KEEPING UP WITH TECHNOLOGY FOR STUDENTS ENGAGEMENT

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Project Description

We can't deny that our young generation is so much engaged with gadgets and internet. This situation is also happening in my school context. Most of the students are disturbed and furious when their cellphones are confiscated due to the school's policy – no gadgets allowed in school compound. This policy was made in order to protect our students from being disrupted while studying or being exposed to unnecessary or too early information for their age. Nevertheless, it seems to be difficult to detach students' mind from their gadgets. The moment they finish school, gadget is the first thing they look for.

The young generation nowadays build relationship and learn through technology. In a research done by Kementrian Komunikasi dan Informatika Republik Indonesia (KOMINFO) and UNICEF about **Teens' and Children's Behaviour in Using The Internet** *shows that from 30 million children and teens -who were involved in the survey - 98% of them are aware of internet usage and 73.5% of them are internet active users. They found that Children and teens are using internet mainly to access and search for informations, to maintain connection with friends and for the sake of entertainment.* Therefore, we need to embrace technology in order to capture students' attention and attract their interest in learning.

Students acquire the skills of using technology much faster than teachers. They are not only able to use their gadgets to chat with one another but also to learn many different things that interest them more. As an educator, we can't ignore this technology enhancement. We have to keep up with it in order to guide our students to the right direction of their study. Hence, teachers' point of view regarding to technology or internet usage in teaching and learning should be transformed, their competency in teaching should be upgraded especially related to technology handling.

Seeing those facts and needs, I decided to make a project – *Keeping up with technology for Students' Engagement*.
The goal of the project is to improve students' engagement in classroom activities through technology usage in class as well as upgrading teachers' competency in ICT

In the long run, I hope that a transformation of learning methodology by infusing technology in class would not only enhance students' engagement in learning but also improving their ability and skills in certain ways.

School/Institutional Context

Location:
Block H4 No. 6 Citra Garden 2, West Jakarta
Block P6 Citra Garden 2, West Jakarta
Block B1 Citra Garden 7, West Jakarta

Levels:
Pre-school
Kindergarten
Primary
Secondary
Junior College

Student Population:
1018 students

Staff Population:
90 teachers and staffs

Year School founded:
Year 2000

Type:
Private School
(SPK- Satuan Pendidikan Kerjasama / international standardized school)

Transformational Action Plan

Kairos Gracia Christian School is not a big - private funding- school which have fancy facilities. In spite of this, we were very grateful of being able to cater over 1000 students and be involved in their lives transformation. Our teachers' commitment, care and well build relationship toward these students have become the magnet, drawing students attraction to our school. Nonetheless, there are still some situation in the school that needs to be improved.

Facility Improvement
Although we have used a server to store data, I found that not all teachers were saving their files in it. It was because the connection is low and not stable which cause teachers disconnected to the server. Since we have 3 separate locations of school where teachers and staffs sometimes needs to collaboratively work on certain data or files, we end up with sending our office boys going back and forth for documents transferring. I think this situation should be handled better and the use of current technology could be one of the solution to it.

With the school policy of not allowing students to bring gadgets at school, we are pulling our students from keeping up with technology enhancement. This, of course, is not a good thing to do seeing the fact that these young generation needs to be prepared for so much technology disruption in the future. One computer lab only is not enough

for students and teachers to use. I need to think of a solution to it without breaking the school rule.

Other concern regarding to facility is that we have no IT personnel standing by at school to help when technical problems appear.

Lack of Teachers Competency in Technology
Quite a number of teachers are having difficulties to cope with the rapid change of technology enhancement. Students are learning through digital medias faster than the teachers. As a result, classes turn to be boring and less challenging. Responding to that, teachers need to work smarter as well as upgrading themselves to face changes in students' behavior and action in class. They need to be equipped with more creative methodology in teaching. One of the skill that teachers need to improve is the use of technology in class. However, moral values and character development of students should not be neglected.

Time Management
Considering the busy teaching schedule, heaps of paper works to do and school programs to managed, teachers need to be supported with effective time management to cover all the work they have. Again, technology application could be one of the way to work it out.

Students' Engagement in Class
With variety of approaches in teaching and several outdoor activities conducted, students seem to be okay with it. The use of pen and paper is quite acceptable so far. However, we can't ignore the situation out of the school compound. The fact that students are engaged to gadgets more than their study should be considered. Their interest toward school was distracted and their attention span in class is shorter. Since they were able to surf for learning materials via google or youtube, some of them have prepared themselves prior to the class and have more advance information regarding to the topic discussed. Simultaneously, these students also found that learning in class is less engaging as they have already known and comprehend what the materials is about. Thus, being bored, they sometimes disturb their peers in class.

On the other hand, other students are using gadget unwisely. They spend more time in entertaining themselves, playing games or chat with their friends and paying less attention to their study. This disruption is addictive and cause students to be less attentive in class. Therefore, we need to find a solution to this situation.

Considering these problems, I figure that technology or ICT application would be answering the needs and solving several problems appearing.
Some preliminary actions of solutions are:
- Wi-fi connection must be upgraded.
- Learning tools should be provided.
- Teachers needs to be trained.

Hence, I come up with several options of solution:
1. *BOOKWORM PROGRAM*
   Teachers are given a target number of readings to read in certain period of time and write a summary or do a presentation about it.
   Readings could be in the form of books/ articles either printed or digital.

IMPLICATION
- Teachers' language proficiency will be improved.
- Teachers will be aware of various teaching methodology.
- Teachers will enhance their knowledge in technology.

2. ### *TEACH LESS –LEARN MORE*
Reducing teachers' teaching load in order to give them extra time to learn and enhance their knowledge.
Teachers can also be given scholarship from the school to upgrade themselves.

IMPLICATION
Teachers are able to find extra time for them to learn and upgrade themselves.

3. ### *PROFESSIONALS GET TOGETHER*
Teachers are trained to use upgraded technology in getting information, use the technology to connect with one another and to have technology trainings and sharing on regular basis.

IMPLICATION
- Teachers are able to practice and use the updated technology.
- Teachers are given the opportunity to learn at their own phase.
- Teachers build teamwork among themselves during the sharing sessions.
- Teachers are less pressured as it is schedules and arranged by the school management.

Among the options of the solutions, I prefer to choose option three (3). Option one (1) seems to be boring and less practical for teachers. This might not give significant impact as some of the teachers might turn to read paper based books instead of digital. Besides, teachers might not be exposed adequately to technology. Option two (2) is rather difficult to do because reducing teaching load will be a reduce to students' learning hours at school as well. This could be affecting on the change of syllabus as well as driving parents' complains. Whereas in option three (3) I can see more implications of the program, technology or ICT is more exposed, teachers' progress in the training can be observed and application of technology in class could be done right after the trainings. Of course, time is still something to consider to do this plan and so, I need to be a little creative to make it work.

Gantt Chart

I started the project by making a gantt chart to enable me to keep track on the progress on it. There was a revision to the initial gantt chart I made, due to some adjustment on the time allotment. Since application of technology in class was not possible to be done before the teachers were trained. The implementation of intervention was starting with teachers' trainings followed by the application of technology in class. Thus, I need more than four (4) months, from March to June, to both prepare my entrepreneurs – the teachers – and to do the application.

Other issue regarding to this chart is that the school examination and break came along in the month of May and June, which disrupt the transformation plan. It forced me to add extra time and prolong the project a little while.

The revised gantt chart is as follows.

Transformational Action Plan Gantt Chart

Goals/Objectives	March				April				May				June				July				Aug
	Wk1	Wk2	Wk3	Wk4	Wk1	Wk2	Wk3	Wk4	Wk1	Wk2	Wk3	Wk4	Wk1	Wk2	Wk3	Wk4	Wk1	Wk2	Wk3	Wk4	Wk1
Finalisation of TAP	X																				
Literature review (What theories guide your project?)	X	X	X																		
Obtaining approvals from relevant stakeholders	X	X																			
Implementation of intervention (How will TAP address the situation?)			X	X	X	X	X	X	X	X	X	Exam week	X	School Break	School Break	School Break	School Break	X	X	X	
Measuring the impact of TAP using KPIs										X	X								X	X	
Preparing Final Report																	X	X	X	X	
Finalising Critical Reflective Portfolios																	X	X	X	X	

Table header information:

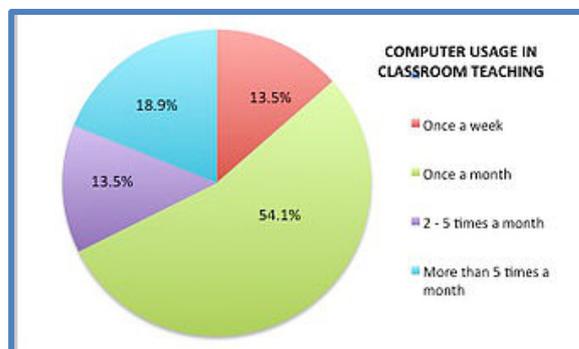| Transformational Action Plan (TAP):	Keeping up with Technology for Students' Engagement.
Vision:	Capture students' engagement in classroom activities and learning by enhancing teachers' competency in handling technology within the school's policy boundary.
Key Performance Indicators (KPIs)	1. Students' engagement in learning is improved. 2. Teachers are inspired and motivated to utilize technology in the classroom. 3. Teachers are able to operate certain application using iPad.

Evidence of Transformation

To conduct this project, I need to know what the teachers - as my entrepreneurs - think about the use of ICT in class, how often they used ICT in teaching and what type or programs do teachers currently use. Therefore, I distributed a survey form to collect data about it. After giving the questionnaires, I found that among 37 teachers who answered the questionnaire:

- 100 % of them have integrated ICT in class.
  They use computers but only 2.8% of them are using certain programs or applications in regular basis. Others are using computers for class preparation such as making lesson plans, class journals or simply for presentation (power point) or video playing in teaching.
- Frequency of using ICT in class is shown in the diagram provided.

COMPUTER USAGE IN CLASSROOM TEACHING

13.5% — Once a week
54.1% — Once a month
13.5% — 2 - 5 times a month
18.9% — More than 5 times a month

- 81.1% of them thought that it is important to infuse technology in teaching.

Respondents of the survey have different reasons of not using particular apps or programs such as limitation in facilities and resources, distractions of irrelevant websites or social medias, unstable internet connection and lack of knowledge that can be curbed by more training in technology.

- 55.9% of them still prefer to conduct conventional class instead of digital class.

Upon knowing those facts, in order to integrate technology and enhance students' engagement in class, I need to equip teachers with adequate knowledge and skills in ICT by introducing useful programs and applications, provide necessary resources and facilities needed as well as uniforming perception among teachers that technology could be fun and useful for students to learn with.

Convincing the school board – as one of my sponsors – to facilitate teachers and students with some tools regarding to technology enhancement, I started to work on arranging some workshops for teachers by inviting several expertise in the field. As a result, I managed to get 28 new iPads for Secondary and Junior College and 12 new iPads for Primary teachers and students to use. Meanwhile, teachers were scheduled to join several times of workshops:

- 16th March 2018 : "Introduction to iPad features – How to use them"
  In this session, teachers experienced the fun and interesting way of using iPad and found how engaging and useful this tool is in teaching. The engagement and enthusiasm of the teachers during the workshop had given them the idea that students could enjoy and be engaged in the lesson as they did.

- 26th March 2018 : "Engaging Learning with iPad"

  With less participants required by the speaker, we can only foster 22 teachers for this workshop. Some programs and useful applications were introduced during the workshop such as QR code, Padlet and Trello as well as introduction to digital citizenship theory and SAMR approach.

  Workshop presentation file:
  https://docs.wixstatic.com/ugd/1d4b52_1eb617ee3eee425ca815f1d2d7149add.pdf

- 18th April 2018 : "Review on Classroom Apps and introduction to Socratives"
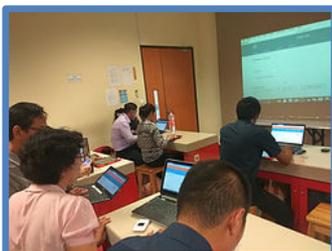
  This workshop was basically conducted on sharing between teachers in order for them not to forget what they have learnt and to keep the energy / spirit of transformation on.
  At this point, teachers were not ready to share and apply their limited knowledge in ICT to students and

the situation in school was not supporting to it. It was because the upper level students were starting to have their final examinations while the lower secondary and primary level were having 2 weeks continuous program of parents'day celebration .

- 8th August 2018 : "Everyone can Create"
  The last workshop was conducted in August after the school break and the new academic year started. The workshop managed to pump up teachers' enthusiasm in using the ICT more creatively as well as encouraging them to apply this technology in teaching.

In between the third and fourth workshop conducted, some primary teachers have tried to use the iPads in class. Although the number of teachers who used it were very little – 4 teachers only – it gives impact to at least all students in the parallel classes they taught. It was Character Building class of grade 6, Religious Education and English class of grade 3 and Mathematics class of grade 2. I was able to join in each of those classes and observe some situation during the implementation of technology. Then,

 when the new academic year started, other teacher managed to apply QR Code in Primary 6 - Mathematics class. Here are some findings regarding to it:

- Most students were enthusiastically participating in the class activities.
- In group work, using the QR code to follow instructions and finding information for certain questions, students were able to cooperate and collaborate with one another completing the assignment given.
- Technology did not seem to hinder students in interacting with one another, instead, they were working cooperatively. So far, I found that technology did not distract students' learning process but it increases their curiosity and enthusiasm in learning.

one for two basis made few

- The use of iPad on (1 iPad for 2 students) had students unengaged to the

activity conducted especially when they were working with socratives, students had to wait for their turn to be able to answer teachers' questions individually.

- Some teachers needed more practice in using technology as some of them were not able to connect students' iPad to classroom app, accidently deleting students' report and inputting wrong information when creating QR code.

A video - one of the class activities in using iPad : https://youtu.be/rLEKnBx4gkI

To find out how students' feel and response on the use of technology in Primary classes, I distributed a survey form for students to fill in.

Result of the survey can be observed in the table below.

Questions	Total Respondent	Strongly Disagree	Disagree	Neutral / Have not decided	Agree	Strongly Agree
The subject is more interesting when using ICT.	176	3.40%		27.30%	34.10%	35.20%
The use of ICT helps students to be more focus.	177	11.30%		40.70%	20.90%	27.10%
Students enjoy working together using ICT.	177	6.20%		16.40%	34.50%	42.90%
Students understand the materials better when using ICT.	177	8.40%		42.40%	31.10%	18.10%
ICT distracts students' attention in studying.	177	25.40%	27.70%	29.90%	11.90%	5.10%
Students want to learn ICT more.	177	1.7%%		27.70%	70.60%	

Questions	Total Respondent	more than 6 hours a week	5-6 hours a week	3-4 hours a week	1-2 hours a week	1-3 hours when I have exam
Length of study time **before** using ICT.	176	11.40%	6.80%	26.10%	30.70%	25.00%
Length of study time **after** using ICT.	175	8.00%	6.80%	26.90%	30.30%	28.00%

From the above table we can see that although more than 60% of the students, who participated in the survey, agree or strongly agree that classes were more interesting and enjoyable when using technology, less than 50% of them thought that technology helped them to focus on the lesson nor understand the materials better. However, in terms of length of study, there is a little improvement that few more students study between 1 – 4 hours a week. Yet, there is also quite significant difference in the other category such as less students study for 6 hours a week and more students study for 1-3 hours only when exam is coming.

In secondary and junior college level, technology could only be applied in class when the new academic year started. Several teachers were using google classroom or kahoot and one teacher was applying class craft in his Biology class.

Given similar questionnaire to primary level, students' response is as follow:

| Questions	Total Respondent	Strongly Disagree	Disagree	Neutral / Have not decided	Agree	Strongly Agree
The usage of ICT in the classroom has increased my interest to the subject.	106	-	3.70%	40.60%	36.80%	18.90%
The use of ICT helps to focus on the subject better.	105	0.90%	10.50%	56.20%	23.80%	8.60%
The usage of ICT fosters more interaction.	106	6.00%		46.20%	36.80%	11.30%
Materials are easier to understand as I can customise the pace of learning by myself.	105	-	8.60%	31.40%	40.00%	20.00%
ICT can be distructing during lecture / when I study.	106	9.40%	13.20%	37.70%	34.90%	5.20%
Instructional materials uploaded are effective and useful.	105	2.90%		33.30%	45.70%	18.10%
I prefer to do and submit homework using digital device.	105	3.90%	19.00%	37.10%	21.00%	19.00%
I will recommend the usage of ICT for other classes / subjects.	106	8.5%%		24.50%	38.70%	28.30%

Less than 60% of the respondent in Secondary and Junior College level agree or strongly agree that ICT increases their interest, nevertheless, 60% or more of them thought and felt that they understand the material easier and were recommending the usage of ICT in variety of classes. Most students were not sure or thought that ICT can be destructing during the lesson.

In terms of the length of study, we can see some improvement in certain period of time, the range of study between 1 – 6 hours per week is improved.

| Questions	Respondent	more than 6 hours a week	5-6 hours a week	3-4 hours a week	1-2 hours a week	1-3 hours when I have exam
How long was your independent studying time for the subject **before** ICT is introduced?	106	13.20%	15.10%	20.60%	17.90%	33.00%
How long was your independent studying time for the subject **after** ICT is introduced?	106	10.50%	15.20%	29.50%	19.00%	25.70%

Survey form given:
https://docs.google.com/forms/d/1BHDbwgK_K3_239bvU3GABM1vUw1DDamB_Nn0PbgsbM4/edit
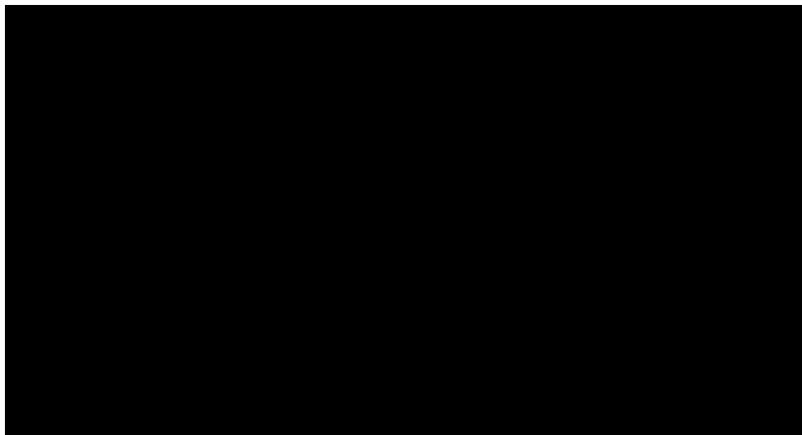
Junior College Students' opinion about using class craft in class

From the afore mentioned result of the survey, I can't be convinced that the use of technology has enhanced students' engagement in learning. I think both students and teachers needs to be given more time to practice in applying technology in class. Besides, the students' study performance can't be measured yet as the use of technology was not done in regular basis. It will be bias to conclude from students' study performance while only using technology in a very limited time.

Even so, from the students' responses I can conclude that there is a change of learning atmosphere when technology was integrated in the lesson. Still, both lower level (Primary) and upper level (Secondary & Junior College) students prefer to study by combining pen and paper and technology.
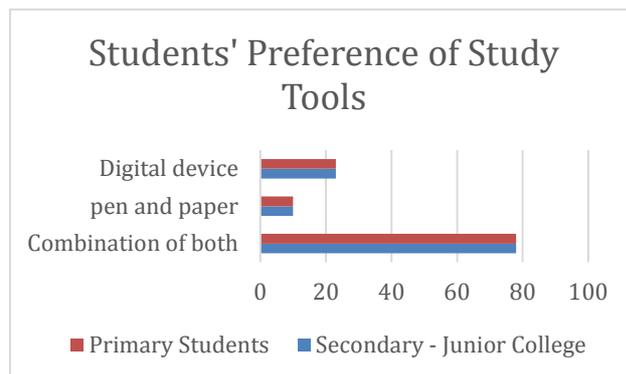
Critical Reflections

My first challenge in carrying out this project was the lack of teachers' interest in joining the ICT training. Although they know the importance of technology in teaching, they were struggling with their time management. Doing a project in the mid of second semester when teachers were rushing for teaching materials coverage and students were preoccupied with exam preparation was not a good idea. Thus, I needed to create a strategy to get at least some number of teachers to work with me.

While teachers were trained to improve themselves in coping with technology, they needed to run through and conduct a try out. By then, students were having their examination and teachers were busy marking students' works. Thus, it seemed to be impossible to intrude for the try out. I need to hold the project for a while and let the examination move across. It took a little while until I finally found an opening in between the examination period and the report book distribution. This time, all the teaching materials were taught, teachers didn't have much time to prepare for a review or enrichment and so, technology came in hand to help.

Starting with my own class, followed by several other subjects. I let other teachers observe my class and learn together with me. When I tried to use iPads, I study the possible obstacles that might appear during the class activities and how students were responding on the new learning tools. "Are they going to come across the school concerns of exposing themselves with too much information beyond their age? Will there be network disruption during the class activities? Will there be better engagement of students toward learning?" By monitoring the students' iPad screens using classroom apps and giving clear instructions, I could see that none of the students were surfing other web for inappropriate information. They were focusing on the assignment given by the teacher. Although some students were not participating much-due to the limited number of iPads used, at least all of them got involved in searching and acting on the required activity. I also found that network was not an issue as long as the teacher monitor the coverage range of the wi-fi. Seeing how students enjoyed the class, other teachers were provoked to start using technology in teaching.

During the implementation of technology in different classes, some problems appears, such as students' answers were accidentally deleted, iPads were not having enough battery power or couldn't be connected to classroom apps, etc. Teachers also forget some of the steps in creating questions in socratives or creating QR Code. I realize that teachers do not only need to be convinced that technology could be beneficial but they also need more practices as well as technical assistance and continuous professional development especially in terms of technology enhancement.

On the other hand, one or two teachers enjoyed searching for apps and had fun with it. One found that it was interesting to be able to see certain activities hidden behind an object. He discovered HP-reveal is an interesting apps where you can record a video and took a picture then hide the video under the picture virtually. Others learnt to use google classroom and creating class craft. For these teachers, I would treasure them as my ally in training teachers with better skills in technology in the future.

Working on transformation plan was not so easy but it is doable when the transformation plan is supported by a cooperative sponsors and collaborative entrepreneurs. As a champion I am not only planning on the action but I had to come up

with strategic plan to collaborate with people around me. It needs the work of a team to make a change.

I also realize that when I implement the action plan, I was learning from other teachers, too. Although I am the planner of the project, I am not more than others. We have to worked together, sharing knowledge and skills toward one same goal – to prepare our students for the 21st century challenges then move forward without leaving anyone behind.

To be a transformational leader, I need to be critical and able to see the needs of the school, students, teachers and parents. With the contribution from different people with different skills, we will be able to prepare better future generation. Moreover, I should have critical friends who would continuously encourage me to work better in achieving goals and solve problems.

The Future Plan

Currently, teachers started to feel the benefits of using technology in teaching while students are enjoying the change of learning atmosphere. In fact, the frequency of using iPads started to be increasing. More teachers were planning to blend the lesson using both traditional teaching and technology support. Therefore, I have to continue supporting teachers for it.

The school is now working on
- better infrastructure, such as putting up reutters and signal expander in several classes as well as providing stronger internet connection.
- regular teachers' professional development not only in technology enhancement but also teaching methodology.
- reducing paper usage and requiring teachers to use technology in assignment submission at least several times each semester.
- giving financial aids for teachers to obtain necessary learning tools (iPads / more updated laptops).
- creating school's application.
- adding more numbers of iPads for students to use.
- hiring an IT professional to support in technical matter.
- training parents in the use of technology to encourage children making use of technology wisely.

This academic year we have started to use google forms to collect students'data renewal.
Here are some google forms distributed to parents:

https://docs.google.com/forms/d/1JXAtA73X2JMle2RMvxWjgv-U5rYAk5wiVT_8hmtHTJg/edit
https://docs.google.com/forms/d/1fI_70TIanAXqreDxN7uwR1v1SUnW2yu2hkOkrsgyF_U/edit
https://docs.google.com/forms/d/10Z-Cgg59M_rqIBgl4jYTYqsCwdaXpKG-cqOBWo0Yyds/edit

I hope this transformation will not only enhancing students' engagement in class but also improving performance of students in learning both knowledge wise and character wise in the future.