ANNUAL PROGRESS REPORT 2017

Solve Education!

"Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages."

Our Vision

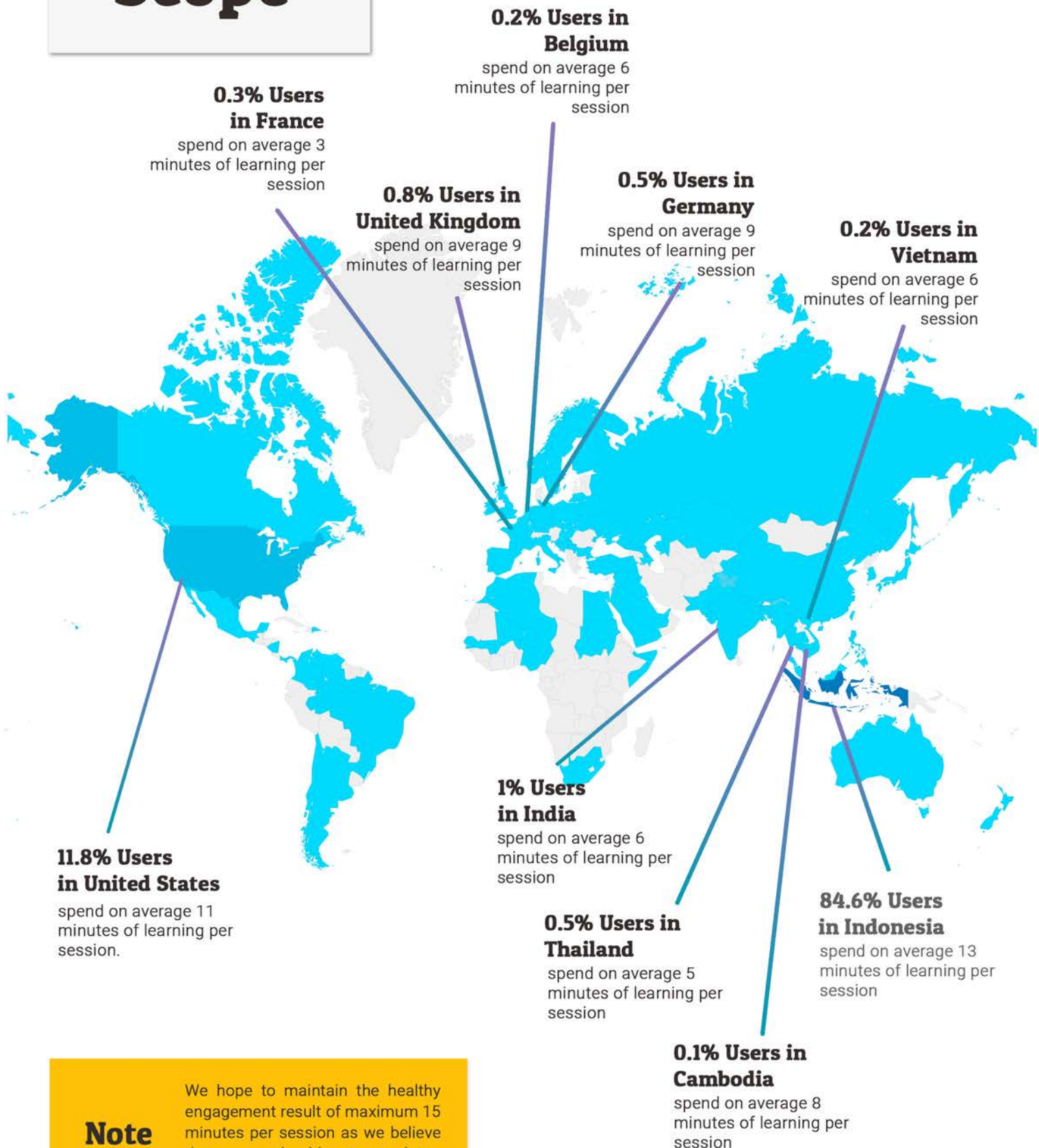We envisioned a world where everyone has equal access to the knowledge economy.

Our Mission

We want to become a leading not-for-profit education technology organisation that successfully develops young people's hunger for learning and prepares them for the workforce of the future.

Our Invitation

We hope you can bring your hope, optimism, and expertise to help us achieve our mission.

Scope

0.2% Users in Belgium
spend on average 6 minutes of learning per session

0.3% Users in France
spend on average 3 minutes of learning per session

0.8% Users in United Kingdom
spend on average 9 minutes of learning per session

0.5% Users in Germany
spend on average 9 minutes of learning per session

0.2% Users in Vietnam
spend on average 6 minutes of learning per session

11.8% Users in United States
spend on average 11 minutes of learning per session.

1% Users in India
spend on average 6 minutes of learning per session

0.5% Users in Thailand
spend on average 5 minutes of learning per session

84.6% Users in Indonesia
spend on average 13 minutes of learning per session

0.1% Users in Cambodia
spend on average 8 minutes of learning per session

Note We hope to maintain the healthy engagement result of maximum 15 minutes per session as we believe that users should not spend too much time on the screen.

Figure 1: The Adoption Map of Dawn of Civilization

Reflection from Chairman

What started as a question about how to jump straight to the knowledge-based economy has transformed into a real movement to tackle educational inequality in the world. I realised, at that time, when I attended the 2015 Africa Innovation Summit in Cape Verde, a knowledge-based economy cannot be achieved without having knowledge workers. Since education was broken, the question became how we could fix education.

My takeaway from the conference was a list of requirements for an ideal educational intervention to narrow the gap of educational inequality and help produce knowledge workers. We have come to realise that the effective educational intervention must be scalable, engaging, cost-efficient, and more importantly suitable for emerging markets contexts. In other words, it has to work with limited infrastructure in these countries.

At the end of 2015, I gathered like-minded people and started to look for organisations that we could work with and help scale out. However, we soon realised that the most significant challenge was not in the quality of programmes but actually in the design for scaling. When you ponder the scale of the problem, it becomes clearer why, given traditional approaches, the problem has remained unsolved for so many disadvantaged young people. Education issues are complex and intersect with other major challenges. Traditional approaches to education have not, and we suspect, might not provide universal education because the cost and the logistics requirements are very high; perhaps too high.

With that in mind, we started looking for the alternatives, and soon realised that technology is a perfect tool to scale. We've witnessed how significant change in access and communication had been made through digital technology e.g. Facebook and Google. If technology can help humans around the world connect with each other more easily, we believe that through digital technology we can also solve education. We believe that if we modify traditional pedagogical approaches to ride on prevalent technologies and broadband networks, we might be able to create a scalable and sustainable approach to education for large numbers of individuals. That is what we are attempting to do at Solve Education!

By realising the growing ubiquity of low-end smartphones and broadband across emerging markets, we have come up with another list of requirements that needs to be possessed to solve educational inequality through technology. We believe that we need to reimagine and rethink our curriculum. We believe a relevant pedagogical approach that includes incentives to motivate learning can help develop young people's motivation to learn. Seeing the amazing impact that technology has helped create, we believe a digital-only approach to the delivery of education is to address the scalability problem. Lastly, by understanding emerging markets contexts, we know that software delivery systems that will run on emerging markets broadband and low-end smartphone would be critical.

After more than a year of studying and researching, we finally launched our first digital educational and employment platform in 2017 in hopes of addressing the issue above. We take pride in what we have accomplished over the year, yet we are also eager to receive feedback from people across disciplines so that we positively impact the lives of millions of young people in the world faster and better. As you can see we cannot solve education at scale by ourselves; we need you! We need your optimism, passion, as well as your expertise every step of the way.

So, let's collaborate to build a strong, scalable, and sustainable solution for education!

Peng T. Ong
Chairman

Letter from CEO

Since the beginning of our journey, Solve education! has aspired to become a learning organisation that continues to adapt to local contexts, evolve based on data and evidence, and positively create an impact on the lives of millions of our future generation.

Because of that mindset, we started asking this question, "How can we best help the most vulnerable youth?" We raised that question to guide us to find the most suitable, relevant, and responsible approach to help the future generation improve their quality of life, prepare them to become future leaders to change the world for the better.

Through raising that question, we have concluded that education is the answer. As Nelson Mandela once said, "Education is the most powerful weapon which you can use to change the world." We are firm believers that education can do just that.

However, as our world is changing fast, and education is now struggling to keep up. As economies are transformed by technological advances, the skill-set required by future generations is continuously changing.

That is why, this year, we gathered a team of experts in education and technology to find the best solution to help improve access to and quality of education for young people. We also tried to understand the conditions faced by youth on the ground by partnering with local organisations and communities in different countries.

After researching and exploring, we have finally developed an educational platform in hopes of opening the door to knowledge, build learning motivation and improve income prospects for the future generation so no one would not be left behind anymore.
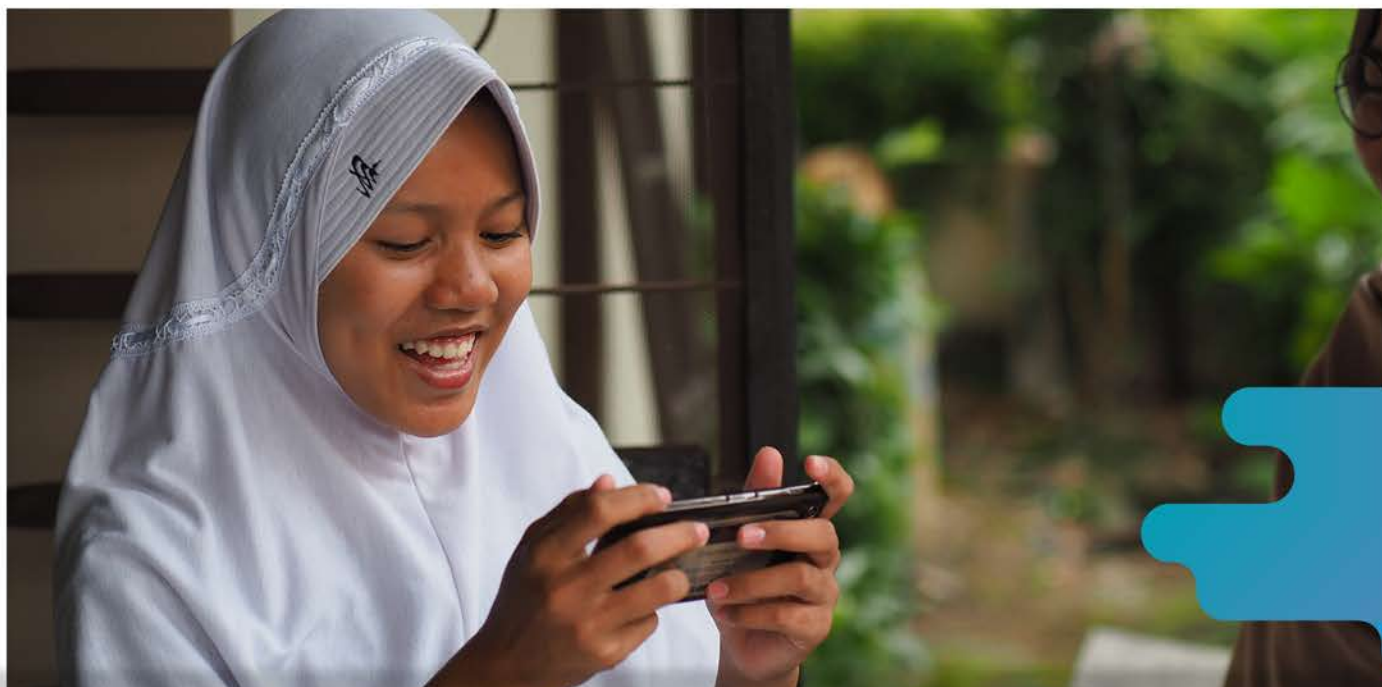
By doing so, we hope to open more opportunities for the future generation regardless of their socioeconomic background and geographical location. We believe that investing in young people is a prerequisite to narrow the gap of inequality in the world.

And yet, this is just the beginning of our journey. We are excited to welcome the new year with so much more homework to finish and work plan to execute so we can achieve our mission.

As you can see, what we are aiming to do is audaciously ambitious, and we know that we cannot do this alone. So I am here to invite you to work together with us and be part of the change!

Janine Teo
CEO

Table of Contents

Table of Figures

Summary

The case for rapid global action targeting out-of-school young people and the lack of decent work opportunities for youth has become more apparent. According to ILO's 2015 World Report on Child Labour, there are approximately 263 million young people around the world who are denied access to basic education, while about 168 million remain trapped in child labour. Many of the young people trapped in jobs that fail to offer a fair income, security and safety in the workplace, are the ones who struggle most to access the benefits of education.

This Annual Progress Report focuses on the new technologies developed by Solve Education! Foundation to help tackle educational inequality and ensure employment opportunities for disadvantaged young people primarily in the ASEAN countries. The focus is driven by the problems and challenges faced by youth around the region who are marginalised from both education and employment. Young people, especially the out-of-school groups, are more vulnerable to be left behind and trapped in a cycle of poverty. This report also indicates how important education is in changing the lives of these young people. Education is a human right and vital to securing the well- being and productivity of individuals, families and societies.

This report begins with an introduction to the motivation behind the establishment of Solve Education! It then moves to a short discussion on the role technology can play in addressing the issues of educational intervention for these young people. The report then elaborates on the development phase of the new technologies created by Solve Education! in 2017 -- what we have learned through testing and rolling-out phases, and how can we improve from that. The report concludes with a set of the strategic work plan for aligning and improving all technologies addressing educational inequality and youth employability.

Introduction

Shortly after the establishment of Solve Education Foundation in December 2015, an ambitious agenda was set to find the most effective alternative for young people, especially the most marginalised, to acquire knowledge. Over the following year, observations and research were gathered and discussions held around understanding the circumstances faced by disadvantaged young people. Our small team went on a journey of meeting with educationists, educators, NGO workers, technology experts, and young people, especially in the ASEAN countries, to gather insights. Our findings showed that there are still many hundreds of millions of young people facing barriers to education linked to poverty, diversity politics, gender, disability, armed conflict

"How can we best help the most vulnerable youth?". We spent an entire year trying to understand and find the most scalable and cost-effective ways to help disadvantaged young people learn.

and displacement. Moreover, poor access to quality education entrenches cycles of inequality by preventing youth—particularly the vulnerable—from attaining the skills to change their economic situation in today's ever-changing world.

According to the 2016 UNICEF report on Education, the total number of young people out of school had risen to an estimated 263 million, including those of upper secondary school-age. Of these 263 million, 61 million primary-school-age children and 60 million young people of lower secondary school age were out of school. In addition, approximately 26 million would never enter school. 23 million would enter late, and 12 million have already left school. Based on existing trends, an estimated 69 percent of young people in low-income countries are not expected to learn basic primary-level skills by 2030, contrasted with only 8 percent of young people in high-income countries.

As our understanding of these problems developed throughout the year of 2016,

we realised that equality in accessing knowledge-based economy can never be achieved without an effort to 'level the playing field'. As only minimal progress has ever been made in increasing access to quality basic education for disadvantaged young people, we know that we need to rethink what we have already learnt about educational interventions for these people. This raised the question: "How can we best help the most vulnerable youth?". We spent an entire year trying to understand and find the most scalable and cost-effective ways to help disadvantaged young people learn.

Eureka Moment

In the same year, after spending some time with local organisations in Myanmar and Indonesia who work with working children and child labourers, we learnt the impact of technology has had in the lives of these children. These children, by the time they turned 13 or 14, would typically spend the money they earn to make their first big purchase on a smartphone. The finding was heartbreaking, yet at the same time also showed an opportunity for a scalable solution to tackle education inequality. It showed us that even in poverty, the smartphone is centre of these children's lives. Like us, their sense of connection to their culture, society, and

Other studies also indicate that smartphones and the internet has had a significant impact on the lives of many of the young people that education fails to reach. With that in mind, we raised another question: "Could we leverage this social phenomenon to propel education?"

social circles comes in large part from their smartphone. According to the 2016 Cisco Visual Networking Index, there were 4.3 billion people with mobile phones, more than half of which are smartphones. The number of smartphone subscriptions is estimated at 6.1 billion by 2020, which is equivalent to 70% of the global population. Today, more people have smartphones than have electricity at home. Other studies also indicate that smartphones and the internet has had a significant impact on the lives of many of the young people that education fails to reach. With that in mind, we raised another question: "Could we leverage this social phenomenon to propel education?"

Since we are not the first to notice the phenomenon, the education technology industry has seen the opportunity and creates software with a particular market in mind. However, the families who can pay for this technology are not the ones who need it most. Moreover, most existing educational technology assumes that its paying users are motivated to learn. We understand that when students are marginalised from society, they face severe barriers to generating the motivation to learn, and to recognising the benefits that education can bring. Therefore, alongside scalability, we also need to address both the affordability and motivational aspects of our target students.

As a not-for-profit organisation, our vision is a world where all students regardless of their socioeconomic conditions can access education and gain confidence in their ability to learn. This is why we decided to leverage the proliferation of smartphones and broadband in the

emerging markets to bring free, engaging educational software in the hope of developing young people's motivation to learn and improve their income prospects. We want to level the playing field and help them access the knowledge-based economy.

After researching what young people like to do on their phones, we conclude that they are mostly addicted to social media and engaging games. According to AdReaction Report in 2014, in ASIA, average screen time is 5 hours per day. Besides seeing this as a problem, we saw this as an opportunity of how to shift their attention from social media channels and non-educative games. This is why we use evidence from successful game developers to create a game so engaging that students become addicted not just to playing, but to learning. We design our learning platform in a way that will reduce their screen time but increase their motivation to continue learning in real life. This is done by ensuring the system implemented in the app allows the users to actively seek information outside the app and time building progress in the app so users will want to leave the app while waiting for it to be done. We also build in real-life incentives by directly linking success in the game to

opportunities on our online employment platform. This way, we hope to show the direct benefit that education brings to unmotivated students. The design of our game encourages students to be independent, analytical problem-solvers; fostering skills for a changing world. Following learning journeys personalised and guided by Artificial Intelligence, our technology will empower students with skills and confidence to face the challenges of a changing world, and transform their own lives.

The following chapters will provide a more elaborate explanation of the technologies we develop to help tackle educational inequality.

"

If one has to have an addiction, it may as well be education ...

Boon Tiong Choo
Director at Kyra Capital Pte Ltd

Tech Timeline 2017

Q1

- Launching the Beta version of the app
- Optimising the game by detecting the phone specifications and disabling some animations that would not work well on low end devices, so that our users who have low end devices can still experience a smoother game play
- Brainstorming
- Brainstorming
- Brainstorming

Q2

- Adding the on boarding tutorial to guide users through the different functionalities of the app
- Adding in MG0 -the English assessment game
- Adding in MG4 Flashcard game
- Implementing Spaced Repetition Model into the app by creating Question Recycling System
- Research
- Development planning
- Research
- Research

Q3

- Implementing Spaced Repetition Model into the app by creating Question Recycling System Research
- Changing the on boarding process by starting the user directly in the game vs having the user sign up first by introducing guest accounts
- Beta version of learning portal ready
- Implementation of data collection for individual learning sessions
- Research
- Development planning
- Research
- Development planning

Q4

- Implementing the notification system
- Adding a feature to allow users explore other users' cities easily
- Applying simplicity design - adding design elements so that our users who are digitally literate can use
- Smart localisation
- Further optimisation for low end phones including xml loading system improvement and city drawing system
- Smart merging of Question Recycling System data
- Implementation of data collection to analyse Grit Index, Discipline Index and Diligence Index
- Improved downloadable student report cards
- Beta version is ready
- Alpha version is ready

Legend:

- Dawn of Civilization
- Learning Analytics
- Solve Employment
- Youtube Classifier

Dawn of Civilization

Changing the Way Young People Learn through a Mobile Game App

Background

The last decade or so has seen the rise of the education technology industry. More and more entrepreneurs have begun to imagine and design technological educational innovations. Aside from the reality that most of the resulting products are only affordable to a particular market, at Solve Education we have identified two significant challenges which have been insufficiently addressed by the educational technology industry.

The first of these revolves around learning motivation. The vast majority of existing products assume users' motivation to learn. When a young, privately-educated girl growing up in a developed country chooses to study Computer Science, she is likely to be aware of how this can improve her prospects of employment, and higher income, than children who grow up in rural Indonesia where the monetary benefits of studying computer science are difficult to see or imagine, let alone access. In many cases, current educational innovations perpetuate the cycle of inequality by prioritising the needs of the privileged students who can afford their products and services.

In a country with low GDP-per-capita, or substantial socioeconomic inequality, it is reasonable that a great many rural working children are unmotivated to learn in school. What evidence does she have that tells her and her parents that the investment she might put into her schooling will financially benefit her in the long run? Unfortunately, in emerging markets such as Indonesia, the benefits of getting an education are often unclear. In 2016, there were approximately 20 million working children, and 7 million of others did not attend school.

At Solve Education!, we believe in an approach that motivates young people to develop their hunger for learning. The motivation could start as small incentives offered through fun activities but could expand to an offer of employment on successful completion of particular training. Small incentives are crucial in building students extrinsic motivation to learn. KA Noels, an educational psychologist who specialises in motivation and second language acquisition, posits that reasons to learn a second language are usually derived from

learner's goals, inherent pleasure and interest in the learning activities. Learning outcomes vis-à-vis learning motivation amongst students are also studied by Judy Willis, a neuroscientist and educator from the US. She believes that building students learning motivation through fun activities are essential to improve students' learning outcomes. That is why we believe that engaging young people to learn with something that they enjoy doing can be effective to develop their learning motivation. Once that motivation has begun to grow, the path is set for students to develop a deeper kind of motivation to become a life-long learner.

The second challenge is about the infrastructure. Most education technology products are designed to suit well-developed broadband networks, running up-to-date devices. Most broadband networks in emerging markets are not well developed, and the most sophisticated access point is a low-end smartphone. We believe that there should be an approach that benefits the majority of the people on the planet. Software systems for ed-tech can be designed to function in low bandwidth, with intermittent connectivity,

and using low computer-power. To develop such technology is a challenging task, and one which is rarely tackled because of its low monetary returns compared to the provision of ed-tech solutions for markets with a higher disposable income.

We believe that if we modify traditional pedagogical approaches to ride on prevalent technologies and broadband networks, we will be able to create a scalable and sustainable approach to education for large numbers of the young. This is what we are attempting to do at Solve Education!

Design Framework of Dawn of Civilization

Dawn of Civilization is an Android-based educational game app developed by Solve Education! designed to provide young people, aged 15 onwards, with easy access to knowledge and skills. We combine game mechanics, social media elements, and artificial intelligence to provide engaging educational opportunities to students who otherwise would not have access to school or adequate education. Our game-based educational application runs on low-end smartphones and intermittent internet
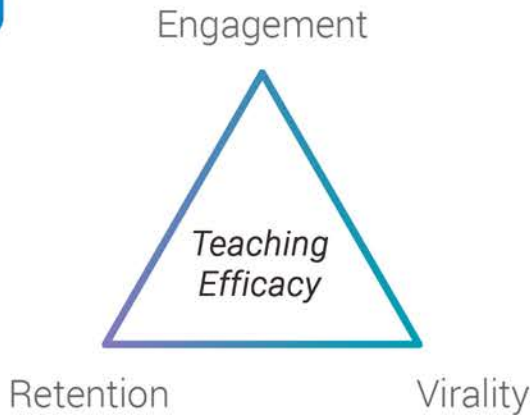
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Figure 2: Dawn of Civilization's Objectives

(online/offline access) and is designed to engage students' hunger for learning and improve income prospects in a knowledge economy. Through Dawn of Civilization, we hope to engage and retain young people in a stimulating learning environment by creating an app that offers a sense of novelty and virality. Currently, the app is only available for Android smartphones since data

shows us that most of our target beneficiaries are more likely to have or access Android devices than other portable devices.

The design of the game follows the LM-GM (Learning Mechanics-Game Mechanics) Framework proposed for Serious Games. Serious game is an ed-tech terminology for a game which has a purpose other than just pure entertainment. Dawn of Civilization is included in the category of serious game because the design of the game follows a combination of pedagogical approach and game-play. It means that each of the learning goals is gamified for the purpose of fun learning experience. We linked pedagogical practices (embodied in our learning mechanics) to concrete game mechanics which are directly related to player actions. To do this, we followed the LM-GM model checklist as illustrated below.
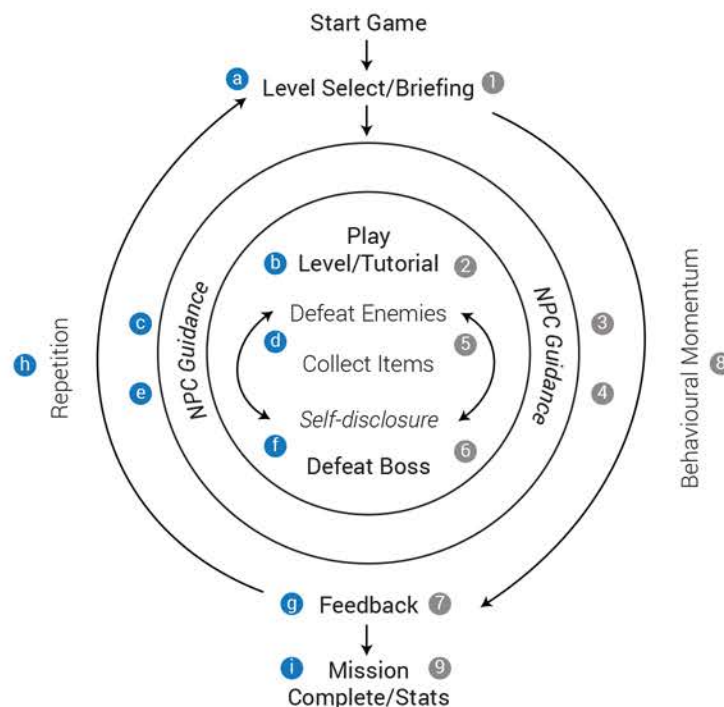

Figure 3 Game flow constructed with LM-GM (e.g. based on Re-Mission)
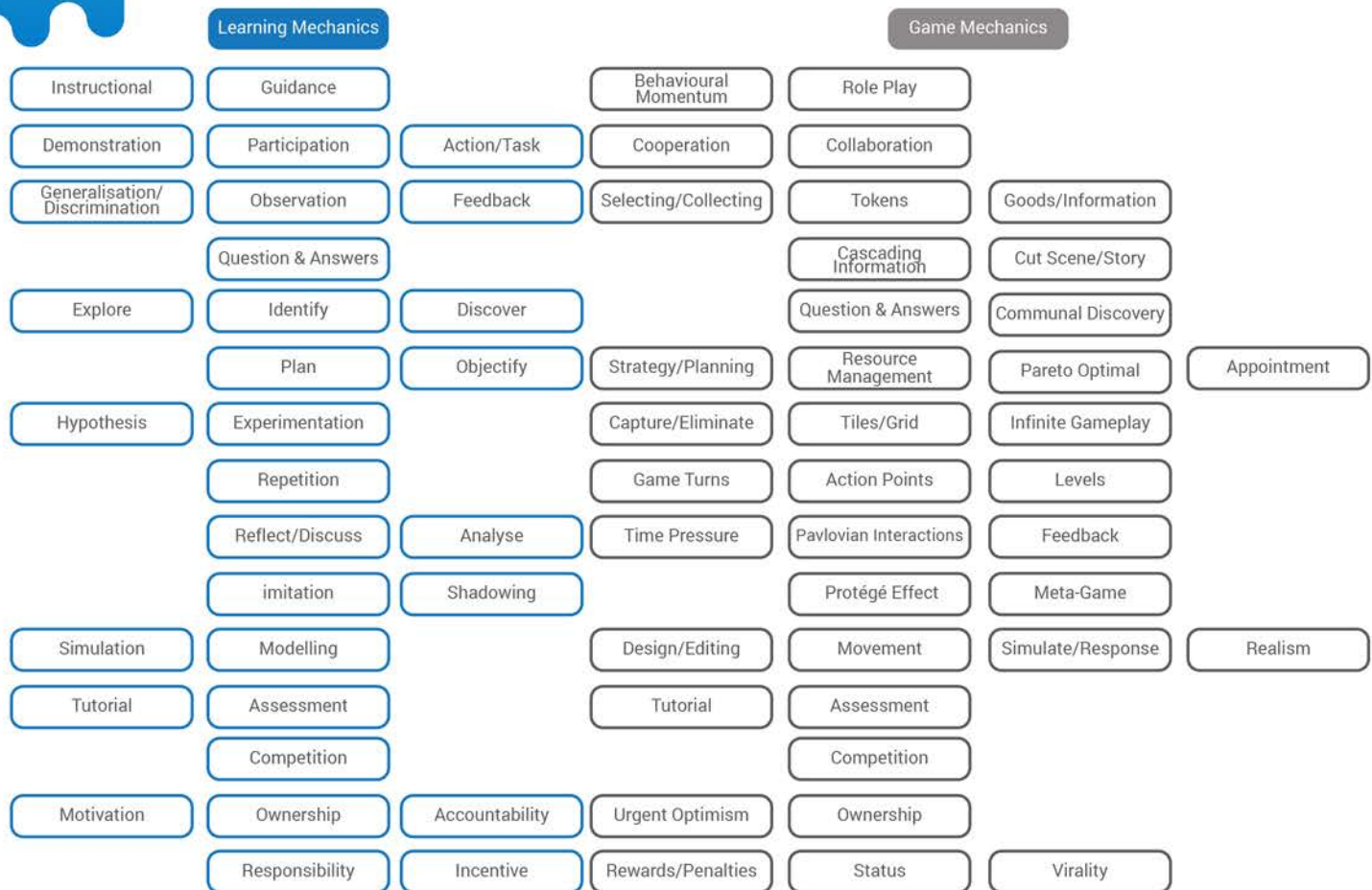
Learning Mechanics				Game Mechanics		
Instructional	Guidance		Behavioural Momentum	Role Play		
Demonstration	Participation	Action/Task	Cooperation	Collaboration		
Generalisation/ Discrimination	Observation	Feedback	Selecting/Collecting	Tokens	Goods/Information	
	Question & Answers			Cascading Information	Cut Scene/Story	
Explore	Identify	Discover		Question & Answers	Communal Discovery	
	Plan	Objectify	Strategy/Planning	Resource Management	Pareto Optimal	Appointment
Hypothesis	Experimentation		Capture/Eliminate	Tiles/Grid	Infinite Gameplay	
	Repetition		Game Turns	Action Points	Levels	
	Reflect/Discuss	Analyse	Time Pressure	Pavlovian Interactions	Feedback	
	imitation	Shadowing		Protégé Effect	Meta-Game	
Simulation	Modelling		Design/Editing	Movement	Simulate/Response	Realism
Tutorial	Assessment		Tutorial	Assessment		
	Competition			Competition		
Motivation	Ownership	Accountability	Urgent Optimism	Ownership		
	Responsibility	Incentive	Rewards/Penalties	Status	Virality	

Figure 4: LM-GM Model Checklist

The pedagogical approach implemented in this game app is relevant to the needs of our target beneficiaries and designed internally by our team. In 2016, during our research and observation, we discovered that there were many free online educational resources out there that could be accessed to help our beneficiaries learn advanced skills in coding, design, business, and others. However, most of these online resources use English as their language of instruction. Accordingly, we decided to begin by teaching English in the app with the intention of launching primary Math education following the successfully establishment of the English programme. The decision is made with the intention of equipping our target beneficiaries with the knowledge and skills most relevant to the workforce of the future.

Our English curriculum follows the Common European Framework of Reference (CEFR) for English Language Teaching. CEFR was created by the Council of Europe to provide a common basis for the elaboration of language syllabus, curriculum guidelines, textbooks, and including tests across Europe. Nowadays, CEFR has been widely accepted as one of the most comprehensive and reliable sources of language teaching reference and used by educators around the world, especially for English teaching and assessment. CEFR guides the design and formulation of each English mini game in Dawn of Civilization.

Cambridge English
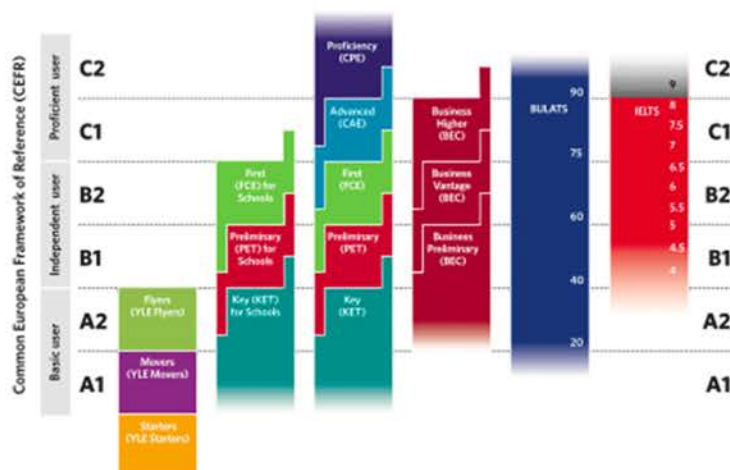A range of exams to meet different needs

Figure 5: Cambridge English's CEFR Level

The figure above is intended to be used as a guideline for English language teaching providers to see roughly compare the level of proficiency of their students. It is important to remember that the CEFR is a framework of reference, and we have adapted it to our context. Linking to the CEFR means relating the particular features of our own context of learning in the game app (the learners, the learning objectives, etc.) to the CEFR. Not everything in the CEFR is relevant to our context, and there may be features of our context which are important but are not addressed by the CEFR. What we follow mostly is the guidelines to determine students English level procificiency which is useful for our assessment and mini games creation.

The Development of Dawn of Civilization

After a year of research and modelling, in January 2017 we launched the beta version of the game app with three English mini-games designed for intermediate level students. The game app was created collaboratively with over 100 youth in Indonesia. Our collaborators helped chose the name of the game, the first graphics and design of the app. We develop the game app into two significant parts: a meta-game and an unlimited numbers of mini-games/ bite-sized lessons. The meta-game, the fun part, is designed to retain users so that they will continue learning. In the meta-game, we build a city simulation game where users can create and manage a city as a mayor. They can construct a building, place landmarks in their town, or earn taxes from their citizens. To build things in the city they need coins and stars, which can be obtained by playing the mini-games. The mini-games are essentially our syllabus, designed to help users learn knowledge and skills in an engaging way. We develop the mini-games one by one due to the limited numbers of resources working in the team.

After receiving feedback from our beta testers over the following months, we optimised the game by detecting the

phone specifications, and disabling some animations that would not work well on low end devices. This was done to allow users who have low end devices to experience smoother game play. We found that users need an onboarding tutorial to guide them in the navigation of the app.

In the initial version of the game app, we collaborated with English First to provide a free Standard English Diagnostic Test for our users before learning on our app. The diagnostic test is of utmost importance to help us map students' level of proficiency before they start learning. It also helps us measure the effectiveness of our teaching methods. We provided a direct link to the EF website for our users to access. However, from 676 beta testers in the period between January to April 2017, only 0.5% took the test before logging in to Dawn of Civilization.

Through the beta testing observation, we understood that our users are typically reluctant to take a long conventional test. As such,we formulated a game-based English diagnostic test so simple and

short enough to make our users feel like they are not being tested. The new 5 minute Diagnostic Test, called Soupa Good, was tested and evaluated to match against the highly established 15 minute English First Standard English Test (EFSET). During the experiment between May and July 2017, we gathered 200 participants to take both EFSET and Soupa Good. Soupa Good was validated through a consistent result shown in the experiment. Participants who took Soupa Good showed similar results to the ones in EFSET. Both tests are designed to assess the student' English comprehension level. In conjunction to formulating a diagnostic test, we also added more mini games to accommodate beginning level students.

Throughout the year, we constantly improved the optimisation, responsiveness, and reliability of Dawn of Civilization. We proceeded to build more features, such as a smoother notification system which does not interrupt users' play flow, and a world exploration system to activate the social media element of the app, allowing users to visit and interact with each other virtually.

Spaced Repetition Model
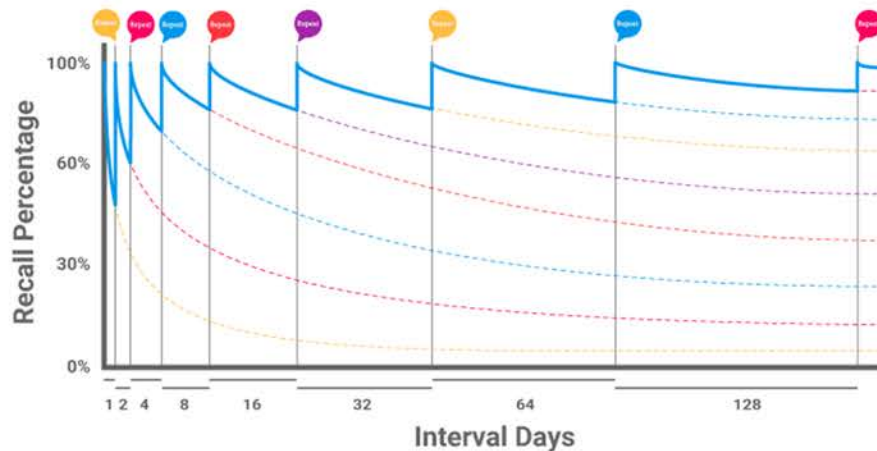
Figure 6: Solve Education's Spaced Repetition Model

Inspired by Universal Design of Learning and Clicker Training Principles, we established a 'lingua franca' between us and our users who may be illiterate or digitally illiterate. We added animations and tried different colour schemes to the buttons to guide users to the "most desirable" action, (ie. learning more new concepts), and hint at which where less desirable (ie. giving up when facing a difficult task).

In addition, we have been implementing a Smart Localisation feature to support users with different linguistic backgrounds. When users do not have adequate knowledge in English, it can be intimidating for them to use an app that is in fully anglophone. Therefore, we collaborated with native speakers from Indonesia, Myanmar, Vietnam, and the Philippines to provide effective and relevant translation from our app. We help our users to navigate the app in their native language, as detected by the app, and then ease them into English in an immersive manner when they have obtained intermediate level in English. By

doing so, we aim to remove the barrier to commencement of learning for English beginner level students.

More importantly, in order to enhance the learning processes in the app, we have been working on Question Recycling System using the Spaced Repetition Model.

This model is a learning technique which implements increasing intervals of time between subsequent review of a previously learned concept in order to exploit the psychological spacing effect. The Spaced Repetition Model is crucial in enhancing the brain's capacity to move each learnt concept from Short Term Memory to Mid Term Memory, and then to Long Term Memory — mastery. Currently, our Question Recycling System can only work on simple concepts such as vocabulary. However, in 2018, we are planning to improve the ability of our Question Recycling System to accommodate different concepts being taught in Dawn of Civilization. By the end of 2017, smart merging of Question

Recycling System had been implemented to better support users learning offline. The Question Recycling System is implemented on the clients' side (on the phones of our users) with the server support the accuracy of the system.

Adoption Strategies for Dawn of Civilization

In August 2017, we finally launched Dawn of Civilization version 1.0 during the Annual Indonesian Diaspora Congress in Jakarta. Since the launch to end of 2017, we have reached 4017 users across Indonesia and other countries. Although our app can be accessed through the Google Play Store for Free, the growth of our users is not as rapid as the one found in other for-profit ed-tech companies.

The priority for our team is that the technology can be distributed for free to users who cannot pay for it. In order to maximise accessibility, the technology is aimed at low-end phones with intermittent internet connectivity. While other companies invest in both offline

and online marketing to promote their product, our approach is to engage local communities and organisations to help us reach our target users.

We deploy the technology through local community organisations who are working directly with our target beneficiaries.

Often, the local organisations bring a portable router to the centre, where young people download the application from Google Play Store. Whenever they are connected to internet, their progress is synced to and updated by our server. Users do not need to be connected to continue playing. That is why the numbers of active Dawn of Civilization users could potentially be higher in reality than what it is shown on our analytics. With that in mind, we plan to build and improve our analytics system in 2018 to support offline data collection.

In addition, our priority to invest in education and technology resources during our first product development
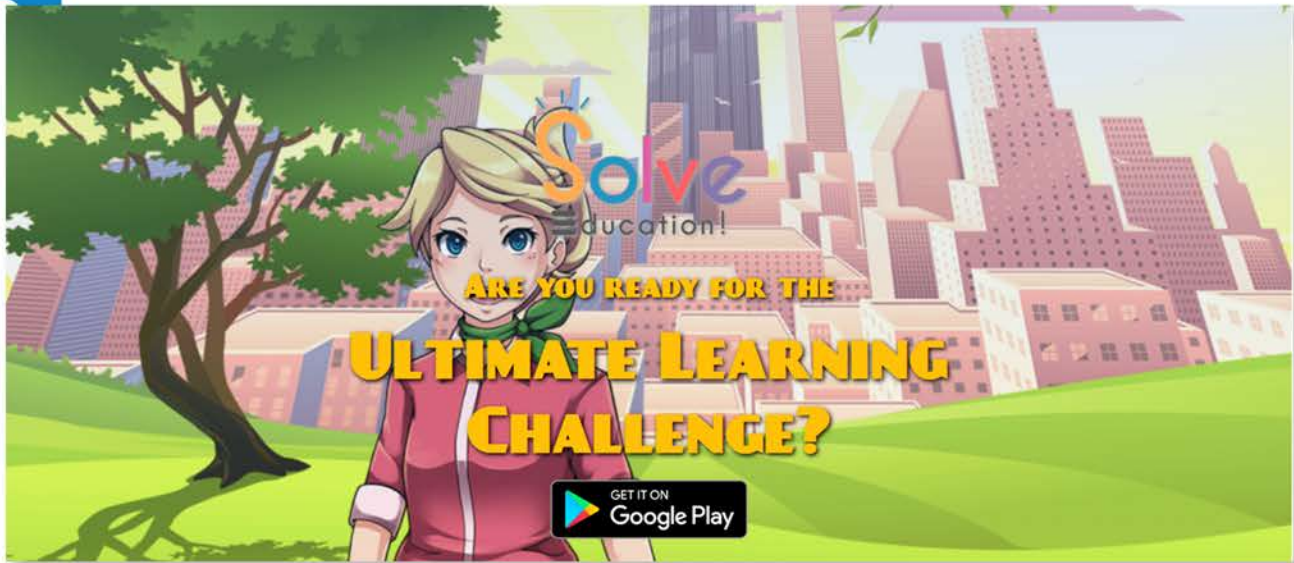
Figure 6: Solve Education!'s Ultimate Learning Challenge

stage, among other things, interrupt the adoption of our game app. Nevertheless, the rapidity of uptake is something we have been willing to sacrifice as we seek to perfect the platform and strategy.

Ultimate Learning Challenge

In conjunction with the launch of Dawn of Civilization, we launched our Ultimate Learning Challenge to nurture students learning motivation through a digital learning competition. We observe students activity and progress and reward the highest achieving students who learn on the app.

The winners will be announced on the 29 February 2018 and the prizes provided by:

- Ecole hôtelière de Lausanne
- Beary Best Hostel Singapore
- Solve Education!

I'm so excited to play Dawn Of Civilization. And I think my English has been improved in a fun way of learning!

Siti Fatimah
A high school student,
Yayasan Al-Qomariyah

Learning Analytics Portal

Improving Teaching and Learning through the Use of Measurement, Data, and Analysis

Background

As educators, learners, and even governments have realised the power and potential of broadband internet, online learning has become a fast growing and important sector of the education field. The ability to connect with other learners, teachers, and school administrators around the world online has provided academics and education specialists with the opportunity to explore new models of teaching and learning. The accumulation of large-scale data can provide predictive information regarding learning behaviours and activities that might indicate risk of failure or potential for success.

Investment in data collection and storage and development of context-sensitive algorithms are all-important to improving teaching efficacy. At Solve Education!, we are devoted to overcoming barriers that limit student access to education, and as such marginalise them from the economy, through a mobile phone gaming app. Our focus is on finding ways to make learning compulsively engaging on a platform that allows it to reach those who need it most. As a human-centred technology, we ensure that we cater to the needs of our individual students and provide them with evidence-based education. By collecting data on student learning behaviours and activities, we are able to respond to their needs and modify the game app according to what promotes the best learning. We believe that educational data can improve the quality and value of the learning experience on the app.

Design Framework of Learning Analytics Portal

Our Learning Analytics Portal allows us to display and contextualise information out of the educational data and prepare it for the different stakeholders (donors, teachers, software developers, policy makers, and students). By analysing information flow and student behaviours in real time, we can support individual learning processes and the organisational knowledge management processes. At a learner level, learning analytics can support students self reflection on learning processes and offer students personalised information on

their progress. At an institutional level, learning analytics can enhance monitoring processes and suggest interventions or activities for particular students.

In the design of Solve Education!'s Learning Analytics Portal, we use Greller and Drachsler's generic framework for learning analytics. This framework considers six critical dimensions, with each of the dimensions subdivided into several instantiations. The framework stresses the intrinsic connection between the six different dimensions and the impactof the analytics process of the analytics

process on the end user and the data suppliers. We understand that if one of the parameters changes, the outcome and anticipated benefits will also change. That is why we aim to consider all six dimensions in the design and development process of the Learning Analytics Portal to ensure the reliability of results. More importantly, we aim to ensure the protection of the data subject, usually the students, by not sharing their information without their (or their parents') consent.
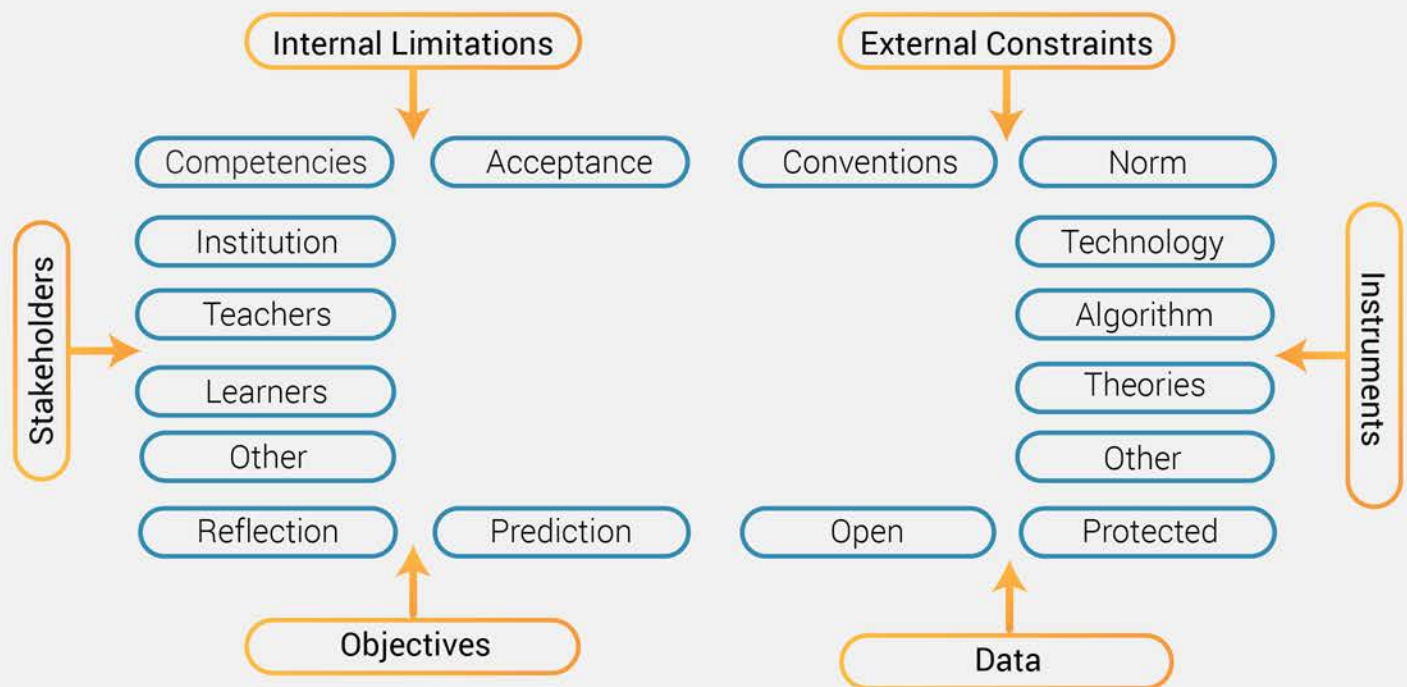
Figure 7: Greller and Draschsler's Generic Framework for Learning Analytics

Early Version of the Learning Analytics Portal

The Learning Analytics portal is a dedicated digital space for viewing learners' learning performance and behaviour; to see where they are at, what skills they need to improve, and what hinders their progress.
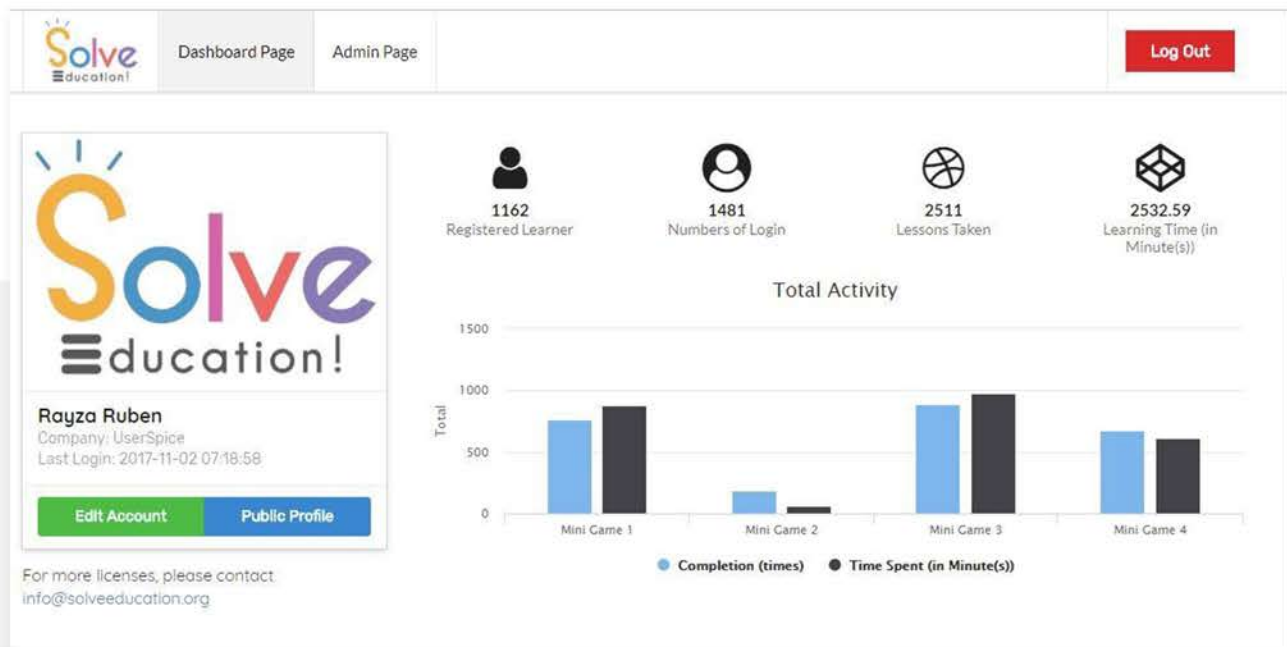
Figure 8: General Information

Four key metrics are used in the Learning Analytics Portal, as follows:

The Popularity of Minigames: We evaluate learning intensity of each individual student (how engaged are users with the mini games in the app?) and the length of study (how long do users play these minigames, in minutes?) to compare the popularity of mini games among users.

Periodical Learning Intensity: We detect students' passive behaviour or inactivity indicating that they are not interested in learning/playing. After receiving and analysing the information, we can respond by notifying students (users) on their phone, or sending emails to invite them to continue playing the game.

Student Success Scorecard: We show each individual student's learning progress using a periodical line chart.

Learning behavior: This metric is used to illustrate students' soft skills i.e. grit, diligence, and discipline.
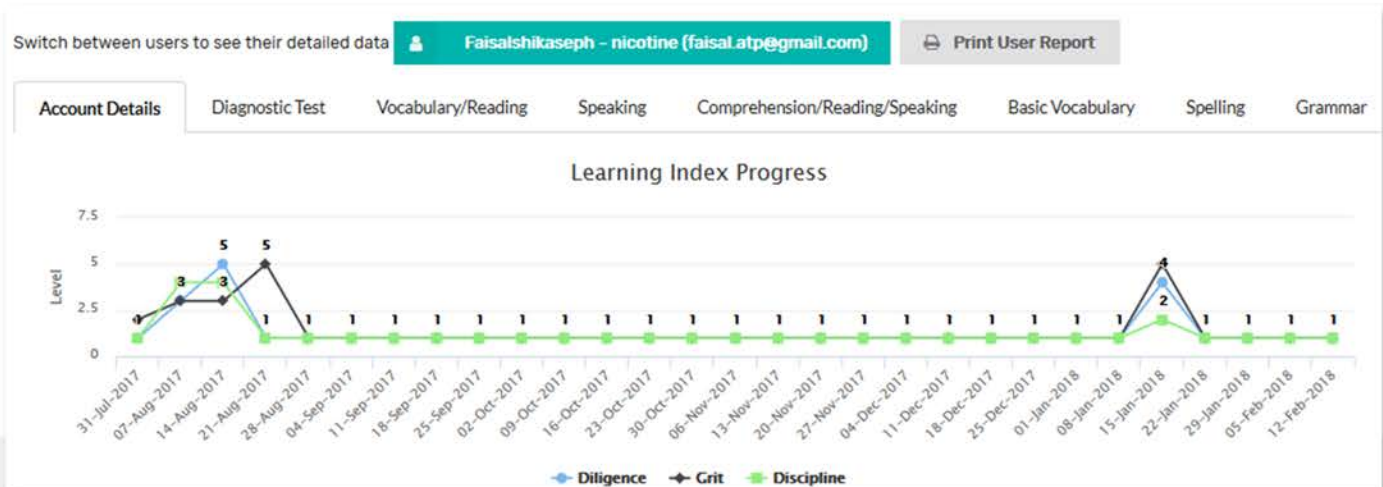
Figure 9: Student Learning Index Progress

The beta version of the Learning Analytics Portal was launched in July 2017. In the months following this, the Solve Education! team began data collection for individual learning sessions, as well as individual soft skills analysis in the form of a Grit Index, Discipline Index and Diligence Index.

Students who play Dawn of Civilization are not informed about these indexes. Instead we analyse their natural behaviours on the app to come up with the results for grit, discipline, and diligence. At the end of the year, we managed to improved downloadable student report cards to help stakeholders read the data more easily.

> I support SE! because they are solving a real problem that being not only the lack of educational access to many children, but the challenge of an education system that does not promote a desire to learn. I like that SE! approaches education holistically - it focuses on curriculum as well as learning methodologies, while also making it a fun experience, all necessary aspects of education to address. Plus, SE! is doing it in a fashion that is scaleable in a realistic manner.

Metta Murdaya
Managing Director at PT. Cipta Cakra Murdaya (CCM), Co-Founder of JUARA Skincare

Solve Employment!

Building Real Life Incentives for Students who Learn through Dawn of Civilization

Background

Millions of young people in developing countries are driven to leave school by poverty, social vulnerability, problems of education access and quality, gender-related discrimination, and diversity politics. This has huge consequences for labour/employment. The ILO World Report on Child Labour of 2015 indicates that up to 30 percent of adolescents and young adults in developing countries included in the survey programme complete their labour market transition by the age of 15 years - as child labourers. Many of these young people, trapped in exploitative jobs, experience deterioration in their physical and mental health. This unprecedented youth employment crisis has prompted the ILO to call on all global stakeholders to take urgent action through a multi-pronged approach geared at employment growth and the creation of decent jobs. The aim of this call to action is to provide vulnerable youth with a fair income, security and safety in the workplace, social protection for families, and better prospects for personal development and social integration.

Since we believe in an economy that generates opportunities for investment, entrepreneurship, skills development, job creation, and sustainable livelihoods, we aim to level the playing field for vulnerable young people so that they may contribute to their society. Taking this into account, we attempt to create decent work opportunities for students who learn through our game app, Dawn of Civilization. In support of this, we have created a job portal that offers responsible freelancing opportunities for our students so that they can improve their income prospects, as well as refine their skills.

The Early Version of Solve Employment!

Solve Employment!, an online job portal, is an extended platform of Dawn Of Civilization. We link students' success in Dawn of Civilization with internship and employment opportunities in the portal. After students reach a certain level in the game app, our team will send them an invitation to access the job portal. We show the individual student's learning
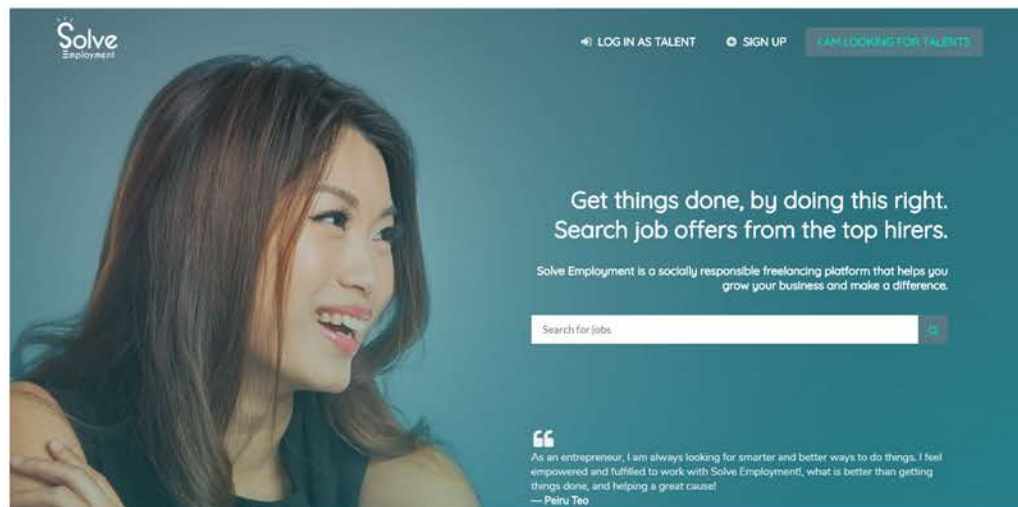
Figure 10: Solve Employment!'s Landing Page

iindexes on their profile page to inform potential employers about the individual student's level of skills and soft skills required and suitable for the job posted.

We partner with tech companies to provide students with the opportunity to work on micro-tasks such as indexing, labelling, localisation, transcription, customer service representatives, virtual assistants, and many more. Essentially, Solve Employment! is developed because we want to nurture a safe community for students to improve and refine their skills before they go into a more competitive marketplace. We ensure that each of the student hired by our partnered companies is given a fair income and opportunities for their personal and professional development.

The alpha version of Solve Employment! was launched in December 2017 and we plan to launch the beta version in February 2018. Although there is no job transaction yet in the portal, potential employers have started explore the website and place their job advertisements. Some of our students

who made significant progress in the game have been invited to check the job portal. Both employers (hirers) and job seekers (talents) can expect the following functionalities from our online job portal:

- Students can register as talents, create their profiles, and look for microtasks relevant to their interests.

- Talents can fill out a form and have a resume built for them.

- Talents can apply directly to posted microtasks.

- Hirers can register, post microtasks, and search talents profiles.

- A representative from a company should be able to register and post job advertisements.

- A representative from a company can view a list of talents and can contact them, initiative an interview via chat platform in the website, or perform some other action related to their post.

In the future, we plan to create online courses available for our students to learn the specific knowledge and skills required for the jobs posted on Solve Employment.
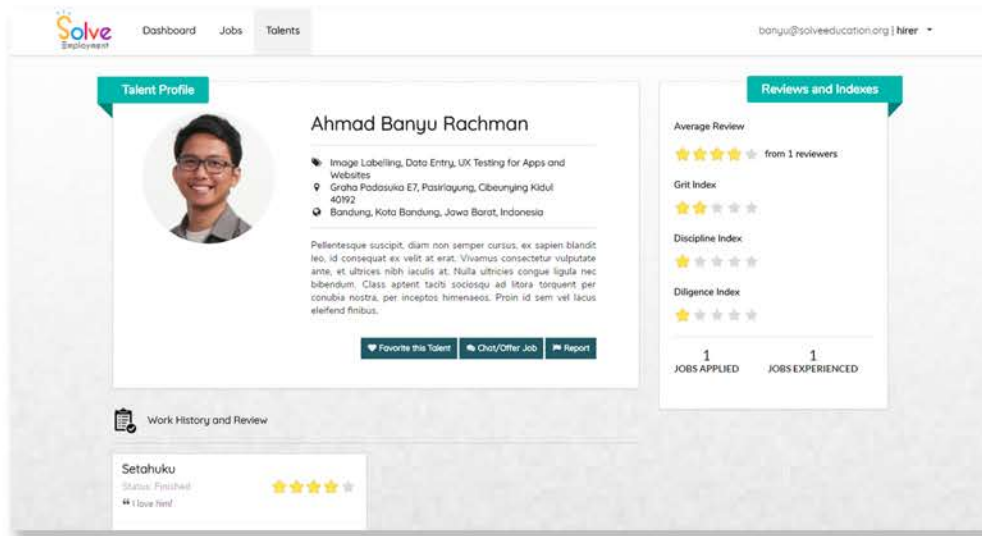
Figure 10: Talent's Profile at Solve Employment

"

The Singtel Group has always seen access to relevant education as fundamental to breaking the vicious cycle of poverty and addressing many other social issues. What excited us about Solve Education was their innovative and scalable approach to making education accessible and engaging. We loved the passion, purpose and capability of the leadership

Andrew Buay
Vice President, Group Sustainability at Singtel.
Talent Coach at Optus

Youtube Classifier

Helping Students Improve Their Listening Comprehension through Engaging Videos Curated by Artifical Intelligence

Background and Design Framework

For many years, language teaching experts have been using videos to make the learning experience more fun, engaging, and effective. With videos, students can see the speaker's mouths, and can better understand how their mouths move. Students can pause and rewind whenever they need to, and repeat as many times as they wish. They can slow down the video to catch things that they might have missed. Having a variety of materials through which to learn English is preferable in making the learning journey more fun and effective.

With regards to providing a variety of effective teaching methods, we have built a web-based programme called YouTube Classifier to help make students' learning journey more enjoyable. The programme
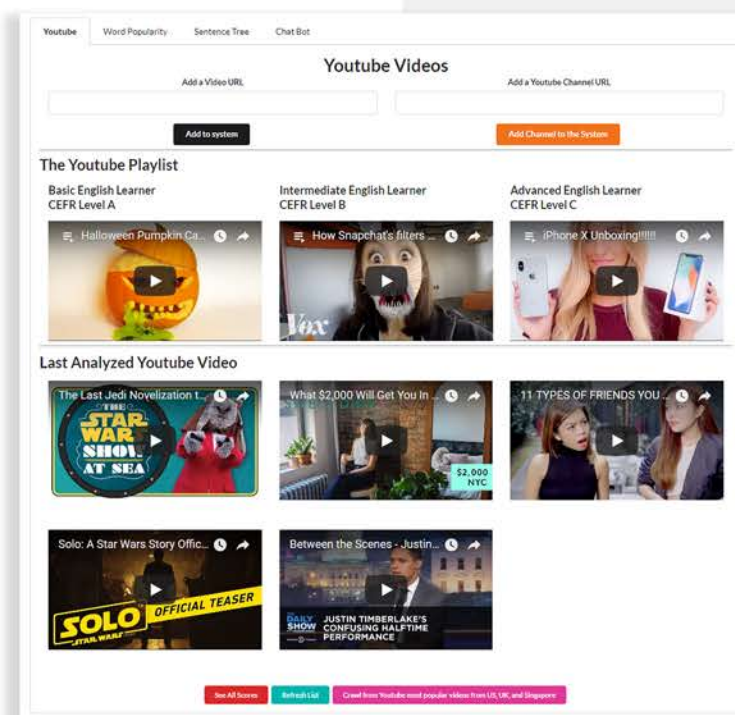
Figure 12: Youtube Classifier's Landing Page

can be accessed through solveeducation.org and is available for free.

We are experimenting with classifying videos based on the difficulty level of the vocabulary used in the video, using youtube crawlers to discover engaging videos, and stripping the subtitles out from the video. After this, we parse the subtitles through youtube classifier using our own algorithm.

The Alpha Version of Youtube Classifier was launched in November 2017 and is still in the process of development. To classify videos into English CEFR levels, we calculate based on the youtube captions and split those into sentences. We then break down each sentence into words and determine their level of difficulty based on dictionary.com -- total words, and total unique words.

After analysing the words, we proceed to score or determine the complexity of each sentence complexity using Stanford Parser. Stanford Parser is used to mark the Part of Speech (POS) tags and generate the sentence tree from a plain sentence. Based on the sentence tree and the POS tags, we can score the complexity of a sentence.

Our effort to ensure our students have an engaging way to learn English is not done yet. Through Youtube Classifier, we wanted to give our students necessary exposure to different cultures and ways of life, which they may not be exposed to directly. However, this research is still ongoing and we intend to improve the programme in the following year.

```
(ROOT
  (S
    (NP (PRP$ My) (NN dog))
    (ADVP (RB also))
    (VP (VBZ likes)
      (S
        (VP (VBG eating)
          (NP (NN sausage)))))
    (. .)))
```

Figure 13: A sentence Tree Generated by Stanford Parsing

Education is the key lever for the well-being of societies. SE! has the potential to fundamentally change the odds of millions who would otherwise not get access to important learning opportunities – and I am excited to support this journey.

Bernd Waltermann
Senior Partner and Managing Director at The Boston Consulting Group

Measurement Metrics

Performance Metrics

App Software

- Crashes
- Exceptions
- App size
- App star rating in Google play store

Engagement Metrics

Reach and Engagement

- Number of users
- Number of learning sessions
- Average session duration
- Active users: 1 Day, 7 Days, 14 Days and 30 Days

User Metrics

Literacy

- Number of users reaching proficiency
- % of users reaching proficiency
- Average time taken to reach proficiency
- Number of users improving CEFR level
- % users improving CEFR level
- Average time taken to improve CEFR level

Numerical reasoning

- Number of users reaching proficiency
- % of users reaching proficiency
- Average time taken to reach proficiency
- Number of users improving Maths level
- % users improving Maths level
- Average time taken to improve Maths level

Economic well-being

- Average household income increase
- % willing to seek employment
- % gained employment
- % goes into entrepreneurship
- Average monthly income

Mental/Emotional well-being

- Income satisfaction
- Health satisfaction
- Work satisfaction
- Grit, Discipline, Diligence Indexes

Business Metrics

Donation/Grants

- Total grants
- Total donations
- Cost of grant/donor acquisition

SE! Corporate Training

- Number of corporate customers
- Total revenue
- Customer Lifetime value
- Cost of customer acquisition
- Customer satisfaction
- End user satisfaction

Solve Employment!

- Number of hirers
- Number of job seekers/internship seekers
- Number of jobs/internships posted
- Number of jobs/internships matched
- Number of jobs/internships successfully completed
- Total revenue
- Customer Lifetime value
- Cost of customer acquisition
- Hirers satisfaction
- Job/Internship seekers satisfaction

Finance

Programme Expenses Ratio

4%
Travel expeses

5%
Admnistration

91%
Programme expense

Detail Programme Expenses

10%
Learning portal and other research projects like Youtube classifier

15%
Solve Employment

75%
Educational game platform
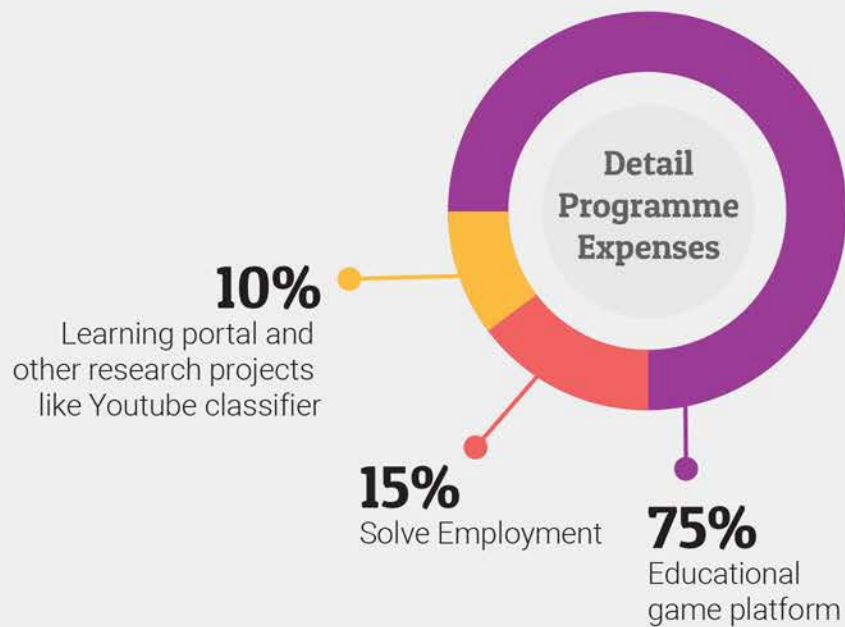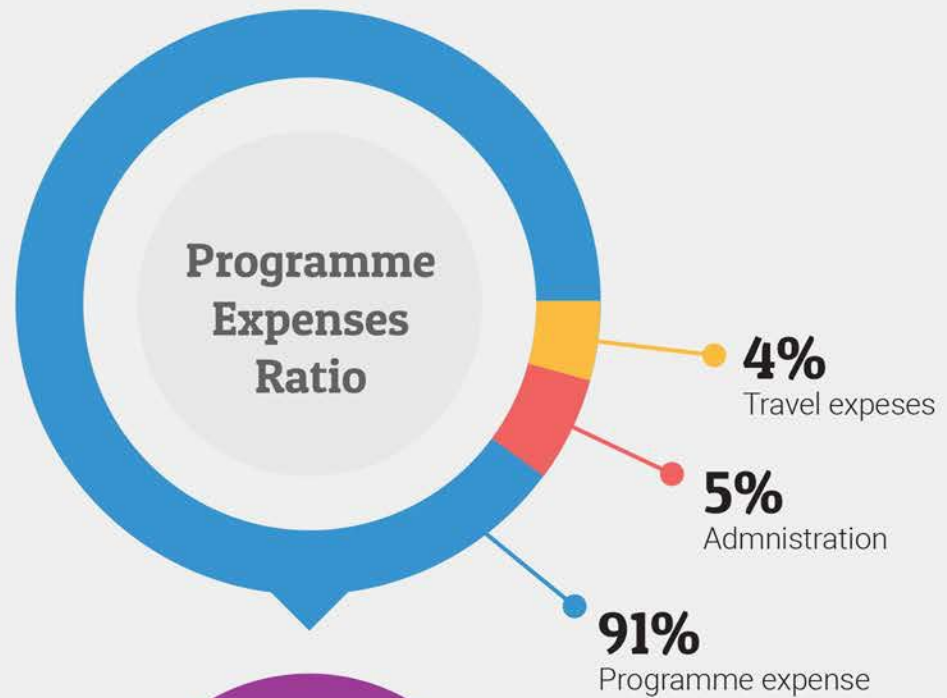
2017

Highlights of The Future Plans

The changing nature of the economy and its impact on the education sector around the world will drive Solve Education!'s 2018 workplan. As we continue to develop our technologies in support of learning and earning, we will intensify efforts on strengthening the capacity and sustainability of our organisation. This will be done in ways that are consistent with our long-standing vision to help young people access the knowledge-based economy. We will continue to develop and support collaboration on improving our evidence-based education opportunities for all young people, especially those who are marginalised from the current systems. In order to accomplish this, we have broken down our strategic plans as outlined below.

Solve Education! remains committed to ensuring learning opportunities for young people, especially the most marginalised. This work is designed not only to improve their income prospects but also to enable them to develop the necessary skills that are needed to build a foundation of the future learning. Achieving these goals will require further improvement on the appropriate and most effective pedagogical approach and accountability mechanisms of our learning platform. Strategies to improve our teaching efficacy include:

Teaching Efficacy

Core Curriculum: Perfecting our core curriculum, which includes English and Math education for our students, will be the primary focus of the 2018 work plan. We will work on improving the core curriculum to allow room for other content providers to contribute to our learning platform. We will also work to improve the learning measurement metrics, focusing especially on the English subject, to accommodate different learning needs and behaviours.

Question Recycler System: We are firm believers in the Space Repetition System in learning. We believe that in order to fully understand a particular concept, students need to repeat and recall what they have learnt. In 2017, we have developed a technology called Question Recycler to help our students learn English vocabulary more effectively. Since our students will also learn other different concepts, we are going to improve our Question Recycler System to accommodate a variety of concepts which are taught on the platform.

Testing, Community Engagement and Direct Observation: This has always been a crucial aspect of ensuring that our students benefit from our pedagogical approach. In 2018, we will continue to engage more students by partnering with local communities and organisations. This effort focuses not only on reaching more young people in need of education, but also to get meaningful feedback directly from our target beneficiaries.

The commitment to better engage young people in learning will be sustained by continuously improving the technologies we have developed, and the strategies by which we reach marginalised young people, more effectively and more consistently. Strategies to engage users to include:

Game depth: An ideal educational game app incorporating an engaging storyline so that users have a more profound reason to explore elements of the app and develop the hunger to learn. Improving our game depth will be achieved by having more features allowing the users to exchange resources or trade among their in-app learning community, to participate in peer learning in the most engaging way possible, and to be socially more active in the app.

User Engagement

To boost learning progress, we will build multi-user/asynchronous gameplay to help our students learn and play against each other more easily. This feature is considered to be vital because we believe that a sense of competitiveness and community can help our students feel more motivated to progress.

More mini games: Since our curriculum is delivered in a form of bite-size lessons/mini-games, we will continue building more exciting mini-games to help our students acquire knowledge and skills, and to cater for teaching different content.

In-house analytics: Although we have developed a Learning Analytics Portal, we still rely on Google Analytics in order to see the activities in the app. However, Google does not fully support offline analytics. Since our app is designed for both online and offline use, we have to collect more information than they can provide. Therefore, we plan to build more robust analytics for our app.

UX: Improvement in user experience will also be one of our primary foci in 2018, as it is crucial to ensure our users navigate the platform easily. Formal usability tests will be conducted with focus groups of selected students.

We will continue our efforts to ensure improved outcomes in education and youth employability. This is aligned with our understanding that desired outcomes can only be achieved when we build strong teamwork and sustainable organisational structures. To this end, we will continue to support our existing team members to reach their full potential and grow together with the team. In 2018, we plan to expand our team further and welcome more talented engineers, educationists, designers, and business development experts into our team. To do that, we will remain consistent with our commitment to nurturing all the potential we have within our team by continuously conducting training and mentoring for each of our team members.

Capacity Building and Sustainability

Moving forward, Solve Education!'s sustained commitment to capacity building will include an increased focus on revenue productivity. This is part of the effort to make our organisation 50% self-sustaining by the end of 2018. Strategies to create revenue include:

Learning Analytics Portal: Licensing our learning analytics technology to donors who want to see our students progress.

Solve Employment! Platform: Linking our students with potential employers who can help them obtain digital jobs.

Corporate training: Helping corporations to train their staff in English through our learning platform.

To conclude, all work with regards to our strategic plan in 2018 will be documented and reported as research projects and prepared for publications.

"

As I believe in the potential of games as a platform for educating and connecting people, I believe in and want to support SE's approach in tackling such a fundamental issue. Affordable devices and widespread internet access is a major opportunity to reach out to kids and young adults having difficulties to access a good quality educational system. SE is to empower them with the skills and tools to build a brighter future for themselves.

I am truly honored to have been given a chance to support SE in their radical and game changing mission.
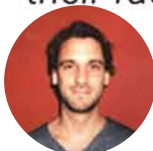
Benjamin Chevalier
Co-Founder and Art Director
at Mighty Bear Games

Achievements

Awards & Recognition

The Winner of Regional Singtel Group Future Makers 2017, Asia Pacific

The Winner of Singtel Future Makers 2017, Singapore

One of the Finalists of MIT Solve Challenge 2017, Global

One of the Top 3 Finalists of Singularity University Global Grand Challenge

In addition,

The Winner of Awesome Foundation Grant 2016

Public Speaking & Engagement

AMI ITB 2017, Bandung, Indonesia

AVPN Conference 2017, Bangkok, Thailand

Computer Science Leadership Seminar, Bandung, Indonesia

DBS Foundation Summit 2017, Jakarta, Indonesia

Ed-Tech Asia Summit 2017, Ho Chi Minh City, Vietnam

Indonesia Diaspora Congress Global Summit 2017, Jakarta, Indonesia

Language Teaching and Assessment for the 21st Century, Jakarta, Indonesia

Mensa The High IQ Society, Singapore

PLUS Impact Night, Jakarta, Indonesia

Tech and Humanity Conference 2017, Marina Bay Sands, Singapore

Voice of America, New York, USA

Woomentum 6th Crowdfunder Kickoff, Bali, Indonesia

World Education Congress 2017, Mumbai, India

938 Live MediaCorp Station, Singapore

News

AVPN News Blog
Title: "The Winner of Asia Pacific Future Makers 2017"

Bangkok Post
Title: "How One App is Making Social Ripples"

DailySocial.Id
Title: "Permainan Edukasi "Dawn of Civilization" Buka Akses Anak-anak Putus Sekolah Menuju Pendidikan Formal"

JalanTikus.com
Title: "Dawn of Civilization"

Huffington Post
Title: "Addictive Education: The App Revolutionizing Literacy"

"

Solve Education! is committed to identifying and revolutionizing innovative educational solutions that equip young learners with transferable skills that promote lifelong learning.

Tara Hill
Knowledge and Learning Manager, East Meets West Foundation

Team Solve Education!

Chief Executive Officer	Janine Teo		Director, Education & Development	Talitha Amalia
Game Producer	Jack Seymour		Game Designer	Jerry Pritchard
Software Engineer	Stevan Panic		Game Developer	Batara Sakti
Lead Web Developer	Faisal Putra		Game Designer	Doddy Eko Nuryanto
Game Developer	Albert Rusli		Game & Web Designer	Banyu Rachman
Learning Designer	Endah Nursalehah		Quality Assurance	Andreas Satria
Junior Program Officer	Nanda Baskoro			

Board Members

Chairman

Peng T. Ong

Board Member

Janine Teo
DR Bernd Waltermann
Choo Boon Tiong
Regi Wahyu
Hadi Wenas
Achmad Zaky
Metta Murdaya
Aswin Andrison

Expression of Thanks

We would like to express the most profound appreciation to the individual donors, organisations, and companies who provided funding for Solve Education!. It is because of the funding that our team has been able to develop the educational game app, learning analytics portal, online job portal as well as conduct a learning competition in 2017. The funding has also helped us operate and build the capacity of our team both in Singapore and Indonesia.

We would also like to extend the extraordinary thanks to all of our collaborative partners and supporters who contributed to the work on education and youth employability primarily in Indonesia and other ASEAN countries in 2017. It reflects the trust that our partners and sponsors have in the capacity and ability of Solve Education! to develop appropriate technologies in support of local communities and organisation working closely with our target beneficiaries. To conclude, all the supports have made possible the results described in this annual progress report.

Thanks to Our Donors!

Alvin Seo - *Singtel*
Andrea Zannier - *Oliver Wyman*
Andrew Buay - *Singtel*
Angelina Oguma - *Oliver Wyman*
Ashwini.karandikar - *Oliver Wyman*
Awesome Foundation
Beary Best Hostel Singapore
Bernd Waltermann - *BCG*
Caesar Sengupta - *Google*
Calvin Ong
Cheah Wei Ying - *Oliver Wyman*
Chia Boon Chong - *Singtel*
Choo Boon Tiong
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Future Maker Programme - *Singtel Singapore*
Fuyu Mouna - *Oliver Wyman*
Grace Sai - *The Hub Singapore*
Hang Qian - *Oliver Wyman*

Ida Wenefrida - *Indonesian Diaspora Foundation*
Jeremy Lim - *Oliver Wyman*
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Mouna Aori - *Woomentum*
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Paul Beswick - *Oliver Wyman*
Peng Tsin Ong
Rafael Gil-Tienda - *Oliver Wyman*
Rebecca Abramson - *Oliver Wyman*
Regional Future Maker Programme - *Singtel Group Asia Pacific*
Richard McKenzie - *Oliver Wyman*
Samit Soni - *Oliver Wyman*
Saverin Foundation
SHOUT.ID
Timothy Colyer - *Oliver Wyman*
Wayne Silby

Dimitra Taslim
Graduate Student at Harvard Business School

Jordi Castello
Founder OLX.com

Papon Virameteekul
Co-founder of "Wizes Corporation Co., Ltd

Shannon Kalayanamitr
Co-founder and Group CMO of Orami

Vanessa Thompson
Founder of StoryBookMath.org

Benedikta Atika P.
Graduate Student in Business Strategy, University of New South Wales

Benjamin Chevalier
Co-Founder/Art Director at Might Bear Games

Fahrur Rizal
Graduate Student in Education in E-learning and Digital Technology, University of Canterbury

Franki Jenkins
Graduate Student in Global Studies, Humboldt University of Berlin

Lynette Chia
Squadroids.com

Melvin Zhang
CTO at Cosmiqo International Pte Ltd

Michelle Avelena
Masters Degree in Judge Business School, University of Cambridge

Thanks to Our Ambassadors!

Diane Jackson
C.E.O. and founder Global English Consultancy

Thanks to Our Volunteers & Interns!

Pierre Marechal
Co-founder and Director of RevUp

Roland Warren
Graduate Student in Education, Gender and International Development at the Institute of Education, University College London

Yudi Nugraha
Masters Degree in Business Administration ITB

ASEAN Youth leadership Association, the Philippines
A network of young people aiming to promote an inclusive and empowered youth participation working towards ASEAN Community Building through Community Development.

Crossroads Global Hand, Hong Kong
A virtual warehouse of Crossroads Foundation Hong Kong.

Datta Bot
An Indonesian Big Data Analytics company with a focus on data integration.

East Meet West, Vietnam
An international non-governmental organization that helps children from poor families in Asia and Africa gain a solid education.

Ecole Hoteliere Lausanne
Hospitality management school in Switzerland. The school is consistently regarded as the best hospitality school in the world.

English First
International education company that specializes in language training, educational travel, academic degree programs, and cultural exchange.

Gerakan Kepedulian Indonesia, Indonesia
An organization that seeks to build and develop communities that foster cultured, productive and self-sustaining families to become the future of Indonesia.

Gerakan Pemuda Ansor, Indonesia
A non-profit Islamic youth organization based in Indonesia, affiliated with Nahdlatul Ulama, the largest Islamic mass organization in the world.

Give Asia
Crowdfunding donations for charity.

Global Giving Foundation
Non-profit organization based in the United States that provides a global crowdfunding platform for grassroots charitable projects.

Thanks to Our Partners & Supporters!

Indonesian Diaspora Foundation, Indonesia
A foundation that organized, and operated exclusively for any and all charitable, scientific, literary or educational purposes in Indonesia

Magic Bus, India and Myanmar
An organization that helps children move from a life destined for abject poverty and become fully participative members of their communities with jobs.

Microsoft
An American multinational technology company that develops, manufactures, licenses, supports and sells computer software, consumer electronics, personal computers, and services.

Myanmar Mobile Education Project, Myanmar
An organization focuses on bringing non-formal education to Myanmar's child laborers.

Tanoto Foundation, Indonesia
An organization that aiming at improving access and quality to education, empowering rural and underprivileged communities to be self-sufficient, and enhancing rural quality of life.

UIN Syarif Hidayatullah Jakarta, Indonesia
State Islamic University in Jakarta, Indonesia.

Woomentum
Business Advice company with a mission to see more women fully participate in the engine of growth and innovation that we are experiencing today.

Yayasan Al-Qomariyah, Indonesia
Islamic orphanage based in Bandung, Indonesia, that empower kids with disadvantage or family conflict background.

Yayasan Cinta Anak Bangsa, Indonesia
A group of like minded people who are serious and passionate about making the world a better place according to our own individual talents and capacity.

Yayasan Kampus Diakonia Modern, Indonesia
An organization aimed at empowering street children to become independent, self-supporting adults by offering them with opportunities for a better life such as education, shelter, and etc.

Young-en, Singapore
Charitable organization that focuses to provide community service at Chinatown complex, Singapore

Zenius Education, Indonesia
Indonesia's Leading Educational Digital Content Provider.

Thanks to Our Partners & Supporters!

I am exceptionally pleased and proud to be associated with Solve Education! which truly lives up to its name, aiming to solve the educational needs of multitudes of young people who, due to circumstances beyond their control, have been deprived of the chance to attend formal schooling but who deserve, more than anyone else, an opportunity to learn English and develop themselves for self-advancement and self-empowerment!

Whilst tuning in to the immense magnetism of computer games, the Solve Education! team has been very careful in constructing a reliable language learning framework which focuses on all four language skills, and around which an interactive game develops, as the individual player/student progresses comfortably into language proficiency and fluency, feeling engaged and motivated. As initially the game targets vocabulary and correct grammatical formation. Notably, much needed exposure is given to listening and speaking elements. These frequently neglected language skills are vitally important in real-life application of the language. I think my favourite aspect of the Solve Education! approach has to be the psychological aspect, in that success builds a positive mind set, acknowledges personal achievements and increases confidence in one's capabilities and ultimately, oneself... and learners achieve all of this ...in the absence of teachers! It's phenomenal!

Diane Jackson
C.E.O. and founder Global English Consultancy

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