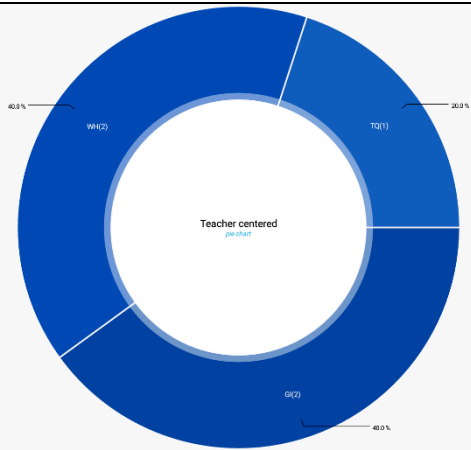
Positioning of the teacher in the classroom with the activity being conducted

Completion of the observation process and selection of the digital file sharing method

Observation results screen with percentages of student-centred and teacher-centred activities

Task Name	Count	Percentage(%)
one to one teaching	0	0%
class teaching demonstration	0	0%
Giving Instructions	2	40.0%
White Board Writing	2	40.0%
teacher asking question	1	20.0%
creating an inclusive learning environment	0	0%
behaviour management	0	0%
Tutor lecturing / PPT presentation	0	0%

Graphical representation of observation results



Appendix B: OP Observer App feedback results

Criteria	Completed	Needs work	Comments/details
Ease of operation			
The operation procedure should be as simple as possible	**	*	Faster log in process Floor plans/classroom set up should be in the system
There should not be any unnecessary steps in the operation	*	**	Floor plan/classroom setup User credentials should be in the system
Errors should be easy to correct (undo button)	***		
Usage convenience			
The app should be easy to install on portable digital devices	**	*	Because it is an old version, it cannot be installed on new phones for example
Step-by-step instructions of use should be provided		**	Manual would help in the future A short video clip or flow chart can be provided No user manual provided Cannot be used without demo from observers
The app should be getting regular updates to keep in line with new software development		***	New staff members added or remove do not get updated Not the latest version currently
The results page at the end should be automatically connected to the observer's email address, so that it can be saved and sent for later use	***		At the moment it is only connected to Gmail
Visual appeal			
The screen design/look should be attractive to the user	***		
The navigation should be simple and enjoyable	**	*	How about showing the next step?
Graphical representation of teacher-centred and learner-centred activities should be provided (e.g. results screen)	***		

[adapted from Lee & Lee, 2016]