



CHRIST CHURCH GRAMMAR SCHOOL



## Future Problem Solving How to Engage Our Most Able Boys

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## Definitions

- Gifted students:
  - are those who are identified in the **top 10%** of the population.
  - Gagné defines giftedness as the possession of natural abilities or aptitudes at levels significantly beyond what might be expected for one's age, in any domain of human ability.

**In simple terms = outstanding ability or potential.**

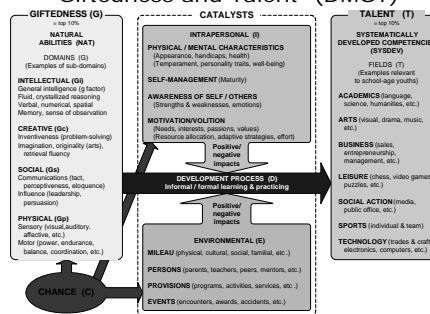
- Talented students:

– While giftedness equates with high ability, talent equates with high achievement.

– Gagné defines talent as achievement or performance at a level significantly beyond what might be expected at a given age.

**In simple terms = outstanding achievement**

## Gagné's Differentiated Model of Giftedness and Talent (DMGT)



## Identification

- Psychometric
- Aptitude Testing
- Standardised Achievement Testing
- Teacher-made Testing
- Off-Level Testing
- Parent Nominations
- Teacher Nominations

## Provisions and Strategies

- Pre-testing
- Compacting
- Tiered Assignments
- Accelerated Pace
- Ability Grouping
- Independent Research Tasks
- Negotiated Learning Contracts
- Learning Centres

## Differentiation

- Definition

Differentiated curriculum addresses the different learning styles and rates of learning of students in both mixed ability and self-contained gifted classrooms.

(B MacLeod, 2004)

## Models of Differentiation

- Bloom's Taxonomy
- Kaplan Model
- Williams' Model
- Maker Model

## Maker Model

- Content Modification
- Process Modification
- Product Modification
- Learning Environment Modification

(Maker, 1982)

## True Gifted Program

- Would everyone be able to do it?
- Could everyone participate?
- Should all students succeed?

– (Harry Passow, 1988)

## Challenging Your Thinking

- US Study showed that 50% of curriculum could be removed for gifted students (K Rogers, 2001)
- All children are not gifted
- There are up to six year levels in a typical Year 7 class (F Gagne, 2006)
- Not all teachers are able to teach gifted students

## Challenging Your Thinking

- It is not elitist to cater for gifted students
- Gifted students cannot do it all by themselves
- Learning rates differ dramatically
- Grouping is an effective provision and is backed up by a massive amount of research (M Gross, 2007 & K Rogers, 2006)

## Levels of Giftedness

- Profoundly 1/1000000 IQ180+
- Extremely 1/100000 IQ165
- Exceptionally 1/10000 IQ155
- Highly 1/1000 IQ145
- Moderately 1/100 IQ135
- Mildly 1/10 IQ125

## HOTS not MOTS

- How do you make sure that students are working in what Vygotsky called the zone of proximal of development?

Future Problem Solving  
Program

***Opening the Doors***



**It isn't that they can't see the solution.**

**It's that they can't see the problem.**

***G.K. Chesterton***



## FPS in Australia

- In existence internationally since 1974
- The first non-US affiliate in 1988
- Largely volunteer national committee of full-time, practising educators
- FPS reaches approximately 6000 students nationally and over 250 000 internationally

## History of Future Problem Solving

- 1953: Alex Osborn (*Applied Imaginations*)
- 1967: Sidney Parnes (*Creative Problem Solving*)
- 1974: E. Paul Torrance (*Future Problem Solving*)
- 1979 – 85: Expansion to most states of **USA**
- 1985: International Conference established
- 1988: **Australian** affiliate program begins ( inc New Zealand )
- 1994: **New Zealand** becomes affiliate in own right
- 1998: Teams from **Singapore & Hong Kong** first participate in Australian Program
- 1999: Teams from **Malaysia** compete in FPSP Australia
- 2001: Malaysia becomes first country in SE Asia to compete at International Conference
- 2002: **Korea** accepted as affiliate program in own right
- 2004: Best team from Hong Kong competes in Australian Final
- 2005: Teams from Singapore, Hong Kong and Malaysia compete in Australian Final
- 2006: Teams from Singapore, Hong Kong and Malaysia all participate in International Conference
- 2007: **South Africa** joins Australian Program (N Cassinader, 2007)

## The Goals of Future Problem Solving

- Extension and challenge for gifted & talented students
- Life skills
- Academic goals

## Life Skills from Future Problem Solving

Helping young people develop the skills necessary to live with confidence in a changing world

- Thinking Clearly
- Thinking Creatively
- Thinking for the Future
- Using Research Effectively
- Working in Teams
- Developing Communication Skills
- Working with Self-direction
- Coping with Ambiguity



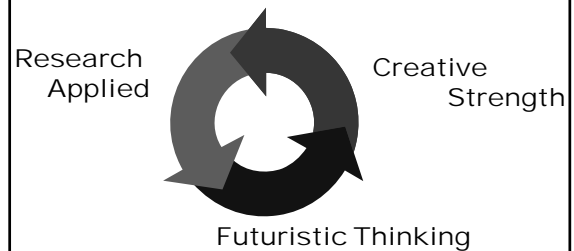
## Academic Goals of Future Problem Solving

Enhancing Students' Learning in:

- Higher order thinking
- Problem-based learning
- Reflection and thought
- Self and Group Organisation
- Reading & writing accurately and efficiently
- Non-verbal communication
- Intellectual rigour
- Developing initiative & enterprise
- Adaptability
- Coping with change



## Essence of the FPS Thinking Process



## The Future Problem Solving Thinking Process



1. Generate Problems & Challenges
2. Select an Underlying Problem
3. Generate Solution Ideas
4. Select Criteria to Evaluate Solutions
5. Apply Criteria to Evaluate Solutions
6. Develop a Plan of Action based on best solution

## Components of the Future Problem Solving Program

1. **Regular Booklet Program**
  - a. groups of four (4)
  - b. individual participation
  - c. non-competitive
  - d. non-school based
2. **Scenario Writing**
3. **Community Problem Solving**
  - a. team
  - b. individual
4. **Curricular Division**
  - a. booklet
  - b. Action-based Problem Solving (AbPS)
5. **School Curriculum**

Primary	Grades P - 5
Junior	Grades 6 - 7
Middle	Grades 8 - 10
Senior	Grades 11 - 12

*Western Australian figures*

red : competitive  
white: non-competitive  
green: curriculum based

## Topics in FPS

- Set internationally after global input
- Humanities, sciences, business and sociological issues
- Five topics per year

## Past Topics

- Cultural Prejudice
- Homelessness
- Environmental Law
- Prejudice
- Privacy
- Water
- Mental Health
- Nanotechnology
- Immigrants
- Terrorism / Security
- United Nations
- Natural Disasters
- Freedom
- Women in the Workplace
- Climate Change
- Oceanic Species
- DNA Identification
- Antarctica
- Robotics

## Topics for 2009 Booklet Program

- Olympic Games (Practice: 3 steps)
- Cyber Conflict (Practice: 6 steps)
- Space Junk (Qualifying Problem)
- Counterfeit Economy (Australian Final)
- Pandemic (International Final)

## How it can be Delivered

- Extra curricula, e.g. Club
- In class – differentiated unit
- Pull Out Program – ‘Instead of’ Idea
- Elective – subject in its own right

## Positives for Talented Boys

- Think more creatively
- Active interest in future
- Improve oral and written skills
- Solve problems with a structured six-step process
- Work co-operatively with like minded learners
- Learn about complex societal issues
- Develop research skills & think analytically

## Questions and Discussion



# Future Problem Solving



Australian Government  
Quality Teacher  
Programme



## CN7163

### BEGINNER COURSE

*Community Problem Solving,  
Scenario Writing and Action Based Problem Solving*

Thursday 5<sup>th</sup> March

8.15am – Registrations - 4.30pm

Tompkins on Swan, Cnr Canning Hwy  
and Dunkley Ave , **ALFRED COVE**

## CN7164

### ADVANCED COURSE

*Advanced Coaching & Evaluation*

Friday 6<sup>th</sup> March

8.15am Registrations – 4.30pm

Tompkins on Swan, Cnr Canning Hwy  
and Dunkley Ave , **ALFRED COVE**

**AISWA/ATP Members: \$0**  
**CEO Members: \$75**  
**Non Members: \$150**

Please click on this link [www.fps.org.au](http://www.fps.org.au)  
, participants can go to 'Program Options'  
to read more about each of the programs.

**Please register by**  
**3<sup>rd</sup> March 2009**

A training workshop for teachers designed to strengthen students writing and problem solving skills in relation to future global issues. This workshop will enable teachers to deliver the FPS program in the classroom or as a co-curricular elective.

**Valerie Volk** holds a Master of Education from the University of Melbourne and a PhD from the University of New South Wales in the field of Gifted Education. She has taught in high schools in Geelong and later at Luther College, Croydon, and was formerly a lecturer in Comparative Education and Sociology of Education in a number of tertiary institutions in Victoria and Queensland. Valerie's interest in gifted education drew her to the Future Problem Solving Program, which she describes as the most challenging activity she knows for extending able students. Since 2000 she has been one of the Australian directors of the program, and heavily involved in conducting coach training workshops in South East Asia, especially Singapore, and has been a key member of the International Board of Trustees.

**Please Note: Registrations for all AISWA PL events are submitted on-line via the AISWA website**  
[www.ais.wa.edu.au](http://www.ais.wa.edu.au)

#### Not an AISWA member?

Click on Non Members click here tab  
Select the month of PL event  
Locate the event by scrolling through  
the list and click the Register tab  
(please be aware pop-up screens need  
to be active and not blocked).

#### Like to Register for AISWA's Website?

Click 'Login' (found on left hand side of  
screen).  
Select 'Teacher Login', then click on 'Not yet  
registered?'  
Follow prompts.  
Once approved by your school, your  
password will be sent via email.  
Only staff of AISWA member schools can  
apply for LOGIN

#### Already AISWA registered?

Click on "Login"  
Choose your "Account" (Head of  
School/Teacher/Authorised user)  
Enter your email address & password  
Click PL Calendar on right-hand side  
menu then choose month of your PL and  
scroll through list.  
You will receive an email confirmation if  
you have registered correctly.

#### **PLEASE SIGN THE ATTENDANCE SHEET**

We rely on your signature to be able to credit you with PL hours, and failure to sign in you being billed for non-attendance.  
**Please retain your email confirmation as both your schools invoice and your personal WACOT PD record. Certificates not given**

#### **CANCELLATION POLICY**

Should you need to **CANCEL** please do so **48 hours before the event**. Email [thogan@ais.wa.edu.au](mailto:thogan@ais.wa.edu.au) to cancel.  
Failure to do so will incur a charge for you or your school.