

Project Title: Paperless School

School/Institutional Context

Location :Bogor, Indonesia
Levels : KB-TK-SD-SMP-SMA
Student Population : 544
Staff Population : 90
Year School founded : 2006
Type : Private School “Sekolah Alam Cikeas”



<https://www.youtube.com/watch?v=hZEkEy6YTJM>
<https://www.youtube.com/watch?v=KBDx5CXDNUU>

Project Description What is PAPERLESS?

Paperless is an effort to reduce paper usage, but not eliminate paper usage at all. Because we are almost impossible to live without paper in daily activities. The concept of 3R (Reduce, Reuse, Recycle) for several years has been heavily voiced by environmental activists. Reduce which means reducing usage, Reuse which means to reuse, and Recycle which means to reprocess. Paperless is part of the form of Reduce. Indeed, paper has become a daily necessity. Paper use is increasing everywhere. We can imagine, an office, campus, school are places in which thousands and even millions of papers are used. The papers are used starting from scribbles, memos, minutes, notebooks, theses to report documents. We all know the raw material for paper is wood. So, to produce paper, paper mills must cut down certain types and qualities of trees. The more paper needs, the more trees will be cut down. Cases of illegal logging in forests that have implications for forest degradation and deforests or a decrease in the quantity of trees in the forest.

What is PAPERLESS SCHOOL?

PAPERLESS SCHOOL is a school that commits and concerns on reduce paper use in every aspect of school : (student’s works, teacher’s works, administration and others). Paperless school isn’t just spoken or written in the school rule but also been notice on school vision, in order to building every people awareness on it, including the parents.

Sekolah Alam Cikeas is one of the school in Indonesia that really concern on environmental education, and it’s notice in school vision that written as “Membangun sistem pendidikan berbasis alam dengan pembelajaran berstandar Internasional sekaligus melakukan konservasi alam di lingkungan sekitarnya”. It means that Sekolah Alam Cikeas isn’t only concerning on education quality but also environment awareness as well. One of the goal to save the environment is reducing paper use.

Why Should be PAPERLESS SCHOOL?

Indeed, paper has become a daily necessity. Paper use is increasing everywhere. We can imagine, an office, campus, school are places in which thousands and even millions of papers are used. The papers are used starting from scribbles, memos, minutes, notebooks, theses to report documents.

We all know the raw material for paper is wood. So, to produce paper, paper mills must cut down certain types and qualities of trees. The more paper needs, the more trees will be cut down. Cases of illegal logging in forests that have implications for forest degradation and deforests or a decrease in the quantity of trees in the forest.

If more and more forests are cleared to cut down, then this environmental damage will result in climate change and global warming. For example the greenhouse effect, which is caused by a lack of absorption of carbon dioxide. The greenhouse effect will increase the earth's temperature, then it will result in many strange weather symptoms like El Nino, La Nina, melting polar ice caps and other natural disasters.

We can imagine how wide the forest must be cut down to produce paper. For illustration in making a single A4 paper can spend a tree of at least 5 years old. For good quality paper, a mixture of hard and soft woody trees is needed. A land of 4 feet long 4 feet long and 8 feet wide hardwood trees can produce 942,100 pages of books, equivalent to 4,384. 000 stamps or equivalent to 2,700 copies of newspapers. If we save 1 ton of paper, then we also save 12 large trees, 400 liters of oil, 4,100 Kwh of electricity and 31,780 liters of water.

As a school that concerning on environmental awareness, running paperless school in our environment (Sekolah Alam Cikeas) is a must.

Transformational Action Plan

1. What is my Transformational Action Plan? What is the SITUATION that I face in my context?

“Applying **paperless school** by Optimizing Tech and Collaboration”

Paper is an item that is needed in everyday life. Paper has become a necessity for basic needs in various fields, such as education, offices, and so on. In the field of education, paper is absolutely needed for students and teachers for various purposes. Paper requirements per year for one student generally include the need for textbooks, pre-test and post-test activities, exams, reports, portfolios and papers for work assignments.

One student can spend hundreds of pieces of paper in one semester. Paper consumption among students is still a matter that has not been noticed in schools. There are still many papers that are not used optimally. Many papers are only used on one side and then thrown away. In fact, if reviewed further, the use of paper relates to various aspects that are detrimental to the environment from the production process to the decomposition process. But not many students and schools are aware of the negative aspects of using paper.

Paper made with wood raw material. To produce paper on an industrial scale it takes several tons of wood. The wood can be taken from industrial forests. However, many forests that are not for industrial activities are cut down to meet paper needs. In the process of paper production, various kinds of waste will be produced in the form of liquid, solid and gas waste that can pollute the environment. After the paper is removed, the paper will undergo a decomposition process and one of the by-products is methane gas. Methane gas is one of the causes of global warming that is more dangerous than CO₂ in terms of the factors that cause global temperatures to rise.

The use of paper by students on a small scale may not cause significant problems. However, if it is reviewed on a larger scale, the accumulation of excessive use of paper by students and school teachers can also contribute to the indirect decline in environmental quality. Therefore, all school residents need to be aware of using paper as needed.

In line with the vision of the school of nature, which is carrying out environmentally friendly education, realizing "paperless school" is one of the forms in environmental conservation. How do you realize

"paperless school" and what has Sekolah Alam Cikeas done to make it happen, I will describe it in the next discussion.

Every year, across the country, schools are wasting thousands of pounds on an unnecessary and often invisible cost. Paper.

The fact is that in our digital world paper is no longer required for most businesses — and that includes schools. Microsoft estimates that the average school in the UK uses 1,000 sheets of paper per pupil per year. Another calculation suggests a million sheets are used by each school every year. That can add up to a spend of £60,000 yearly in printing and photocopying' Dan Young (*Education Industry Expert*)

The same thing happens in Indonesia. School waste papers every year for pretest, post-test, letters, administrations, etc. students also use a lot of books for each subjects every year, and they mostly buy the new books in every beginning of academic year.

2.

3. What options do I consider to address the SITUATION in my context?

What are the implications of each OPTION?

✓ Optimize the use of technology

Technology that exist in school should be optimized to reduce paper use at school.

Letters that used to be print and copied than send it to will be changed into **e mail**.

Every information about student and class activities that used to be written in communication book, will be replaced by **google classroom** and Whatsapp group.

Supporting text book for every subject that used to be bought in a bookstore, will be replaced by **E-book**.

✓ Design collaborative learning with parents and communities

Running paperless school doesn't mean we stop using paper at all. Optimize the use of paper is also one of the way to run paperless. Use both two sides of paper is one of the practical way to run paperless school.

Inform parents to submit the one side paper that they have in their home and office to school.

Visit companies on communities and tell the school vision. Ask them to collect the used paper and let your school reuse it for learning process.

✓ Creating appropriate programs.

As a leader, we must create the transformational program that will help achieving the school goal.

Garbage Bank is one of the school program that is run in Sekolah Alam Cikeas.

✓ Installing apps secure on student's gadget.

As we know Children are vulnerable to dangers on the internet, such as violence, bullying, radicalism, terrorism to pornography. Based on the 2014 Cyber Crime Survey, as many as 9 percent of internet users have received violent content. And 90% of children are exposed to pornography on the internet according to BPS data in 2010.

Unlike parents who are digital immigrants, they cannot learn quickly and are quite stuttering with technological developments. On the other hand children are digital native, they learn quickly so many of them become active users. Therefore, teachers must be smart in utilizing technology in the learning process.

The internet has both positive and negative effects. If you can use it well, then the internet can help hone creativity and develop children's skills such as: being a programmer, writing, photography, videography, etc. Conversely, children are also easily exposed to negative things on the internet quickly and without limits.

Related to that, before utilizing technology in schools, the teacher and the school must prepare optimally regarding the effectiveness and security of their use.

4. What SOLUTION do I choose given the OPTIONS that I have identified?

✓ Provide and Organize "Garbage Bank" Program in school

Before 2000, the term "Garbage Bank" in this country, Indonesia might still feel strange to our ears, especially for children and school residents. But in the past few years, the habit of saving waste has become more familiar to school residents because waste saving activities are now growing, including in the Indonesian community after the development of environmental issues such as global warming, climate change etc.

Since the beginning of the school, we have run a waste saving program as a manifestation of the commitment of all school citizens to be more concerned about the environment. The main target of this waste saving program is the realization of habituation and care of school citizens to reduce the use of goods that will become waste, reuse existing items, and recycle waste into more useful items, or the cool term is 3R (Reuse, Reduce and Recycle)

Reuse, reduce, recycle are simple steps that are real and can be used for children from an early age. Establishing an environmentally friendly person is not enough with mere knowledge, but requires consistent habituation from an early age with the support of the surrounding environment. The school works with parents in shaping the character of caring environment for students with the program "saving garbage".

The garbage saving program is one of the units in the school. This garbage saving program or known as 3R has been delivered to every parent who will send their children to our school. Parents are invited to commit to this simple activity in order to achieve the school's goal, namely to shape the character of environmental care

1. Students and parents store and sort home waste, such as paper, cardboard, plastic bottles etc.
2. Students carry their house trash according to a predetermined schedule (Tuesday: organic waste, Wednesday: non-organic waste, Thursday: Used goods are suitable for use).
3. Students accompanied by the teacher deposit their trash to the officers of the school garbage bank and weigh it.
4. The school waste bank officer will record the trash savings on that day in the student passbook.
5. At the end of the year students are allowed to withdraw their trash savings into rupiahs to the officers of the school waste bank.

As the name implies, "saving garbage" activities also invites students to learn the transaction system like saving in a bank in a simpler form, the point is that the more they save, the more money is collected.

Where is the garbage then brought?

1. **Reuse:** used cardboard boxes, used calendars and the like that students bring back to be used for classroom learning, such as making class displays, creations, experiments, etc.
2. **Reduce:** to reduce the use of new paper (plain paper), the paper savings that students bring will be used by the teacher to create worksheets.
3. **Recycle:** students and teachers will use natural technology by doing a dual-paper process.

To make the activity easy to be controlled, the person in charge of the unit will make a schedule to save waste at the beginning of the school year and socialize it to each teacher and then socialize it to each student and parent. **Sekolah Menyenangkan (jakarta :2018), Fadhil Mas Ghufron**

✓ Design and Run Online Test

Pre-test and Post-test are two main things that mostly a must for every school in Indonesia. Test is given for every subject, and every subject consist of four tow teens pages. We can imagine how much papers will be used for only test in every year. On-line test is the solution for that problem. Online test that is run in our school isn't just aimed to reduce paper use but also for time effectiveness. Doing online test also very helpful for teacher in correcting and evaluating process, because it can be set automatically through digital technology.

4. What EVIDENCE can I present to indicate the IMPACT of my TAP?

- ✓ Kindergarten and Primary students don't bring any writing book from home (school provide scrap paper and reuse it)
- ✓ Paper use at school REDUCED (Impact on COST EFFECTIVENESS)

- ✓ Teaching document and administration is much more EASIER and ACCESSABLE 24 hours.
- ✓ Parents' questions are clarified faster by digital communication rather than communication book.
- ✓ Students learning enthusiastic are INCREASED by optimizing technology.
<https://www.youtube.com/watch?v=rJpfCqtdjds> (Student's testimony in using technology for learning process)
- ✓ Learning enthusiastic goes linear with LEARNING ACHIEVMENT

Gantt Chart (Actual Implementation of TAP) [approximately 100-150 words]

- ✓ We inform parents to bring scrap paper from home or their office that will be used for students' worksheet.
 In the beginning of academic year, we send letter for parents (school guidance book) that contain the detail of school activity including the invitation to all parents to gather the used paper to school.
- ✓ We build garbage bank to ...
 We had organized "garbage bank" since the school built in 2006. What we do every year is, innovating the program and the architecture (landscape) of garbage bank itself.
- ✓ We provide one student one gadget for junior student
 To optimize paperless school for junior students, we provide them one tab for three years that will be used for learning tools, reading tool, test tools that will decrease the use of paper among them.
- ✓ One student One only book for every high school student
 In this digital era, students bring gadget everywhere rather than their writing book. Optimize their gadget is one of our school vision to make students keep learning everywhere. The student use only one writing book for every notes of every lesson that possibly be brought everywhere. They can keep the notes in the end of semester, than refill it.
- ✓ We do online test
 Test is a must in every school to evaluate each student' achievement. For high school, it takes about a week to do the post test that needs thousands pieces of papers every year. We design ONLINE TEST to change conational test. By doing online test, we reduce the use of paper every year, ONLINE TEST also make teacher work more effective and more efficient than manual test.
- ✓ We build virtual classroom
 To avoid spreading too much text books to read, we build virtual classroom for putting the material that accessable 24 hours for students.
 Students can and access the material that shares by the teacher wherever they are. We use padled.com and google classroom to accommodate it all.
- ✓ We communicate with parents by Google classroom, WhatsApp, and email
 We used to spend much paper for sending letters to parents to inform every school agenda, class agenda, school rules and so on.
 Today, we use email, google classroom, and WAGS and no more use paper for communication. Paper only use for crucial thing that can't be replace by digital.

Evidence of Transformation (As output and outcomes of TAPs) [approximately 1000-1500 words)

Paper Use Table @Sekolah Alam Cikeas

GRADE	TOTAL	NORMAL ESTIMATION PAPER USE / YEAR	TODAY'S ESTIMATION NEED
Kindergarten	75	Worksheet 10worksheet / week = 40 x 12 x 75 =36.000 worksheet/ year = 72 rim	50% (purchase) 50% (scrap paper)
Primary	409	7 subject = 7 writing books x 409 = 2863 books 7 subject x 4x test (6 pages) x 409 = 68.712 pages = 137 rim paper/year	No writing book 90% (purchasing) 10% (scrap paper)
Secondary	65	10 subject = 10 writing books x 65 = 650 books 10 subjects = 4 x test (6 pages) x 65 = 15.600 pages 10 subject x 2 books/year x 65 = 1300 student' books	65 writing books No more paper use Replaced by E-book
High School	10	15 subjects =15 writing books x 10 = 150 books 15 subjects = 4 x test (6 pages) x 10 = 3600 pages 15 subject x 2 books/year x 10 = 300 student' books	Only 10 writing books No paper use for test
Staff	90	90 x 2rim /year = 180rim	100 rim purchasing The rest is reuse paper

Here are four direct impact by applying paperless in our school:

1. Reduce waste and inefficiency

Paper isn't just bad from an environmental point of view. It's also extremely inefficient for our school administrative team. When a school works with paper it means hours lost every week to processing, storing, managing, searching and retrieving.

By going paperless, the time it takes to do these tasks can be reduced to mere minutes. Bulky batches of paperwork can be scanned in moments and software can convert them into searchable, shareable digital versions. Laborious tasks, like locating and passing on a document in a student's record, go from frustrating hunts to a quick search on the computer.

And of course, there are massive cost savings to be had from less printing, photocopying and required storage space.

2. Create a secure digital database

If all our data is in one, centralized place, it becomes easier for everyone in a school to access and update that information. You don't have to worry about out-of-date contact details or duplicated documentation. And with a digital system you'll be able to see who scanned and edited which documents when, giving you a clear audit trail.

Not only is this kind of setup more secure, but it's also more flexible. It means information can be accessed remotely — great if teachers are marking online homework in the evening or you're a multi-academy trust with shared data.

3. Communicate better with parents

Before applying paperless school, we send letters to parents almost every week. Teacher almost send the parents letter twice in a week. Imagine how much paper we use only for sending letter and communicate with parents in only a year?.

By optimizing technology, we use email, google classroom, and class wag to communicate with parents, and it well accepted n well responded among parents. Make life even easier for parents paying for school trips, uniforms or lunches by directing them to an online payment system too.

4. Engage students more

For children who have grown up with the internet and touchscreens, digital learning is simple and intuitive. Using less paper in the classroom doesn't just save your school money — it's also the next step forward in a more engaging, inclusive, varied form of teaching.

There are hundreds of education-specific apps and software available to teachers. These tools can be used alongside, or in place of, more traditional textbooks to bring to the classroom to life for modern learners. Homework can be submitted online and teachers can give feedback quickly and frequently, rather than pupils and parents having to wait for large pieces of work to be marked.

Finally, when some or all of your learning is done digitally the cost of buying and replacing books each year (which inevitably get lost, damaged and drawn on) can be cut back.

It's important to get the most from every penny of spend in your school. Replacing paper with digital systems could save thousands each year and allow us to invest more in better experiences for parents, students and teachers.

Critical Reflections

Lessons Learned:

Becoming a leader in school spurred me to think and work more to be able to present education that suits my current learning needs.

In participating in this CESL program, I got a lot of insights and ideas to do innovations that I want to apply in school. But I am aware that I must adjust ideas and innovations that are in accordance with the conditions and vision of the school.

From some innovation ideas that I designed and submitted to mentors at CESL, Mr. Vicente, I finally took the theme "Applying Paperless School by Optimizing Tech & Collaboration" to be applied in our school. This title is in line with the school's vision, namely: Organizing quality education with international standards as well as conducting conservation in the surrounding environment.

During the CESL 2018 workshop which started from February to July 2018, both online and offline there were some important lessons that I received, including:

1. As a leader, our main task is to lead learning.
2. In making a change / transformation, it does not have to be large, the most important is the optimization of the consensus of each school member.
3. In the current era, we cannot fight and win ourselves, "focus on collaboration instead of competition".
4. As a leader in education, we must improve either theory or practical skill. (be long-life-learner)
5. "Change will Not Come If We Wait For Some Other Person, or If We Wait for some other Time. We are The Ones we've been waiting For. We Are The **CHANGE** That we Seek.",
Barrack Obama

Future Plans:

This CESL programs has inspired me a lot. I will make it as a beginning to keep improving my teaching and leadership skill. The eighteen members of CESL that I have is one of the biggest opportunity to learn and share together through effective collaboration.

My plans on it are:

1. Share what I have learn to teacher around the world through my blog www.masfadhil.com and my other social media accounts.
2. Share the transformational ideas of teaching and leading by creating a book, entitle : TRANSFORMATIONAL TEACHING. Find it at bookoo.co.id
3. Sustainable learning and sharing among CESL members
4. Creating training module for teacher, "Joyful School Training", "Environmental Based Education Training" to build green learning awareness among teachers.
5. Continue my Master Degree to UoQ, Nanyang University or UNJ.