角色扮演遊戲與樂育研究

Role Play Simulation Games and Edutainment Study

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Outlines

1. 產業發展條件分析
2. 遊戲與玩具研究
3. 〈連發槍〉個案研究
4. 結論：[遊藝學] 研究

1. Conditions of Enterprise Development
2. The Study of Plays & Games
3. The Analysis Case Study of "Shooting Games"
4. **Conclusion:**
   The Study of 'UE'
   - The Art of Play

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1. 產業發展條件分析

Conditions of Enterprise Development

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1.1 產業『三何』問題之思考

3 level of Enterprise's Thinking Problems

Know-*How*	生產科技 **Production Technologies**	To Materialize Toys, Games…
Know-*What*	市場開發 **Market Development**	
Know-*Why*	*"人需"之了解* *Understanding Customers' Needs*	Human Factors for Design

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1.2 Technologies / Market / Needs

1. Technology Dev. （Know-How）科技發展
2. Market Dev. （Know-What）市場發展
3. Study of Customers' needs （Know-Why）人性需求開發

Should be think of first

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A：〈市場先行〉之發展

The "Market comes first" Model

1. Find ways to Produce it
2. Initiated by Marketing Strategies
3. *Do we really need it?*

（e.g.. Fashion, Cosmetics, Brand Name Products …etc. ）

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B：〈市場先行〉之發展
The "Technology comes first" Model

1. Developed Technologies are available 科技發展
2. *Where is Market ?* 市場發展？
3. *Who to sell to?* 人性需求

（※ Hi-Tech, Sophisticated Techniques, etc…）

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C：〈人需先行〉之發展
The "Man's Will comes first" Model

1. Research on production Technologies 科技研究與發展
2. Create New Market 市場開發與發展
3. Initiated by man's Needs & Wants 人性需求、欲求引發發展

（e.g. USA's Moon-Landing Proj. ）

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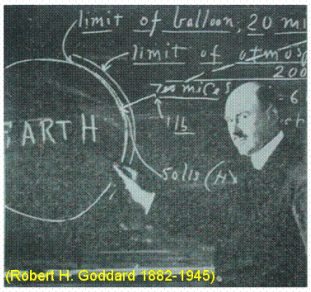
☐ Robert H. Goddard (USA)
Inventor of the Modern Liquid-fuel Rocket



(Robert H. Goddard 1882-1945)。

1926.03.16 The first Liquid Rocket

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☐ Russians Won the First Round of the Space Race (1957-1961)

The first man into the Space--1961.04.12

The first Satellite 1957.10.04

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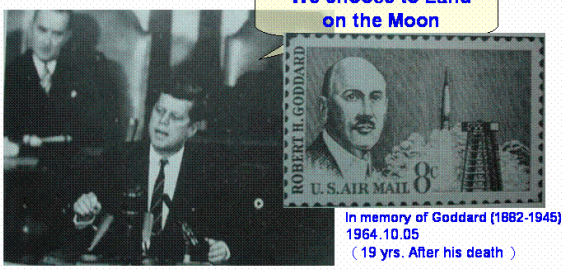
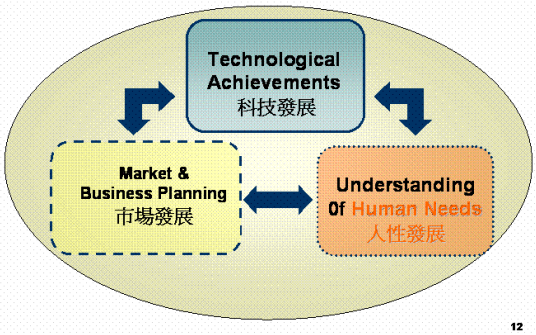
☐ Human's Will Leading the Development
President J.F.K's Statement in the Congress -1961.05.25



In memory of Goddard (1882-1945)
1964.10.05
（19 yrs. After his death ）

☐ 3 Interlocking Sub-systems



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□ 新世代機器人研發–ASIMO

- Honda's ASIMO robot

\ ***Hi-Tech***
\ ***Low Human need***
\ ***Low Market Value***

Demonstrating Technological Achievements rather than Designed to meet human needs

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□ The only matured Home-use Robot Product

- It's not about applying Higher Technologies;
  but the most Appropriate Technologies to fulfill What Human Need.

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□ A Hi-Tech. Hi-efficient Caring System

– As seen from an Engineer's eyes

Is this what you expect?

To begin with ***Tech.*** or with ***Human needs***?

(know-How) *(know-Why)*

□ wii 帶來的現象與趨勢分析

Lessons Learned from Wii, PS3 & X-box

- The design of PlayStation & X-box put emphasis on Hi-tech, Hi-effect & Hi-functions
- The development of Wii began with research on how all family members play with digital games

•**Findings:**

1. Human's needs determine the contents : And the contents define the Device's values

2. Form follow Functions, Functions follow Human needs.

3. Appropriate Tech is Superior to Hi-Tech

"人性主導content ； content主導硬體" 時代來臨

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2 . 遊戲與玩具研究

The Study of Plays & Games

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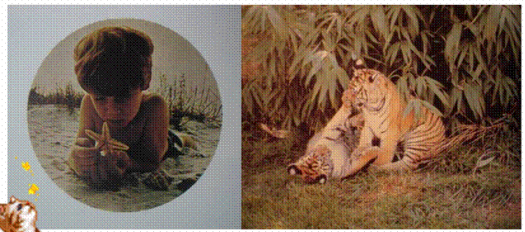
2.1 The Function of "Play"



The young of all animals learn Life Skills through Play Activities
→ **Born Curious and Intuitive**

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Play – Self-motivated Behaviors & Natural Learning Way

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Forms of Play: 3 Interaction Subjects

a.「玩」 – 與 "物" 互動

Interaction with ***Objects*** – e.g. dolls, balls, clay

b.「遊」 – 與 "境" 互動；

Interaction with ***Environment*** – Climbing, hiking, wading…

c.「戲」 – 與 "人" 互動。

Interaction with ***People*** – Group play, Games, Dramatic Play

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(a) [物玩] Play with Objects

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(a) [物玩] 玩材 / 玩物 / 玩具

Play Materials / Play Things / Toys

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□「物玩」類的範疇

Evaluating 3 Types of *Playing Objects*

	Playing Objects	Made of	Value / Price
1	玩具：電動火車 **Toys:** Train Sets	量產商品 Factory Products	高價格 Hi-price; Low-value 低價值
2	玩物：木條、橡筋 **Play Things:** Rods	創作材料 Found Objects	Low-price 低價格; 高價值 Hi-value
3	玩材：沙、土、水 **Play Materials**	天然素材 Natural Raw Materials	0-price 免價格; 高價值 Hi-value

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(b) [境遊] Play in Environment

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(c) [人戲] Play with Peers
扮戲(Real Life experiences)

〈群戲 / 扮戲〉

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(c) [人戲] Role-Plays：演戲
(Real Life experience Simulation Plays)

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2.4 生活形態發展改變童玩形式
Life Style Defines Forms of Toys & Games

- **4 phases of Life Style development:**

a. 農業期 Rural era（ ～1950）→*Fading out*
b. 工業期 Industrial era（1950～1970）
c. 電子期 Electronic era（1970～1990 ）
d. 電腦期 Computer era（1990～Now ）

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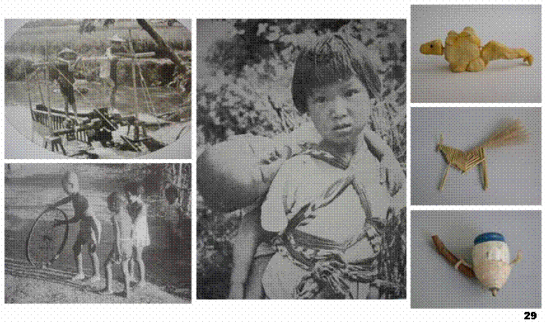
	1 Rural era 40's	50	2 Industrial era 60's	70	3 Electronic 80's	90	4 Computer era 2000's
生活方式 Life Style	鄉村 Village, Countryside		都市 Town/City		電視 TV		電腦 Computer
空間 Space	田野大地 Nature, Fields		鄰里街巷 Street/Alley		客廳 / 旅遊 Living Rm. /Field Trips		電腦桌 / 網路漫遊 Comp. Table /Cyberspace
時間 Time	放牛吃草 Free		玩 Play / 學 Study		學 Study / AV / TV		學 Study Internet/ Cyberspace

a. 鄉土（農業期）手製童玩
Rural Era's Childhood: Hand-Made Toys



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b. 近代（工業期）機製量產玩具
Industrial Era's Childhood: Mass-Production Toys

From Dr. S. T. Chang's File.

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c. 現代（電子期）童玩

Electronic Era's Childhood: Video Games

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d. 當代（電腦期）童玩

Computer Era's Childhood：Toys & VR Games

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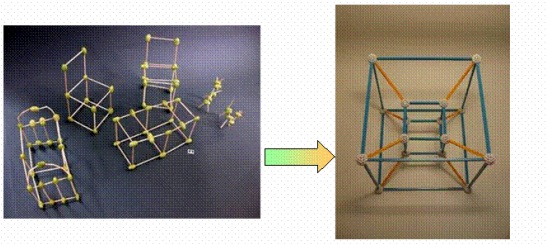
□ 物玩〈豆工〉建構玩具現代化

Traditional "Pea Works" into Modern Construction Toy



Hi-Value • Low-Price ⇒ **Hi-Price • Lower-Value**

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□ Transformation of Role-Play Games

□ Transformation of Shooting Games

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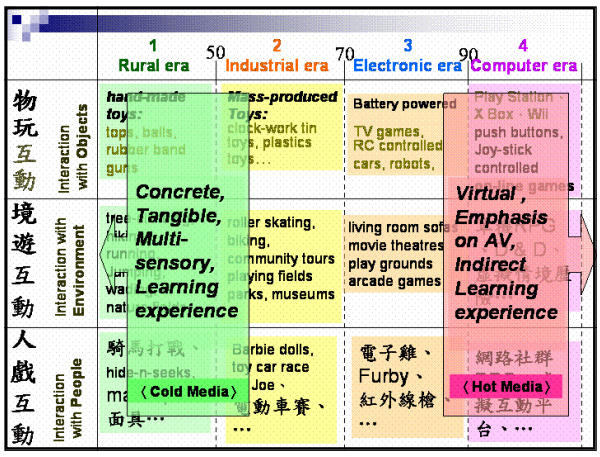

☐ 冷媒介有無界的想像參與空間

Cold Medium Invites More Participation

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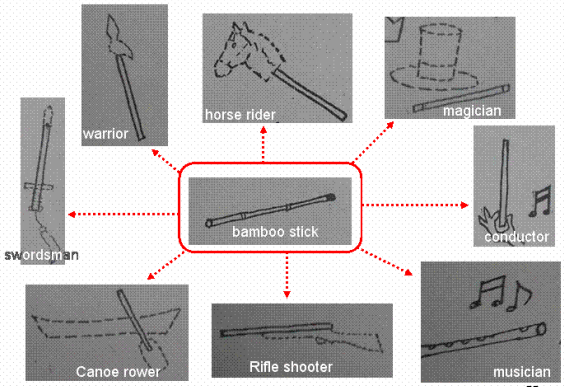
How can a child play with a bamboo stick?



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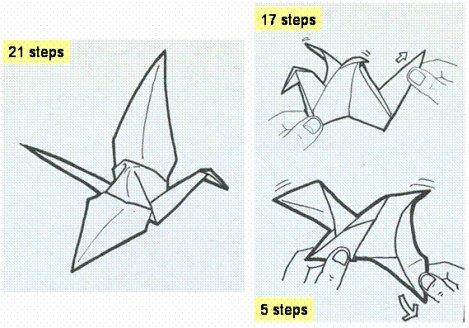
☐ Evaluating the values of Paper-Folding Toys



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☐功能類型：觀看 / 操作 / 創作

Evaluation of Functions : Look / Manipulate / Create

Evaluation Criteria For Three Paper-Folding Birds	To Look 紙鶴（"看"玩具）	To Manipulate 振翅鶴（"玩"玩具）	To Create 飛鷹（"做"玩具）
操作性 Manipulate	Eye-contact only X No	Hand-operated ◯ Yes	Hand-operated ◯ Yes
創作性 Create	X No (21 folds)	△Probably (17 folds)	hands+brain ● Yes (6 folds)

Low Edutainment Value for kids → High Edutainment Value for kids

Do you want to be a "Rural Era's Kid" for 5 minutes?

Give me 5 minutes, I will give you the experiences.

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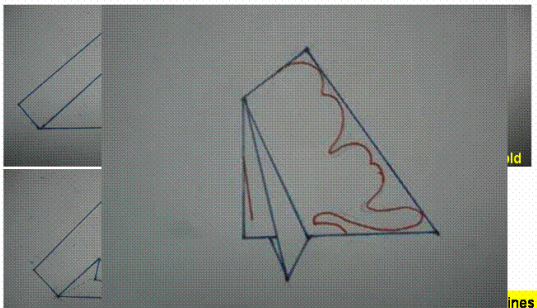
☐ Step-by-Step to A Butterfly



Your challenge: Can you Apply this mechanism to create various moving toys?

Evaluating the Values of the Work

- Concrete, tangible experience
- Open-ended approach (e.g. Birds, Peacock, Butterfly)
- Build self confidence
- Enrich creativity power
- Sense of achievement from the work
- Training for higher level learning

→ *good self-learning project for children of all ages*

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3. 案例分析

鄉土自製童玩〈連發槍〉

The Analysis Case Study of "Shooting Guns"

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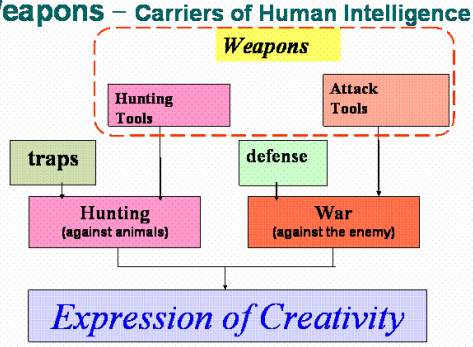
Weapons – Carriers of Human Intelligence



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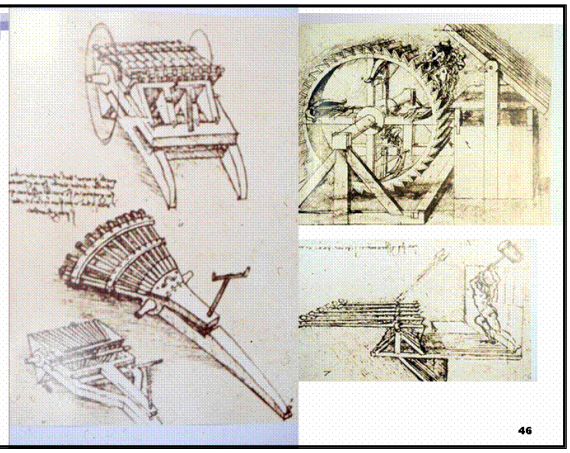

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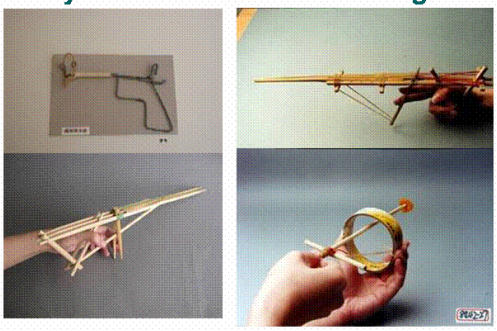
□鄉土期〈連發槍〉功能意義分析
Analysis of Rural Era's Shooting Gun



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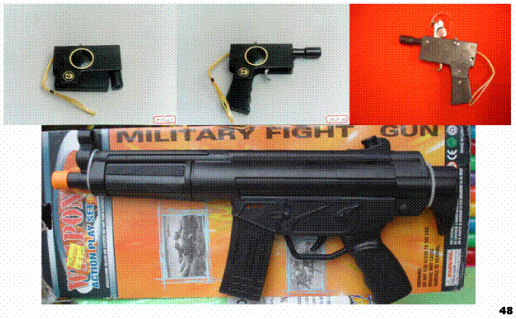
□工業期〈玩具槍〉功能意義分析
Analysis of Industrial Era's Toy Gun



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□ 電腦期槍戰遊戲功能意義分析
Analysis of Computer Era's Shooting Game

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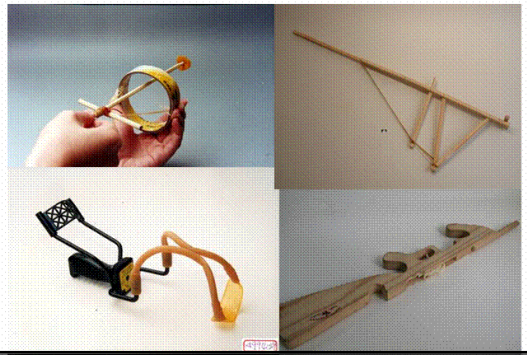
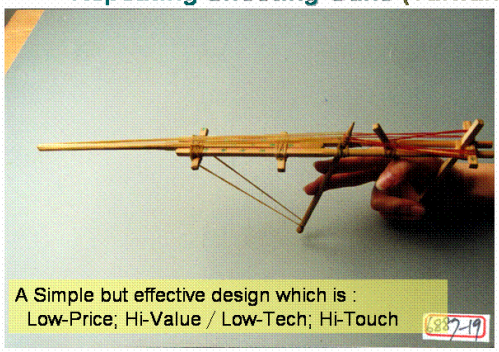
□ 射擊玩具－童年文化共同產物
Shooting Toys- Common Toys of Different Cultures



□ 連發槍－童年生活智慧結晶
Repeating Shooting– a Common Challenging Goals

□ 自製〈連發筷子槍〉
Repeating Shooting Guns (Taiwan)



A Simple but effective design which is :
Low-Price; Hi-Value / Low-Tech; Hi-Touch

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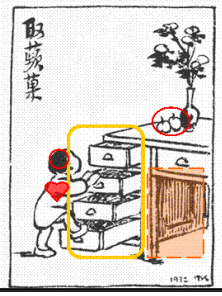
□ 創意解題 (Creative Problem-Solving)
Challenges increase Competence; Competence brings Confidence



- Noticed the outside attractions
- Driven by inner motivation
- No previous learned experience to apply
- Developed from own potentials
- Explore possible solutions
- Make decisions and try on one (or many) of the possible solutions, till an appropriate one is discovered.

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4. 結論：「游藝學」初探

Conclusion:
The Study of 'UE' – The Art of Play

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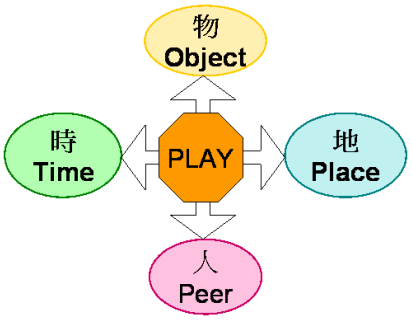
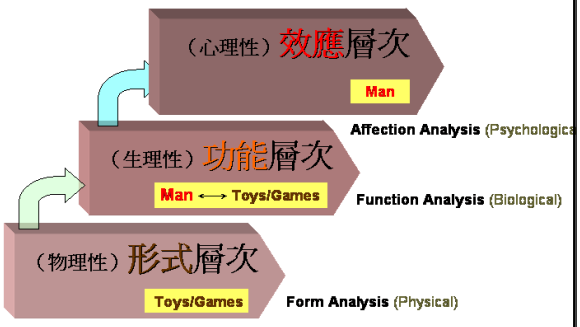
3.1 遊戲條件之變遷（量變）
Changing Conditions of the Child's Play



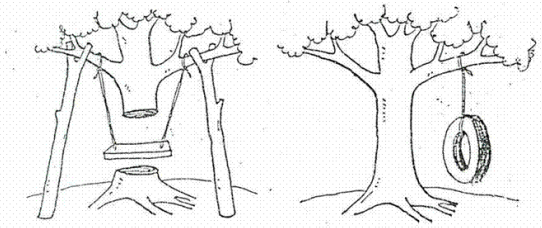
3.2 人本游藝分析與創意加值
Human-based Play Study



3.3 遊戲.玩具設計『三何』問題之思考
3 Thinking Levels for Toy & Game Design

Know-What	*Game Products,* Merchandises	*Consumer's emphasis*
Know-How	*Game Play rules,* Design Tools	Designer's
Know-Why	*Edutainment Value* Educational Gains （Human Touch）	Researcher

□ 一個計畫發展的故事（專家的迷思）
The Story of a Project



現場施工
e. As Constructed in Site

顧客的需求
f. What Users really Need

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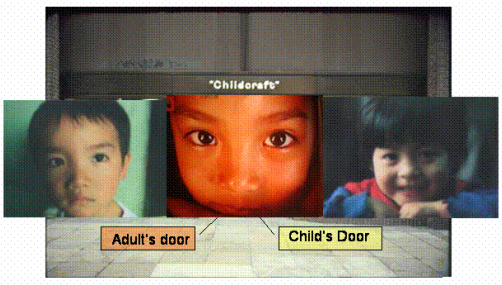
□ 童眼 / 童心 / 童理 / 童趣 /
Seeing from the Child's Eyes, and Touch Their Hearts