ThinkFun Education Programs
Aligning Program Goals with the Partnership for 21st Century Skills and
The Singapore Ministry of Education

"The ThinkFun Game System is a channel to acquire 21st century competencies."

This is a proposal to BVPS for how to structure the focus of our program development work this week. We understand that you have specific objectives that you want to meet also, such as teacher training. Let us discuss this proposal in the context of our larger objectives... If we are wholehearted about this direction, let us push it as hard as we can. If you have other priorities to focus on, let us talk through these and make sure that our time together is spent in the right way.

The MBA program was put in place as a way to meet the objectives framed out in the Singapore MOE C2015 Student Outcomes. These outcomes represent a powerful vision, one which we support. They are:

-   Confident Students
-   Self Directed Learners
-   Concerned Citizens
-   Active Contributors

In doing research on these goals and the Singapore MOE in general, I observe that these principles align closely with the Four C "Learning and Thinking Skills" that are a cornerstone of the Partnership for 21St Century Skills organization's purpose. The Learning and Thinking Skills deemed essential are:

- Critical Thinking and Problem Solving
- Communication
- Collaboration
- Creativity and Innovation

The Singapore MOE describes a set of Outcomes, a vision for the future; the Partnership describes a set of skills to be acquired to be prepared for this future.

The question we need to ask ourselves now is... can we create a program that effectively teaches these skills, and that can measure and assesses student progress with each of these skills? If we can do this, will this help achieve the stated MOE and BVPS objectives?

I think there is an argument that this can be the case. If the program works well and students are indeed engaged and progressing, they will naturally be reinforcing and developing the "3C Competencies"

- Curiosity
- Cooperation
- Confidence

And... if we can genuinely learn to teach a set of techniques and modeling experiences that help to transfer their experiences into success in larger life experiences, then we will have achieved the outcome of having produced:

- Confident students
- Self Directed Learners
- Concerned Citizens
- Active Contributors

What Will We Need to Focus On?

Critical Thinking and Problem Solving

We start with the understanding that each of these games embody the essence of critical thinking and problem solving, students who are actively engaged are happily living this experience for themselves. The most basic goal of our program must be to cause students to become more self aware of their solving experiences, and to be able to understand and reflect on what is happening, what is to be learned and what is worth remembering.

Are there problem solving techniques we already believe in that we want to find a way to teach through this program? What can we learn from experiences of other teachers who are following a similar path? Is there a place for the Super Solver System of Problem Solving?

What outcome do we want from our students? How to assess whether they have improved their problem solving and critical thinking abilities? We can measure improvement with the challenges, how many levels increased. Can we measure increased focus and perseverance, stronger confidence and curiosity? What can we teach, and what can we measure with these abilities?

Communication

The way to develop communication skills in this program is to define the program rules to include a communication component. In simple form, we can build in a reflection time at the end of a play session or have students write in their journals about their solving experiences. We can develop special game challenges that express specific patterns or characteristics and stimulate

discussions around this. By adapting the game rules sufficiently we can get all kinds of communication to take place. The important question will be, why are we doing it?

One of the reasons why communication about problem solving is difficult, is that we don't have a language that describes the problem solving process... we don't have good words. A goal of this program can be to teach the world a new set of words to describe a critical thinking and problem solving discipline that people can understand and resonate with.

What outcome do we want from our students? How to assess whether they have improved their communication skills and abilities? What should our assessment measures consist of? Will these accurately measure whether students are coming closer to attaining their C2015 Student Outcome goals?

Collaboration

Our focus on collaboration will come from redrafting game rules to turn the play experience more social, then organizing into groups and teams to play under the new rule system. There are many different forms that this can take, this becomes an exercise in imagination for the program organizers (that's ThinkFun, with help from BVPS). Our MathDice competition program requires strong collaboration skills for the Team Competition section, for example.

If your stated outcome is "Our pupils will know how to collaborate and they will be effective collaborators. Through this program we will teach them a basic set of systems and techniques that they will be able to use throughout their lives"... then what systems should we put in place as a part of this program to teach them these skills? How strongly do you want this? How closely can you describe what it is that you want to have happen?

Creativity and Innovation

Creativity and innovation training are not a core part of the basic ThinkFun program. This is because most of our core games rely on players facing challenges within a well defined game system; critical thinking skills are to be organized and focused within a narrow band.

If this is a goal to be supported by the BVPS program, it will be a straightforward process to build a system for this into the overall system. We can look to Math Fair, Destination Imagination, FIRST Robotics and other organizations who overlay a larger purpose onto their programs to instill more possibility, to add creativity and innovation to the program.

BVPS school's niche is Aesthetics. How can the MBA program be integrated into school to add creativity and innovation? In their Math Dance program, Dr. Schaeffer and Mr. Stern teach students to use Tangrams as performance art. In Math Fair students build and then present their brain teaser puzzles to fellow students. Destination Imagination includes a Module in their training guide devoted to "Creativity & the Creative Problem Solving Process" and uses the SCAMPER idea generating tool in their process. We can do what we decide to do.