

Teaching and Learning Innovation Expo 2010

Understanding Capstone

examining the final year learning experience

Centre for Learning Enhancement And Research

Yvette Ng
Dephanie Hung



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- Expected graduate capabilities
- What is capstone experience
 - Why capstone experience is important
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Expected graduate capabilities

- General knowledge
- Gain a depth of knowledge within a specialty
- High level of bilingual proficiency in Chinese and English
- Basket of skills including numeracy, analytical skills and IT capabilities appropriate to the modern age,
- The ability to continue with life-long learning and professional
- Critical thinking
- Independent
- Effective in communication and working in a team



What employers are looking for?

- Planning and organising
- Technological skill
- Initiatives and Enterprise
- Life-long learning capacity
- Problem solving
- Self-management
- Communication skills
- Teamwork

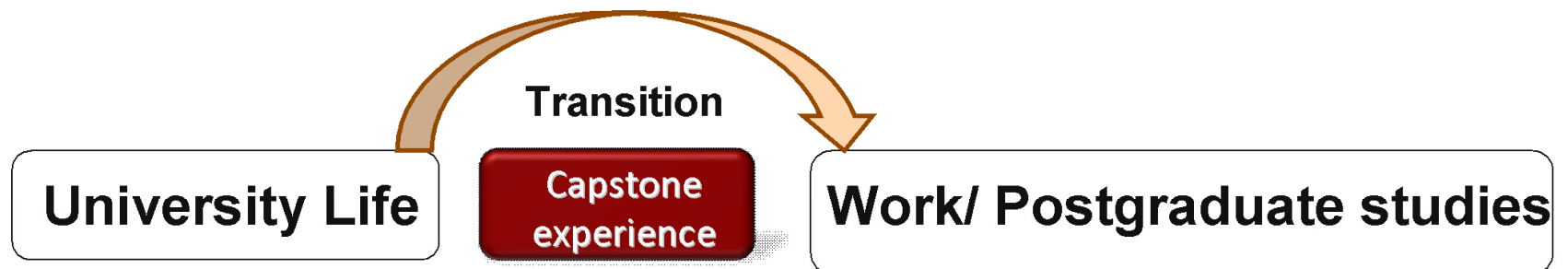
Source: UCLA Report for the WASC *Capacity and Preparatory Review* (December 2007)
Essay 5. *Shaping Undergraduate Education via the Capstone Experience*
http://www.wasc.ucla.edu/CPR_Essay5.pdf



So, why do we need a capstone?

The **outcome-based learning** approach is to design the teaching and learning for students to attain the expected outcomes.

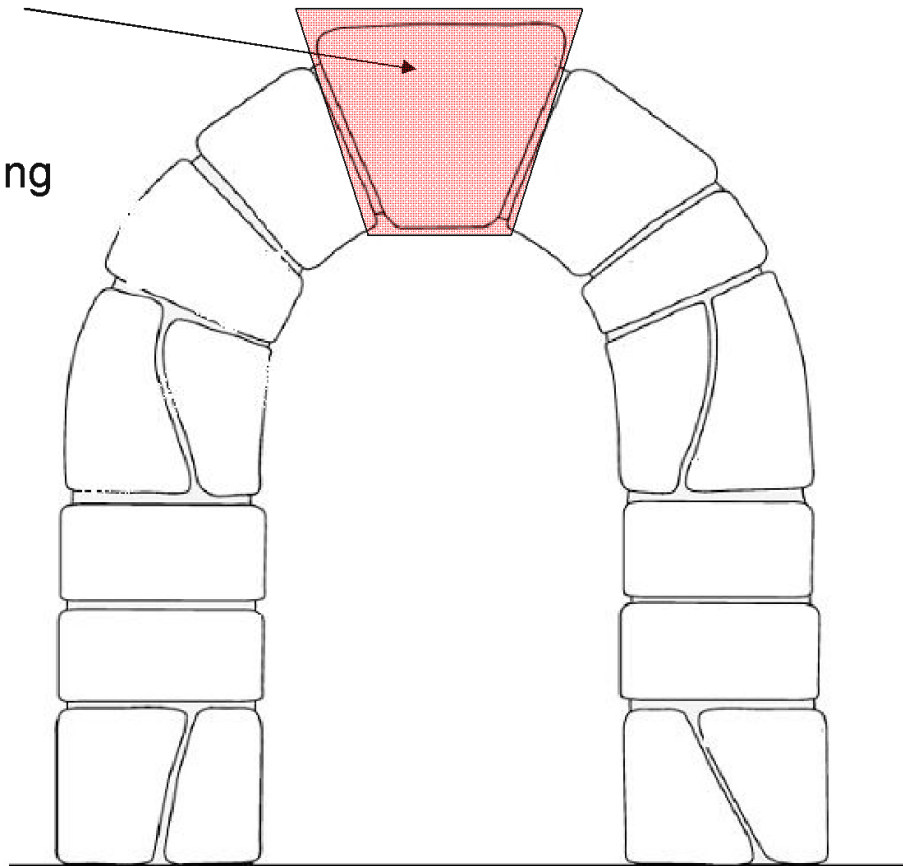
Thus, we can see that the **expected outcome for the students** from the university strategy plan and what the employers want are quite similar.



What is Capstone?

Capstone

A Capstone is the finishing stone of a structure that **holds all the fragmented parts** together.





What is a Capstone Experience?

Final Year Project \neq Capstone Experience

A capstone is:

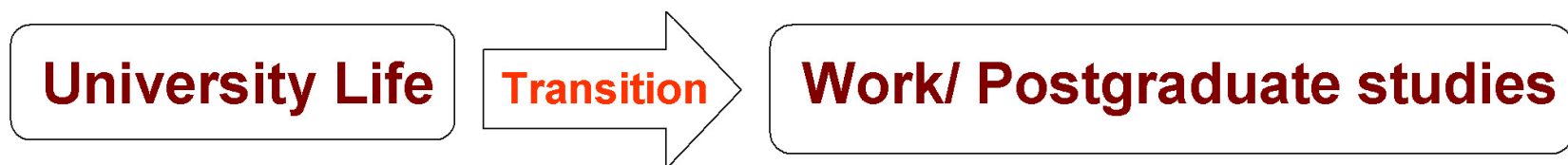
- **A series of experiences**
- **Authentic Assessment**
- **4 Design Characteristics**

What is a Capstone Experience?

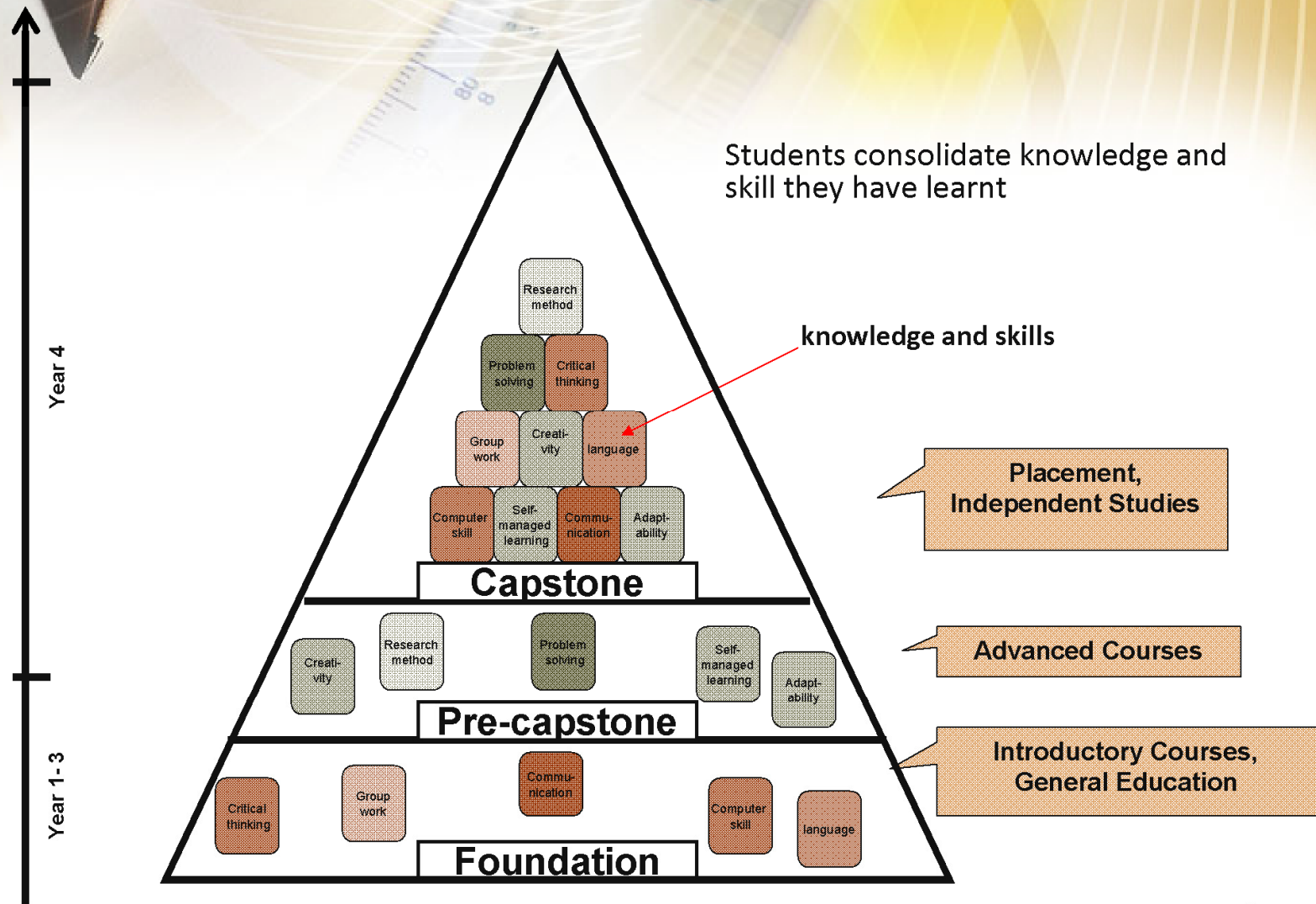
4 design characteristics

A capstone is the consolidation of the final year study experience that requires students to:

- a. **Integrate** both knowledge and skills.
- b. **Reflect** on development - academically, socially and personally.
- c. **Close** their undergraduate student life.
- d. **Transit** from undergraduate studies to work life or to postgraduate study.



Integration



Having lectures



Having presentation



Individual project



Internship overseas



Transition

These activities are all authentic assessments, which help students to apply their knowledge to the authentic task and hence have a smooth transition to the working environment.

Workplace



Graduation



Fieldwork

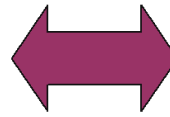


Conceptualizing the capstone experience

Undergraduate

Students consolidate knowledge they have learnt

Integration



Reflection

Students reflect on their development academically, socially and personally.

Closure

A completion on their undergraduate study. Give them confidence to their ability.

Transition

Transit from undergraduates to employee or post-graduates, equipping them with required capabilities

Work / postgraduate study





Authentic assessment to support capstone outcomes

- **Reflection**
Manage self-learning
- **Integration**
Apply knowledge to complete issues and demonstrate higher understanding (facilitate deep learning)
- **Closure**
Join professional community
- **Transition**
Application to workplace



**After knowing some basic concepts
about capstone,
let us try to put it in our courses!**

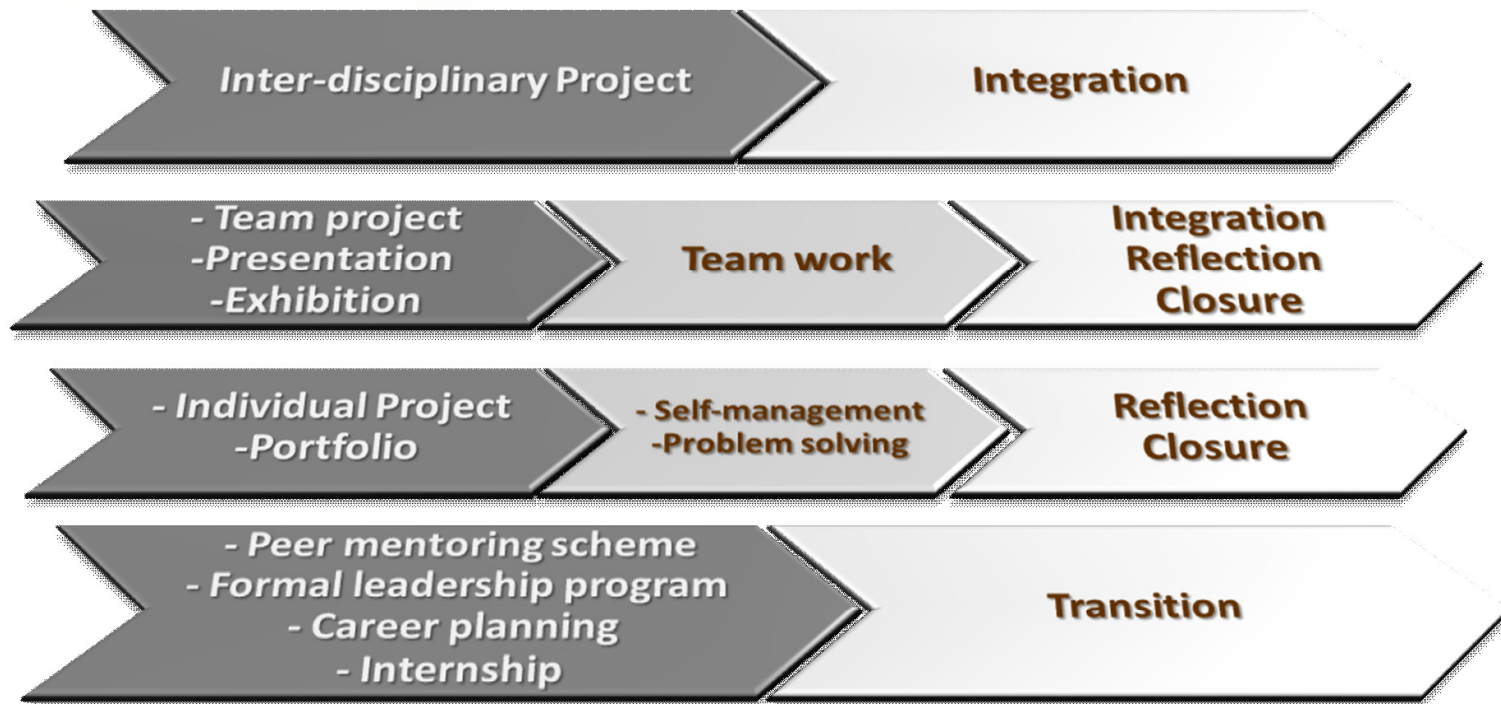


Possible capstone options to align with the expected learning outcomes

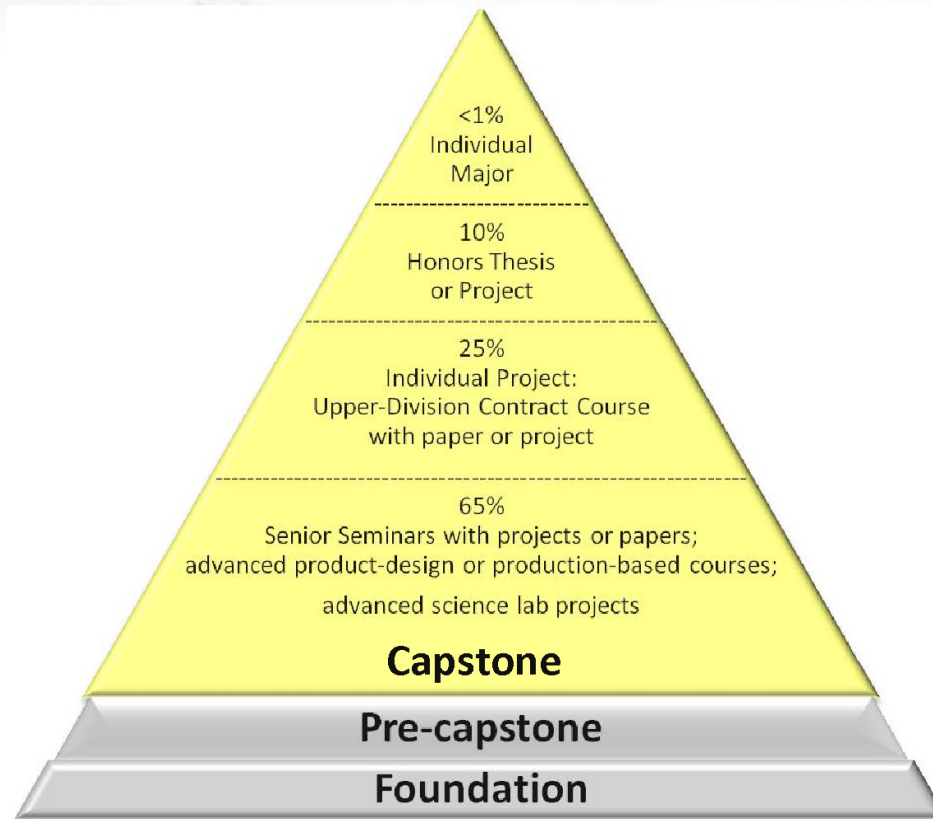
Learning activities	Outcomes
Project work, service	University community
Group presentation/case analysis/ Simulation/ Lab experiment report	Academic skills, e.g. research, collaboration
Reflection journal / Blog	Self awareness
Closely managed by faculty	Learning skills
Group project, team-based activities, Career planning	Leadership skills
Case analysis/ Group/ research project/ simulation /FYP	Problem solving skills
Thesis, research	Self directed learning
Service learning	Citizenship



Activities that can fulfill capstone characteristics



Matching students capabilities to a capstone experience- An illustration





**Reviewing and evaluating the final year learning
experience in CUHK
in terms of capstone characteristics:
Integration, reflection, transition & closure**



Data collection

- Conducted in June
- GCQ 2009 - Graduate Capabilities Questionnaire
- Target: 2009 undergraduates
- Response: 303



Questions of 4 design characteristics

Closure

- My final year learning experience was a meaningful achievement.
- My final year learning experience was a suitable completion of the undergraduate programme.

Integration

- My final year learning experience in undergraduate programme emphasised consolidation of my previous learning

Reflection

During my undergraduate final year learning experience

- I could review knowledge learnt in the programme.
- I could demonstrate my competence in the discipline.

Transition

My final year learning experience offered me:

- useful knowledge for workplace application.
- practical skills for workplace competence.
- ethical standards and positive attitude for workplace context.

Data

Types of FYP-like final year learning experience	n	%
Guided studies/ Directed studies	26	9.2%
Practicum	20	7.0%
Project (Final Year)	168	59.2%
STOT	65	22.9%
Seminar/ Selected Topics	30	10.6%
Thesis	63	22.2%
Others	10	3.5%
None of above	52	18.3%
At least one or above	232	81.7%

Data

Faculty

n

%

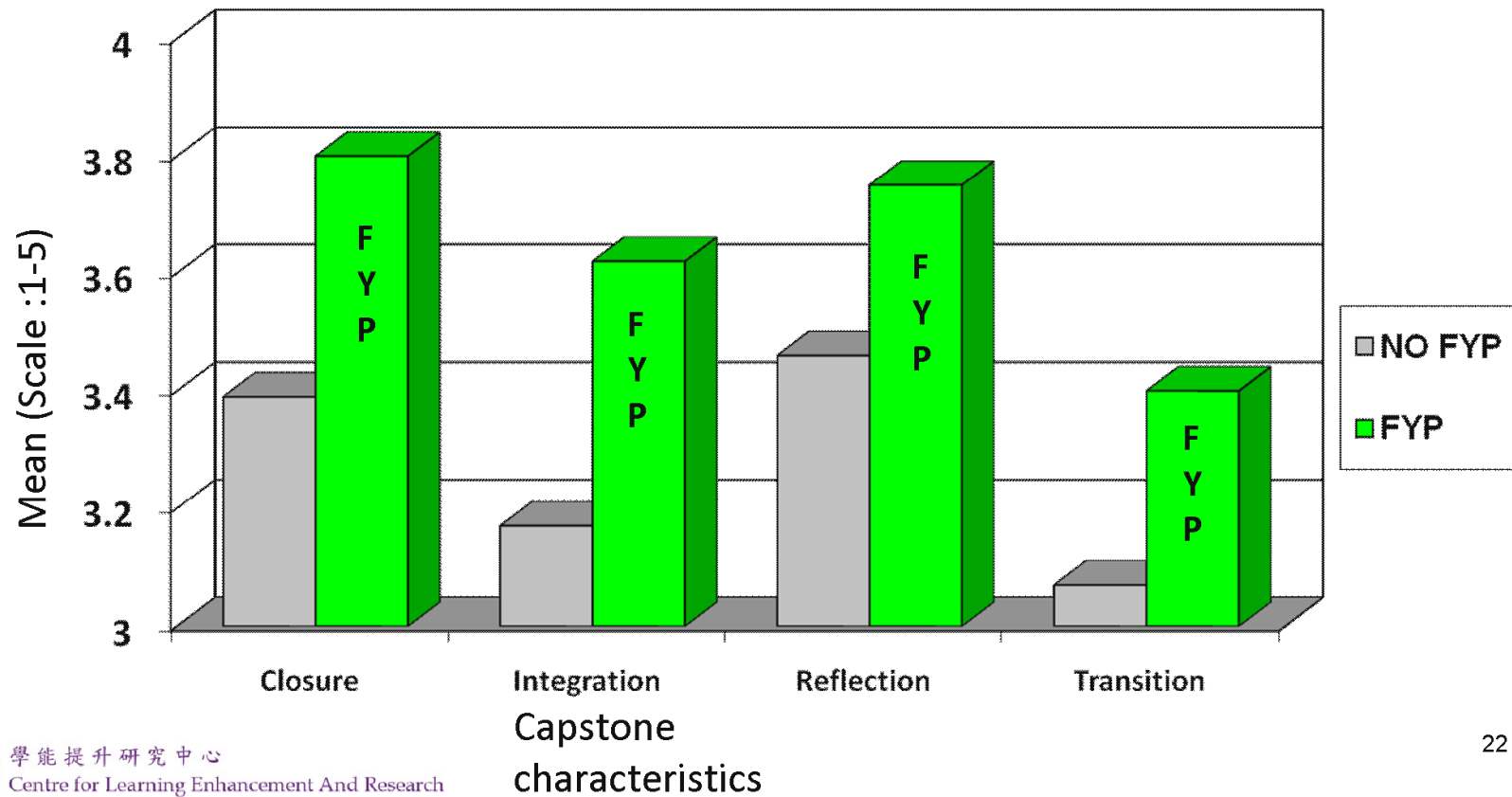
n

%

	Have FYP		None of above	
Art	41	75.9%	13	24.1%
Business	38	76.0%	12	24.0%
Engineering	45	97.8%	1	2.2%
Science	57	83.8%	11	16.2%
Social Science	55	83.3%	11	16.7%

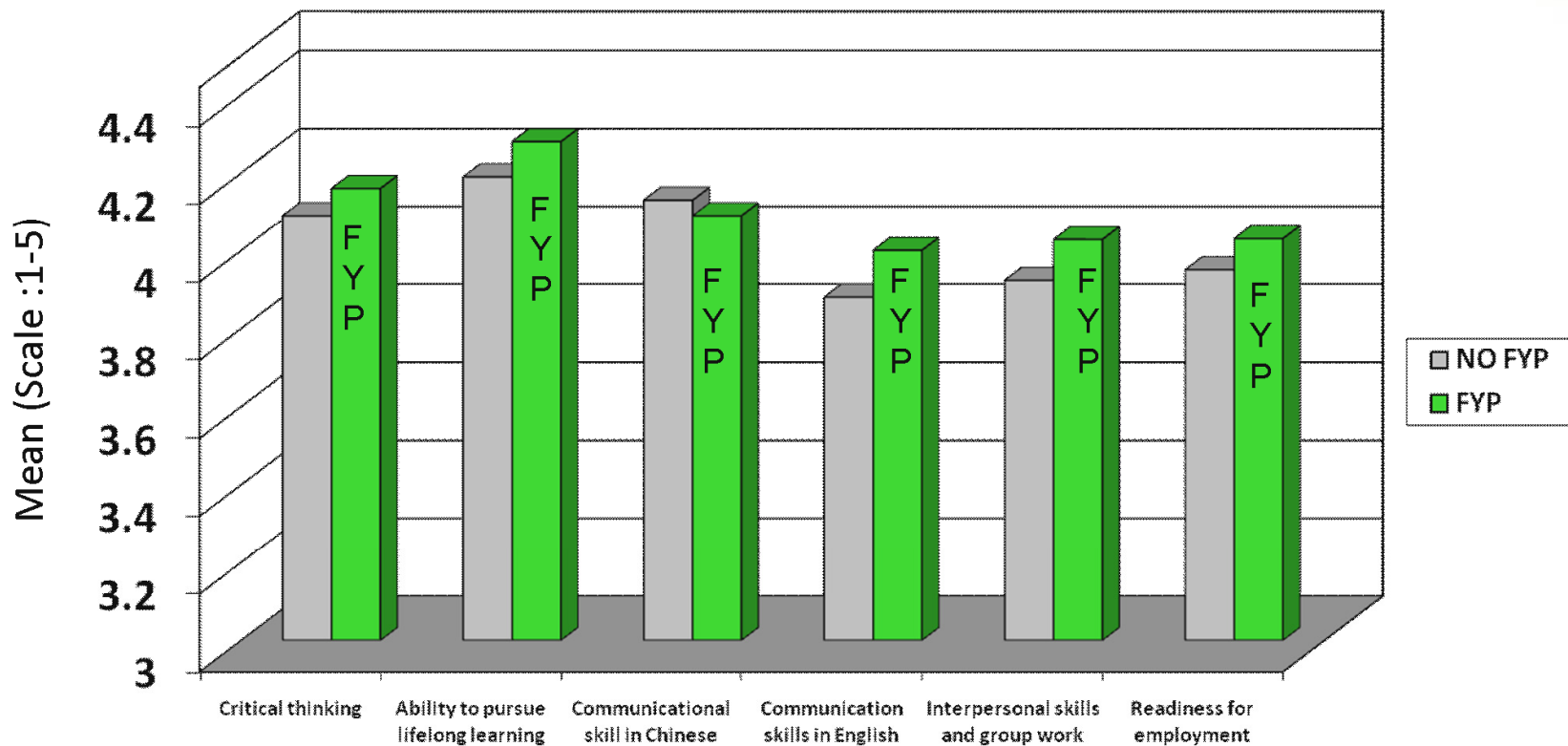
Evaluating the final year experience

1. Students who did FYP perform better among all the 4 areas.
2. Transition is the weakest area.



Evaluating the capabilities of the graduates

The mean of the students who have done FYP is slightly higher than those without FYP, but the difference is not significant.



Capabilities of graduates





Findings:

Chart 1 : Evaluating the final year experience

- a. Students who did FYP perform better among all the 4 areas
- b. Transition is the weakest area

Chart 2: Evaluating the capabilities of the graduates

- a. The mean of the students who have done FYP is slightly higher than those without FYP, but the difference is not significant.
- b. Without distinct scores, there is a weak relationship between doing FYP and being more capable.



Chart 1 : Evaluating the final year experience

- a. Students who did FYP perform better among all the 4 areas
 - FYP is valuable
 - A compulsory FYP is probably a good idea, to serve as a part of the capstone experience





Chart 1 : Evaluating the final year experience

b. Transition is the weakest area

The existing course design appears to be **too academic**

- Explain with real life examples and current issues so that students can apply theory into practice
- Provide internship programmes
- Provide professional career guide
- Facilitate presentations, debates and discussions to improve their presentation and leadership skills
- Practicum and self-learning are good for them to be self-managed
- Individual work such as portfolios and self-reflection also gain positive feedback among final year students






Chart 2 : Evaluating the capabilities of the graduates

- a. The mean of the students who have done FYP is slightly higher than those without FYP, but the **difference is not significant**.
- b. Without distinct scores, there is a **weak relationship** between doing FYP and being more capable.
 - **Authentic assessment** should be used in order to support the development of students
 - **A variety of design options** in capstone experience are suggested.





Conclusion

- 1) Students who did FYP perform better among all the 4 areas
- 2) Transition is the weakest area
- 3) A weak relationship between doing FYP and being more capable

To equip students with expected capabilities – **Capstone experience**

- FYP ≠ Capstone experience
- 4 Capstone characteristics
(Integration, Reflection, Closure, **Transition**)
- Authentic Assessment



Thank You & Questions

Project Team:

Kin-Chi Wong

Shirbe Li

Dephanie Hung

Yvette Ng

Project Supervisor:

Professor Keith Thomas

Any enquiries, please contact us at

Email: kc.wong@cuhk.edu.hk

(Kin-Chi Wong)

