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# Community of Ownership of Learning

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*Keywords :* *connected learning, collaboration, digital media, tablet pc, connectedness, ownership of learning, engaging parents.*

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## I. Introduction

Our students belong to the Net Generation cohort of young people who have grown up in an environment in which they are constantly exposed to computer-based technology. Their methods of learning are different from those of previous generations. Students demand greater control of their own learning and the inclusion of technologies in ways that meet their needs and preferences (Prensky 2005). To better understand what the Net Generation expects from technology in support of learning, we must first understand how the Net Generation defines technology. The Net Generation's views on technology in the classroom include the expectation that professors will use technology to better communicate expert knowledge. (Gregory R. Roberts 2005).

Hence, the Connected Learning Pedagogy (CLP) was introduced, incorporating technology to provide students with a rich learning environment that enhances interaction, connectedness and promote ownership of learning. PRISM, an apps for mobile phone, provide a new means for parents to become connected to student learning, engaging parents with the material that students learned in the classroom.

## II. The Connected Learning Pedagogy (CLP)

The CLP leverages on the strength of today's interactive and networked media in an effort to make learning more interactive, better integrated, and broadly accessible. Students collaborate and learn through various digital platforms such as Social media, Moodle, World Wide Web, YouTube and iDe'Lite to establish a learning community. Tablet PCs with its many useful apps offer unique abilities for presenting materials in new ways. Being light weight and free from wired connections, our lecturers is able to better connect with students by bringing it to their work station to clarify their doubts.

The CLP framework in Figure 1 depicts the connectivity it provides; connecting students, lecturers and parents. Through CLP, interactivity among students and lecturers are greatly enhanced, making learning much more engaging. Parents are happy as they have access to communications and relevant information concerning their child.

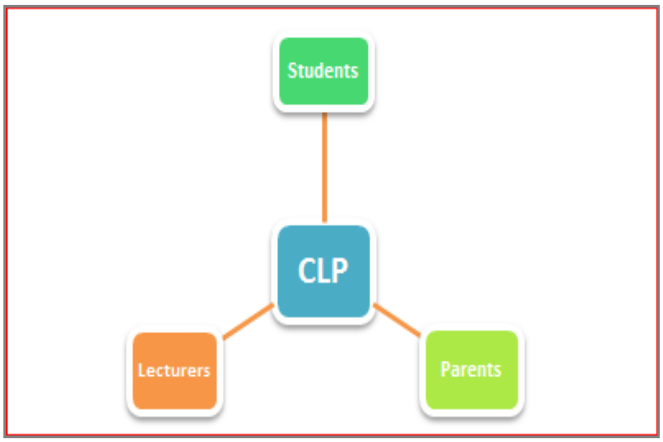



*Figure 1 :* CLP Framework

CLP comprises of 4 stages of learning activities which were Group learning, Reflection, Experiment and Assessment as shown in figure 2. These learning activities were designed for students to go through when they are taking the practical lesson. Tablet pc, social and digital media were tools used to support CLP providing students and teachers with connectivity with one and another and the outside world, enhancing the learning process.

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*Figure 2 :* Stages of CLP

*a) Group Learning*

The term "collaborative learning" refers to an instruction method in which students at various performance levels work together in small groups toward a common goal (Anuradha A. Gokhale ,1995). According to Johnson and Johnson (1986), there is persuasive evidence that cooperative teams achieve at higher levels of thought and retain information longer than students who work quietly as individuals. Group learning in CLP is synonym to collaborative learning, whereby students work in small groups to solve a problem.

Lecturers begin the lesson by asking review questions to recall concepts learned in the previous lesson. Adopting peer supported learning, students work in pairs or small group to discuss and derive the solution. By talking and discussing, students engaged actively in the learning process developing communication, collaborative and problem solving skills. The shared learning gives students an opportunity to engage in discussion, take responsibility for their own learning, and thus become critical thinkers (Totten, Sills, Digby, & Russ, 1991).

*b) Reflection*

We learn by experiences that allow us to Absorb (read,hear,feel), Do(activity), Interact (socialise) (Wertenbroch & Nabeth, 2000). In addition we can also learn by reflecting on such experiences (Dewey 1933). Reflection is defined as making sense of past experience in order to affect and understand future experience.

In the 2nd stage of pedagogy model, reflection is practised by the students to engage them in deeper learning. Lecturers can pose some questions to trigger the thinking process. Video content can be used to introduce a new topic. Questions can be asked to spark off a group discussion connecting the knowledge in the video to past knowledge. When something new is experienced the learner recollects prior knowledge and tries to make a connection into the existing cognitive or metacognitive network of ideas. In other words we make the new piece of the jigsaw 'fit'(Karen Hinett, 2002).

Students will connect to the various media tools to research, perform group discussion and reflection. Through this process, our students will develop the habit of performing reflection to deepen learning.

*c) Experiment*

Having done recap and introduction ground work in the first 2 stages of the learning cycles, lecturers can now conduct the experiment or practical assignment for the new lesson. In the 3rd stage of CLP, experiment, students put into practice the knowledge acquired in the theory lesson. They worked on the practical assignment given in the job sheet. Students worked in groups to complete the practical assignment, making use of the www, YouTube, iDe'Lite(in-house video portal) and social media for information and discussion. When students independently search for information on the internet—that is, when students engage in self-initiated information-seeking behaviors- the level of autonomy should be relatively high and thus lead to more cognitive engagement (Jerome I. Rotgans and Henk G. Schmidt, 2010).

Lecturers moved around the laboratory with tablet pc, using it to illustrate concept or clarify doubts. For students who are not comfortable with asking aloud in class, they could connect with their lecturers online to pose their queries. Lecturers are able to answer queries online using tablet pc as a tool.

*d) Assessment*

After completing the experimenting stage, students proceed to the final stage of CLP which is assessment. In our case, we have adopted online quizzes for this final stage of CLP. Moodle was the platform that we utilized to house the online quizzes. Students will attempt the online quiz at the end of the practical lesson to confirm their understanding of the content. Result of the attempt will be available immediately upon completion of their quizzes.

Feedback needs to be timely and relevant to the learner's needs in order to be effective (David Wees, 2010). Online quizzes provide students with immediate feedback enabling them to reflect and take corrective action promptly to improve on the weaker topic. Responses to the quizzes are recorded against the student name, allowing lecturers to evaluate the performance level of the students and subsequently focus on the learning concerns of individual question.

On the other hand, lecturers can be connected on-line via tablet pc to view the results of quizzes taken by students. The results of the quizzes provide lecturers with timely feedback on their teaching effectiveness for the lesson. They then could take corrective action if necessary.



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## III. Implementation of Connected Learning Pedagogy

A lesson delivery plan was created to guide lecturers in their lesson delivery using the Connected Learning Pedagogy. The lesson delivery plan documents the suggested activity for both students and lecturers using the CLP model. In each stage, the allocated time for the activity and its objectives were documented in the lesson delivery plan. Some follow-up actions are also included in the lesson delivery plan which is especially helpful for new lecturers. Lecturers will use the new lesson delivery plan as a guide to conduct their practical lessons.

Many sharing sessions were conducted to equip lecturers with the knowledge of the pedagogy model, tablet pc literacy and quiz development using the Moodle platform. All laboratories were equipped with a tablet pc which the lecturers used it as a tool to facilitate the learning process. Role play was also used to familiarize lecturers with the new role of facilitating learning in a connected environment using tablet pc.

A scheduled walk-about was carried out 2 weeks after implementation of the CLP to gather feedback from staff and students on implementation issues. Some teething problems such as passwords issues and retrieval of results by class were surfaced. Initially, the view results menu displayed results of all students taking the similar module instead of displaying results by class. With the help of the Technical support team, these issues were quickly resolved.

## IV. Survey Results

### *a) Students Survey 1*

After implementing the CLP for three months, a survey was carried out to 244 students. The result of the survey is shown in Figure 3. The survey seeks to gather the impact of CLP on students learning.

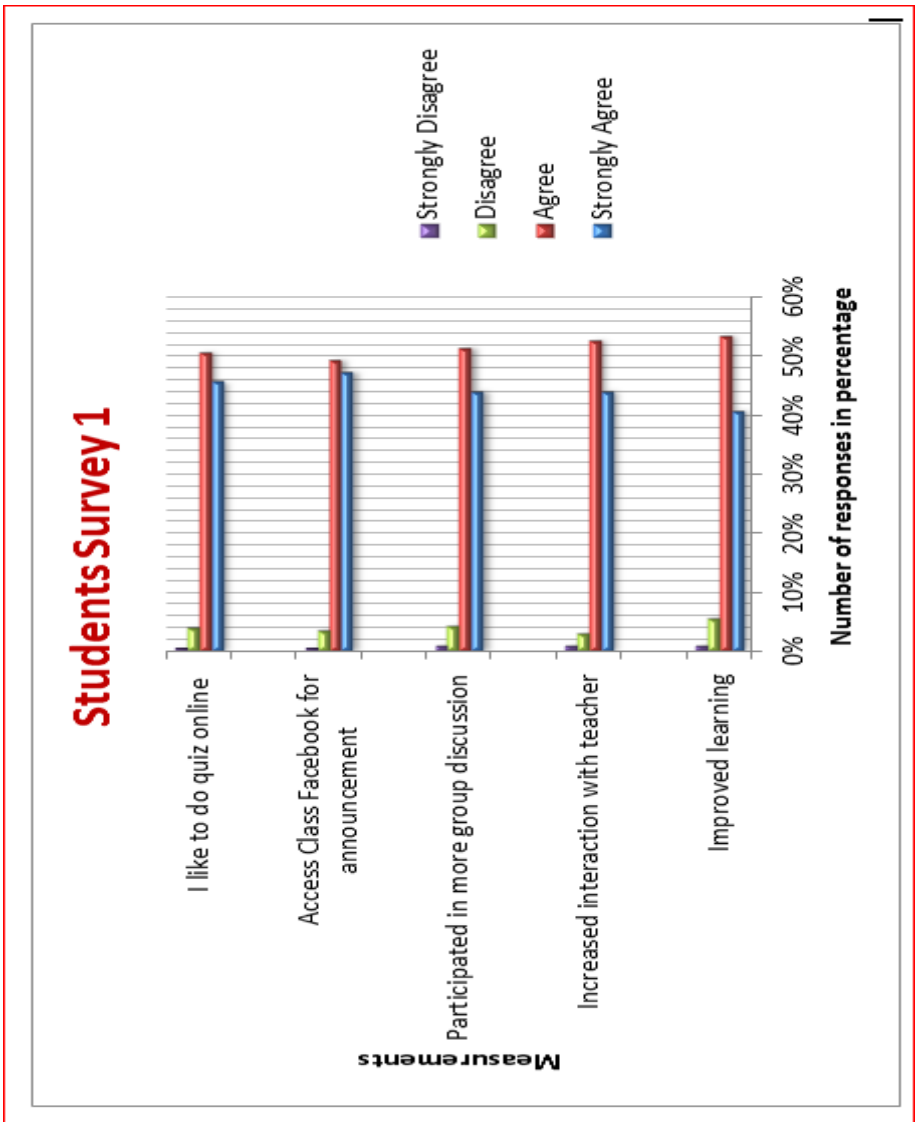



*Figure 3 :* Student Survey 1 Result



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Students have taken more responsibility in their learning as they reflected that they like to participate in on-line quizzes which provide them with immediate feedback. With the introduction of Class Facebook, students were kept informed of the upcoming activities posted by their lecturers, developing independence. With the introduction of CLP, students have more opportunity to engage in discussion and take responsibility for their own learning, meeting their quest for more autonomy and collaborative learning. More interaction was made possible with the introduction of the tablet pc giving lecturers the mobility to move around the class to facilitate learning

*b) Students Survey 2*

Another survey was carried out 6 months after the implementation of the CLP. In this 2nd survey, open ended questions were deployed to obtain feedback from both staff and students. Students provided both positive feedback and suggestions for improvement which allowed the team to fine-tune the CLP strategy for better lesson delivery.

Many positive feedbacks were received from students. They reflected that quizzes are very useful as they were able to recap what were learned previously. It was a fast and easy way to obtain feedback on their understanding. Some students commented that doing online quizzes is more interesting than doing worksheet in class. Students also mentioned that they were able to attempt tutorial questions even if they forget to bring their tutorial book.

As for tablet pc, students commented that lecturers were more mobile, able to move around to interact with them. They reflected that lesson is more fun with tablet pc and it is a cool and great device.

However, some students commented that time is quite tight to do the online quizzes especially for a 2 hours practical lesson. Another issue raised is that the tablet pc does not support flash player. Some students mentioned that they sometimes experienced system lag problem.

*c) Lecturers Feedback*

Lecturers' feedback is just as important as students' feedback in the CLP implementation. Hence, a survey was conducted to gather feedback from the lecturers involved in the CLP implementation.

Lecturers reflected that the online quiz is helpful to them as they are able to access the quiz results immediately. With these results, they were able to judge how well their lesson was being delivered and take corrective actions if necessary. They were able to gather information on who were the weaker students and provide additional help promptly.

Having a good implementation framework in place, lecturers were comfortable to deliver lesson using the CLP pedagogy. With the tablet pc, lecturers can connect better with the students. They were able to interact well with the students by going around the class using the Tablet pc to clarify doubts.

Some lecturers commented that it is troublesome to download videos and lesson materials as the tablet pc is kept in the laboratory. Also, sometimes the lesson contents were erased as the tablet pc is shared among many other lecturers. They suggested that all lecturers to be equipped with a tablet pc. In addition, lecturers commented on the security issue of the tablet pc, as it is being left unattended when they were assisting students with the practical experiment. As the tablet pc in use was unable to run program that required flash, they suggested considering other types of tablets that run on different Operating System.

## V. Connecting Parents to Students Learning – Prism

We recognize the importance of engaging parents, families and communities in positively influences student educational achievements and attainments. Parents and school partnership are a critical component of successful results. This is particularly true of schools in challenging circumstances where the students face social and economic odds.

If trust and mutual respect between parents, lecturers and students is to be achieved, communications and access to relevant information is important. This will also allow the school to build a strong parent-student-teacher relationship throughout the course of student's study. PRISM serves as a bridge connecting ITE, parents and students through the mobile apps as shown in figure 4.

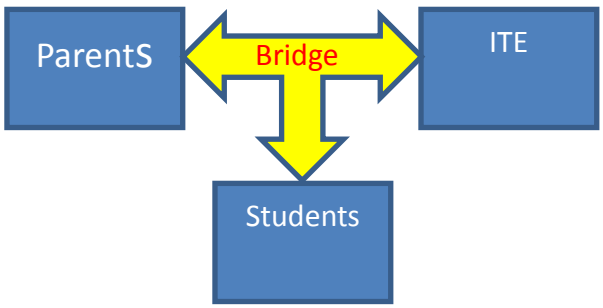



*Figure 4 :* PRISM Framework

Central to the core of the challenge, the method adopt must meet three important criteria:

1. It will facilitate parents to actively participate in their children academic journey in the College.
2. It should able to complement the hectic lifestyle of the modern day parents.
3. It is envisage that lecturer's time will be better utilized to support teaching and learning, instead of administrative tasks.

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There is the e-portal that the parents can access to information of their child's attendance, timetable and teacher's contacts (email address and telephone number). This is wonderful but there were concerned that its use was limited to those parents with easy daytime access to a laptop or PC.

We therefore investigated the possibility of extending it to use by mobile phone browsers, thus enabling a wider range of parents to access it. But the navigation within a much smaller screen proved a great difficulty.

Building from the idea, we decided to develop a mobile app that can allow parents to access the information needed and remove the navigation difficulty of a browser in a small mobile phone' screen.

*a) Ite Prism Mobile App*

Initially, we developed a mobile app that allows the parents to access their child's individual timetable and the school vacation. The mobile app was well received by both parents and students through a feedback survey. They requested for additional information to be included in the mobile app. They wanted to see their child's attendance and academic progress in the class too.

As such, we developed the ITE PRISM (ITE Parents' Real-time Information System on Mobile) as shown in figure 5, mobile app to fully engaged parents in their children's learning, using effective technologies. The innovative approach is able to provide up-to-date 24/7 information to the parents.

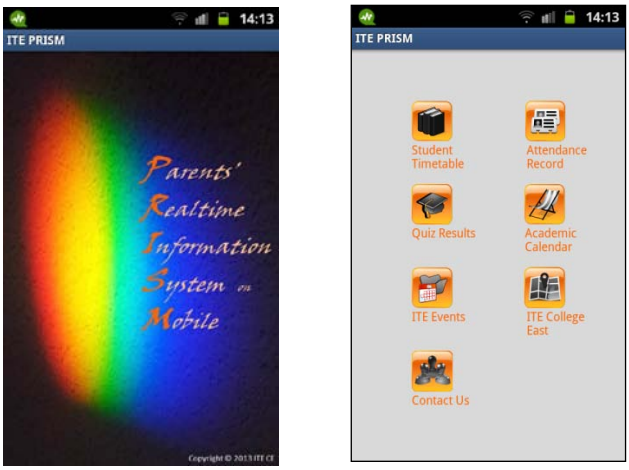



*Figure 5 :* PRISM

Enabling as many parents as possible to access information is important for parental engagement. The adoption of such an approach enables In addition, these IT developments have allowed both parents and staff access to the same range of data.

From another survey conducted, it shows the effective use of the mobile app also alleviates the access information about their child's progress 24/7. If pressure of face-to-face communication as parents can need to, they can email or call the respective teacher with the teacher's contacts provided within the mobile app. In addition, parents feel that they have timely and appropriate information to be able to help their child's learning. There is also a feeling of ownership in their child's education journey.

The ITE PRSIM mobile app becomes an intelligent reporting of providing real time information on a child's progress, learning and attendance. This direct information sharing allows the parents to be informed in a timely way and at their own convenient time to access the information.

## VI. Conclusion

With the adoption of the Connected Learning Pedagogy, a community of ownership of learners was developed, leveraging on the affordances of digital and networked media. More opportunities were created for students to communicate, think together, share ideas and construct meaning by discussing and collaborating. The periodic online quizzes in final stage of CLP not only provide lecturers with feedback on their students' learning but they also serve to help students evaluate their own learning. As students learn to monitor their progress, they become more motivated by their successes and begin to acquire a sense of ownership and responsibility for the role they play in these successes (Kanfer & McCombs, 2000).

PRISM provides a key link for parents to access their child's learning progress, attendance, timetable and teacher's contacts. Through PRISM, a strong parent-student-teacher relationship was built throughout the course of student study. Parents active involvement with their child's education at home and in school brings great rewards and can have a significant impact on their children's lives (Anita Gurian, 2010).

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