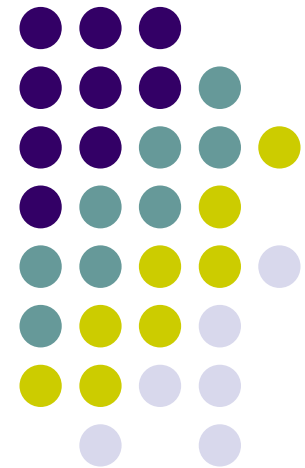
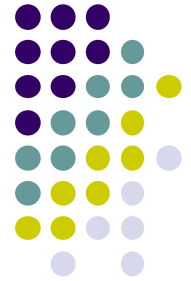


Collaborative Learning

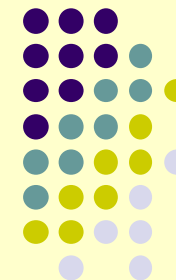


Raymond Loh
Principal Lecturer
TMC Academy, Singapore

Agenda



- Background on 21st century learning and constructivism
- Literature review - Collaborative learning approaches
- Methodology and Research findings
- Recommendation
- Learning challengers & Overcoming the challengers



Background on Learning of Today

Introduction

21st century learning implies that “students are connected to other learners and resources throughout the world preparing them to become problem solvers and communicators”.

21st century Framework by P21.org

21st century competencies, skills set that enable learners to be adaptive in a globalised world. Includes;

- Communication, Collaboration and Information skills (MOE, 2014),
- Life & Career,
- Learning & Innovative,
- Media and Information skills. *Framework for 21st learning, 2013*

Shift in the paradigm in the way we teach and assume students to be passive learners. Shift from Instructional to Learning-based paradigm (*Barr and Tagg, 1995*).

21st century Learning



Prescriptive Curriculum

Teacher-centered

Linear & rational

Part to whole organisation

Teaching as transmitting

Learning as receiving

Structured environment

Experiential Curriculum

Student/ Learner-centred

Coherent & relevant

Whole to part organisation

Teaching as **facilitating**

Learning as **constructing**

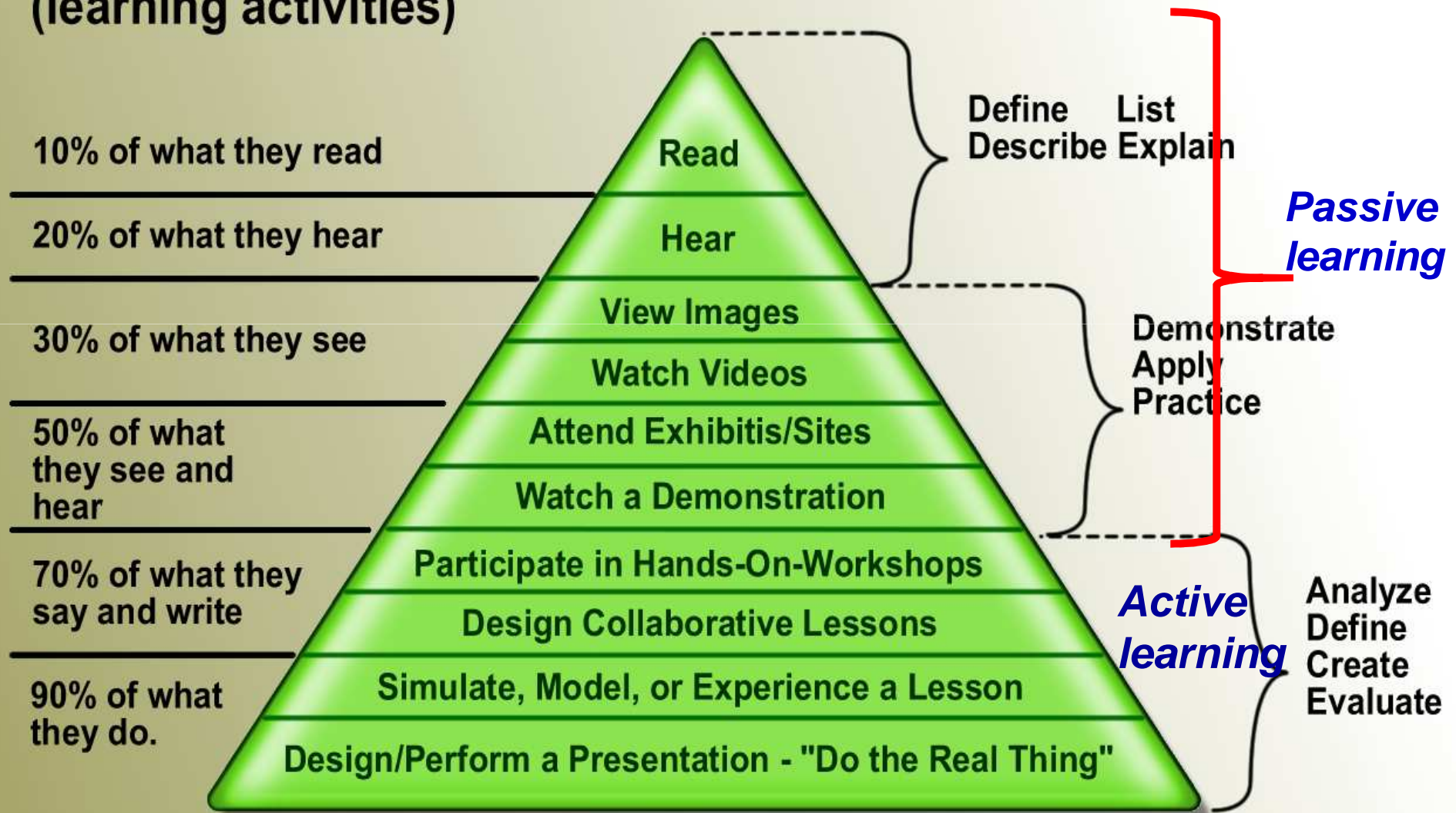
Flexible environment

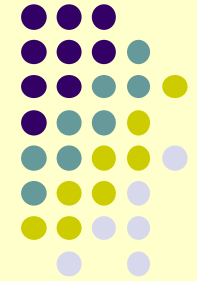
(Lea, Stephenson & Troy, 2003; McCombs & Whisler, 1997)

Edgar Dale's Cone of Experience

People generally remember...
(learning activities)

People are able to...
(learning outcomes)





What is Collaborative Learning ?

Background

Constructivism where knowledge is actively being constructed.
(Mascolo & Fischer, 2005) Two main sets of theories.

Cognitive constructivism (learners themselves) – Piaget and
Behavioral constructivism (social interaction process)

Piaget, 1964, learning an **active process** (*learners better able to understand the info they have constructed themselves*), & learners **adaptive** to the environment.

Vygotsky, 1978, learning & development is a **collaborative** activity (social advancement involves interaction with other learners).

Learner makes contact with the social environment (culture & social context) on an interpersonal level and then internalizes this learning experience.

Collaborative/ Cooperative learning

Collaborative learning - based on the view that knowledge is a social construct. Collaborative activities are most often based on four principles.

Cornell University, CTE, 2015

Collaborative learning activities mostly centered on students' exploration and application of course material, not simply the teacher's presentation or explication of it".

Smith and McGregor (1992)

Bruffee (1993) an approach to learning whereby students **work together** to achieve **group task** through **negotiation** and **consensus**. It involves mainly joint intellectual effort by students, or students and teachers together".

Assumptions about learning



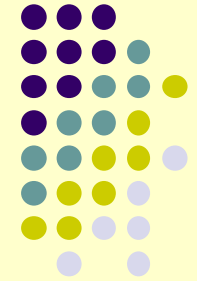
- Learning is an **active constructive** process
- Learning depends on **rich contexts**
- Learners are **diverse**
- Learning is inherently **social**

Why use cooperative learning?



- Promote students' learning, **active learners**
- Better **academic achievement** with deeper understanding of content
- **Improve satisfaction** in students' learning experience
- Promote students' **self-esteem**
- Increase **student retention**
- Help students develop **oral communication skills**
- Develop students' **social skills/ interpersonal skills**
- Develop a community of learners, improving **teamwork**

Felder & Brent, 2001, Lea et.al, 2003; McCombs & Whisler, 1997



Johnson & Johnson

5 Key elements of cooperative learning

5 Elements of cooperative learning



1. Positive interdependence
2. Individual and group accountability
3. Face-to-face interaction
4. Interpersonal and small group skills
5. Group processing

Johnson & Johnson, 2006

Johnson, Johnson and Smith 2007

Positive interdependence



- Students have two responsibilities:
 - learn the assigned material
 - ensure that **all members** of the group **learn the material**
- Each group member's efforts are required & **indispensable** for group success.
- If any team members fail to do their part, everyone suffers consequences. Each student should see his/ her **contribution** as **essential for group success**
- Structuring **interdependence**: common goal, joint rewards, divided resources, complimentary roles

Sink or swim together!

Individual and group accountability

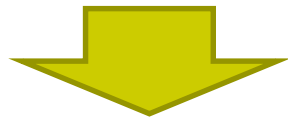
- **All students** in a group are **held accountable** for doing their share of the work and mastery of material to be learned.
- **Assess** (directly or indirectly) students through test/ orally.
- **Observing** each group and recording the frequency with which each member-contributes to the group's work.
- Keeping the size of the **group small**.
- Assigning one student in each group the role of checker.

Face-to-Face Interaction

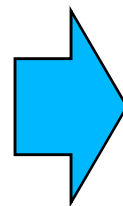
- Successful interaction occurs as a result of positive interdependence
- Group members providing one another with;
 - **feedback, challenging reasoning,**
 - **guidance & teaching** and
 - **support & encouraging** one another
- keep groups **heterogeneous,**

Interpersonal and small group accountability

- Students must get to know and **trust** one another.
- Students must **communicate** accurately & unambiguously.
- Students must **accept** and **support** each other.
- Students must **resolve conflicts** constructively.



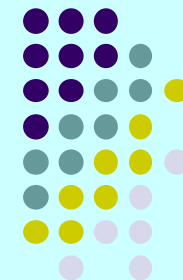
- **Trust-building**
- **Communicate openly**
- **Conflict-management skills**



Listening
Contributing
Reaching consensus
Cooperating
Following directions

Group processing

- Group members **set goals**, periodically discuss how well their goals have **been achieved**.
- Describe what member actions are **helpful** and not helpful, what behaviours to **continue** or change.
- Such processing allows groups to:
 - focus on **maintaining good working relationships**.
 - learn and **improve cooperative skills**.
 - provide **feedback** on member **participation**.
 - **celebrate success** of the group.



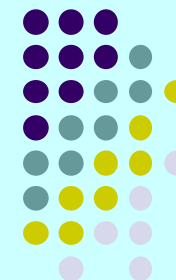
Research study

Research questions

- a) What is the students' satisfaction level with regard to cooperative learning among Asian students ?
- a) How do students feel about working in groups in an assignment with significant grade weightage ?
- b) How do students work together in conflict management and communication amongst one another ?
- c) Which is the most preferred mode of communication use among group members? Is face-to-face interaction still value?

Methodology

- a) Quantitative research or Experience Sampling method. Hypothesised the degree of students' satisfaction in the area of cooperative learning activity. Serve as a pilot study before a larger study is to be conducted.
- b) Action research where educators conduct research within their educational environment (Astin, 1993 & Toma, 2003).
- c) Questionnaires prepared - MCQs and Short answered questions. Questionnaires are structured based on Johnson & Johnson (2006) 5 key principles.
- d) Convenience sample of 42 students were selected (cohort of 3 classes, International students). 28 students responded.
- e) Results were analysed using Inferential statistics (%) and Chi-square to evaluate any significance.

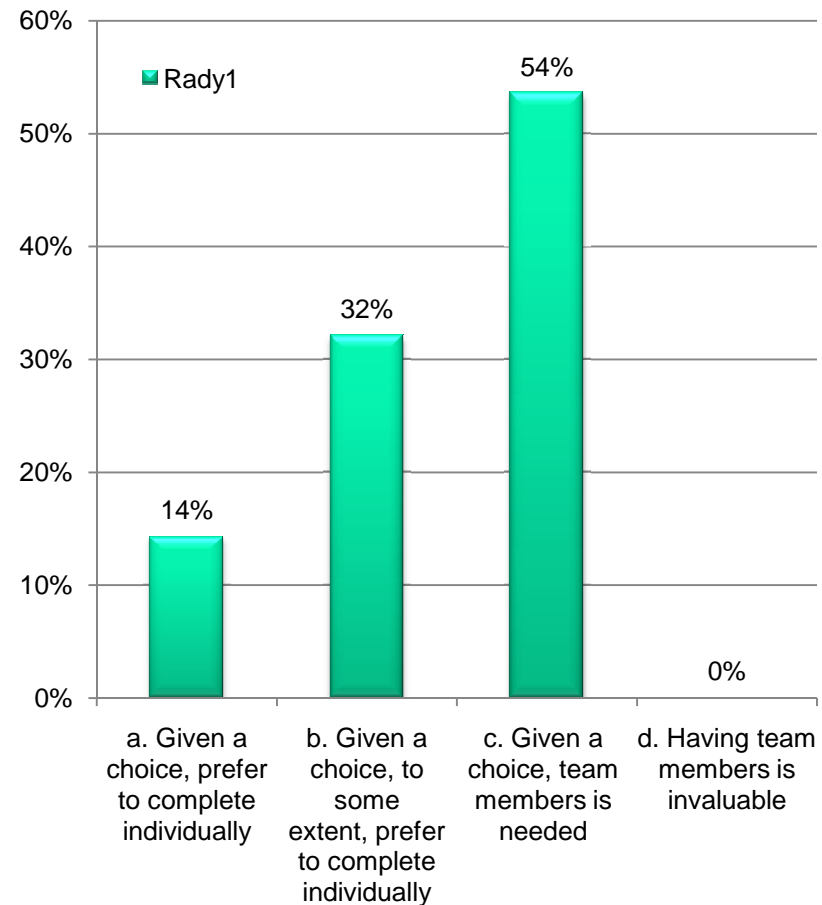


Results from study (Questionnaire)

Positive independence

Q: Each team member was needed to complete the assignment (if you have a choice and not as a requirement).

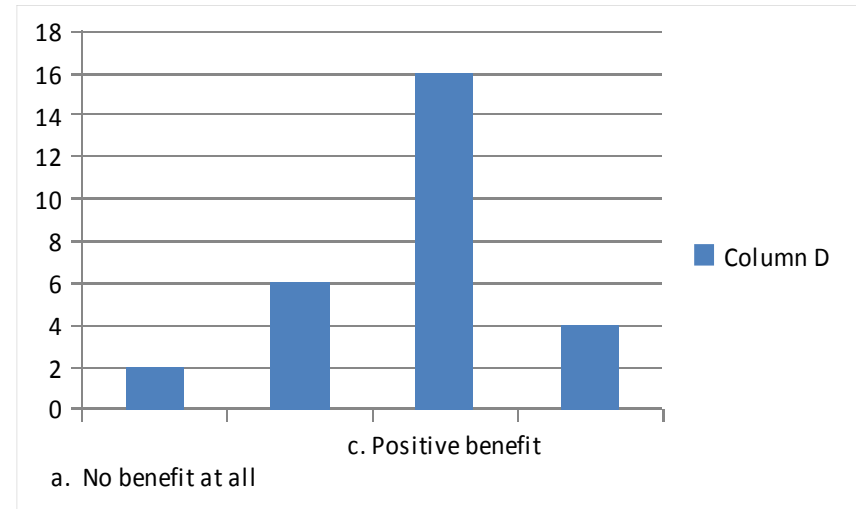
a. Given a choice, prefer to complete individually	14%
b. Given a choice, to some extent, prefer to complete individually	32%
c. Given a choice, team members is needed	54%
d. Having team members is invaluable	0%



Positive independence

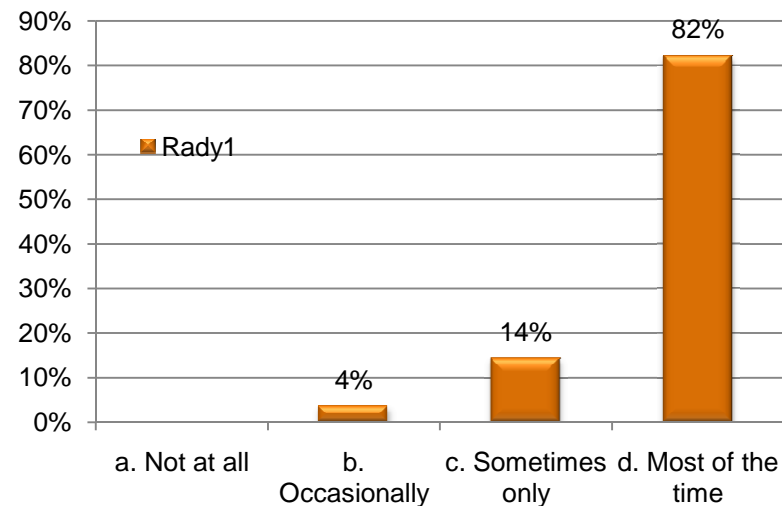
Q: Did you see the benefit of having several of your classmates participate and complete the assignment?

a. No benefit at all	7%
b. Some benefits only	21%
c. Positive benefit	57%
d. Large positive benefits	14%



Q: Did lecturer assess each team members orally (asking questions)?

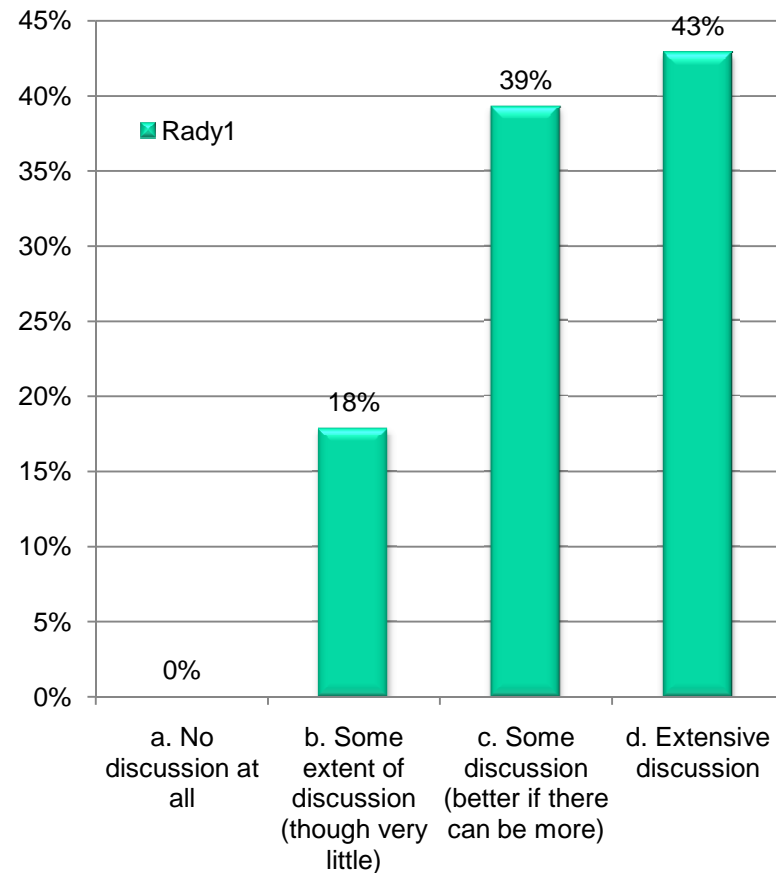
a. Not at all	0.00%
b. Occasionally only	3.57%
c. Sometimes only	14.29%
d. Most of the time	82.14%



Individual Accountability

Q: Did the group members discuss what team actions were helpful and what actions to avoid (example, insisting on your own views instead of adopting views from the large majority).

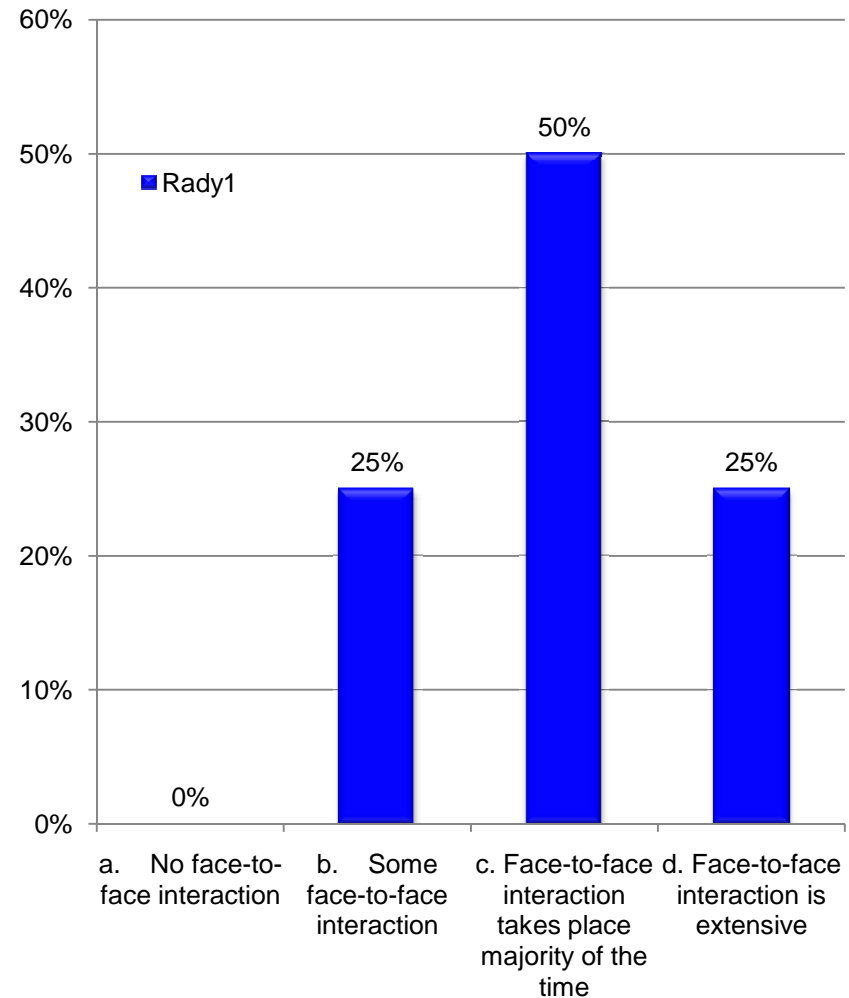
a. No discussion at all	0%
b. Some extent of discussion (though very little)	18%
c. Some discussion (better if there can be more)	39%
d. Extensive discussion	43%



Face to face interaction

Q: To what extent face-to-face interaction take place?

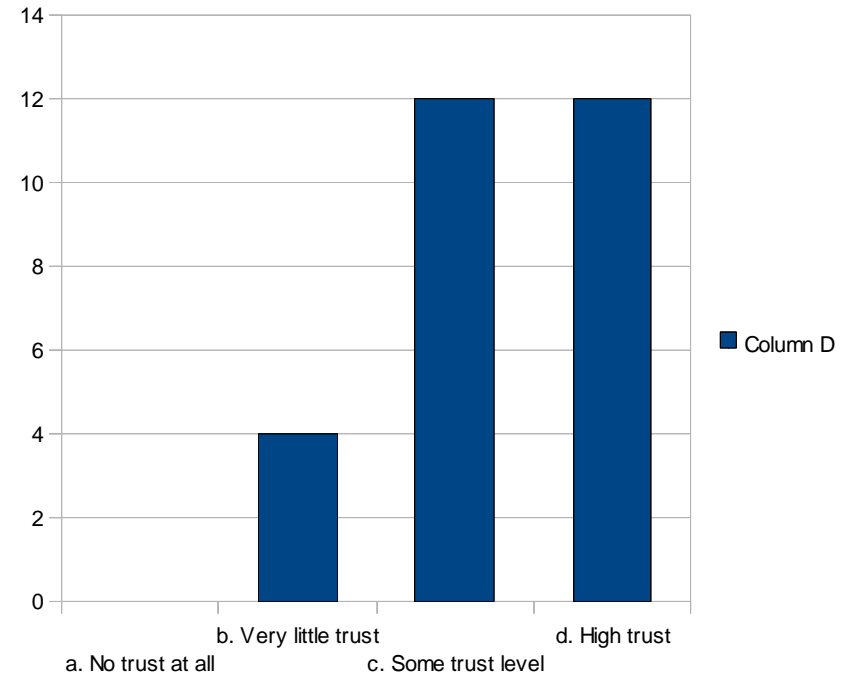
a. No face-to-face interaction	0%
b. Some face-to-face interaction	25%
c. Face-to-face interaction takes place majority of the time	50%
d. Face-to-face interaction is extensive	25%



Interpersonal and small group skills

Q: How do you describe the trust level amongst team members?

a. No trust at all		0
b. Very little trust		14%
c. Some trust level		43%
d. High trust		43%



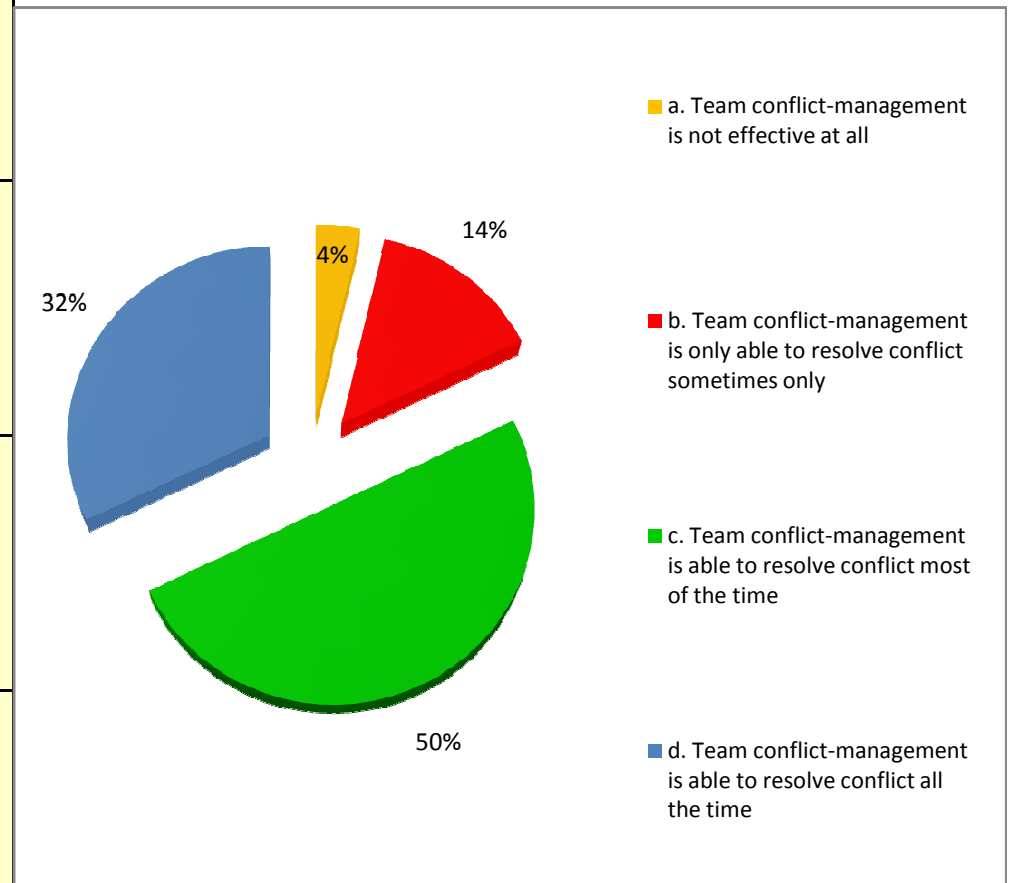
Q: Did you start with some level of trust and relationship with others on the project OR the trust and relationship was only developed along the way (gradually)?

Develop along the way as when we first meet, we do not know each other and under estimate each other however, as we work with each other, we build more relationship and able to develop our trust gradually.

Interpersonal and small group skills

Q: How well do you describe the team conflict management skills ? (if there are disagreements, whether it is resolve amicably).

a. Team conflict-management is not effective at all	4%
b. Team conflict-management is only able to resolve conflict sometimes only	14%
c. Team conflict-management is able to resolve conflict most of the time	50%
d. Team conflict-management is able to resolve conflict all the time	32%

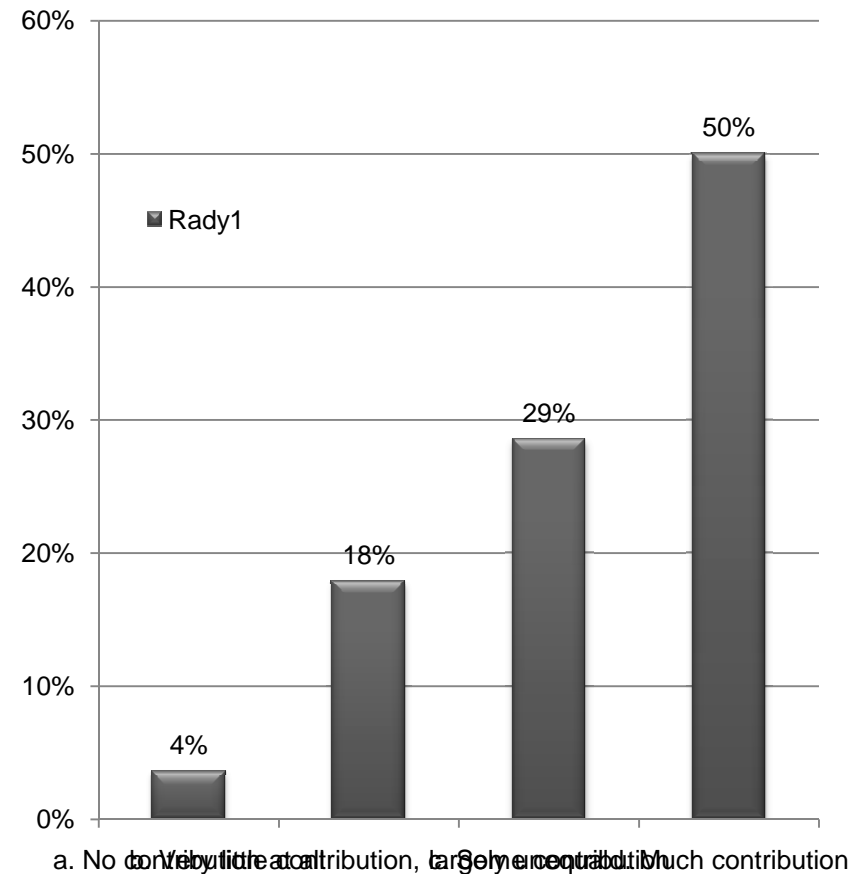


Group processing



Q: Did fellow team mates in your group contributed their fair share of effort?

a. No contribution at all	4%
b. Very little contribution, largely unequal	18%
c. Some contribution	29%
d. Much contribution	50%



Group processing



Q: In your group discussion, recall briefly what worked well and what do not go well? Identify one each.

Usually we had conversation problem due to all group members are from other countries. Somehow we worked very hard when we had group discussion and also our group leader always helped each member.

Due to different background, ability to understand the question differs which sometimes failed to engage extensive debate on the issue.

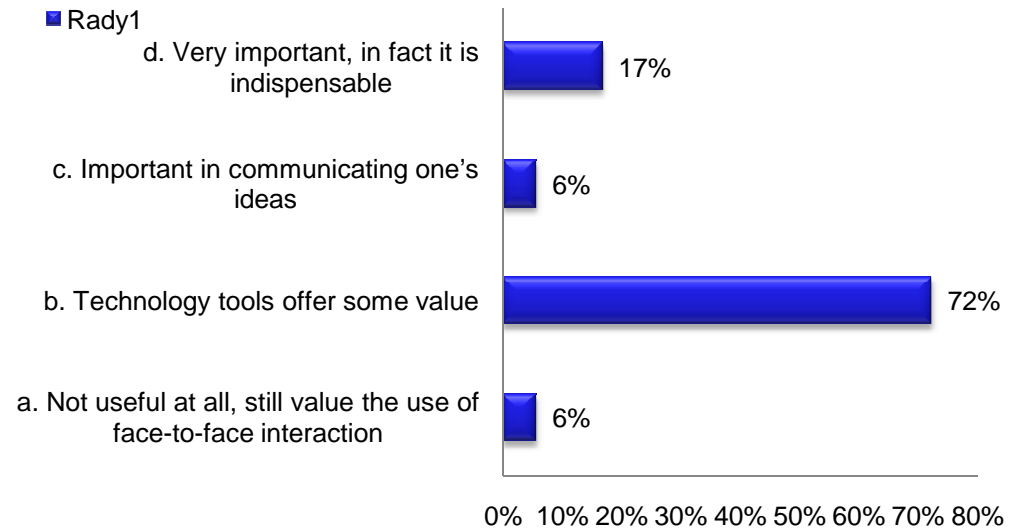
We became like one family, and listen to each other's ideas. However there are some miscommunicate and because of different ideas we may disagree with each other. Nevertheless, we are able to figure them out with good reasons.

Worked well: Make each member of the group to be understand their own task Don't go well: dividing the task for each member

Communication amongst group members

Q: Use of the communication tools (Whatsapp, Facebook) is much more valuable than face-to-face interaction. Do what extent you agree?

a. Not useful at all, still value the use of face-to-face interaction	4%
b. Technology tools offer some value	64%
c. Important in communicating one's ideas	11%
d. Very important, in fact it is indispensable	21%



Q: Use of the communication tools (Whatsapp, Facebook) is much more valuable than face-to-face interaction. Do what extent you agree?

It is better to get attention from everyone, and is possible to have further discussion. I think there is some limitation to discuss through Whatsapp or SMS as have to wait for reply, typing is slower than talking in person.

Communication amongst group members

Q: Use of the communication tools (Whatsapp, Facebook) is much more valuable than face-to-face interaction. Do what extent you agree?

Allows for instant affirmation on things. When there is a sudden problem face by group member (shy to talk to our own opinions when meet face-to-face interaction), with communication tool, we can easily type our opinions and advices.

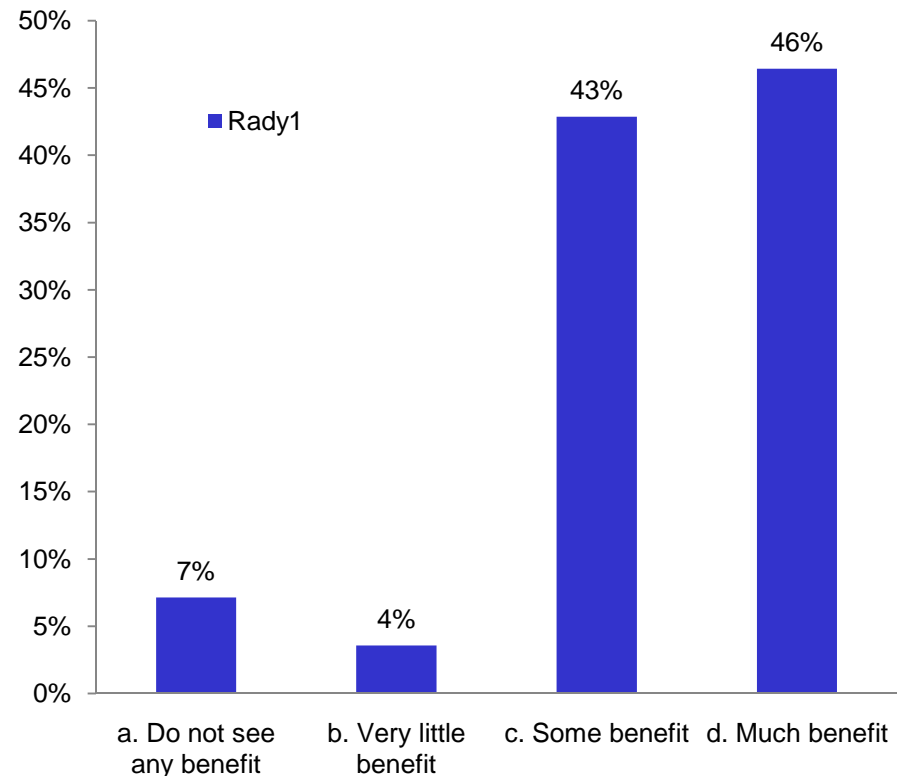
Also, in heated discussion, it is quite hard to talk to your opinion, but when we use communication tool, we will not face this problem. we can just directly type our own opinions in Whatsapp group.

Gives opportunity to exchange of data fast and no need to repeat to everyone. In group (like WattsApp) everyone could see what is written there so very easy to communicate. With email it is useful due to possibility of exchanging of files and everyone has access to it.

Overall – to sum it up

Q: Do you recognize having group project would benefit you in preparing for workplace working relationship?

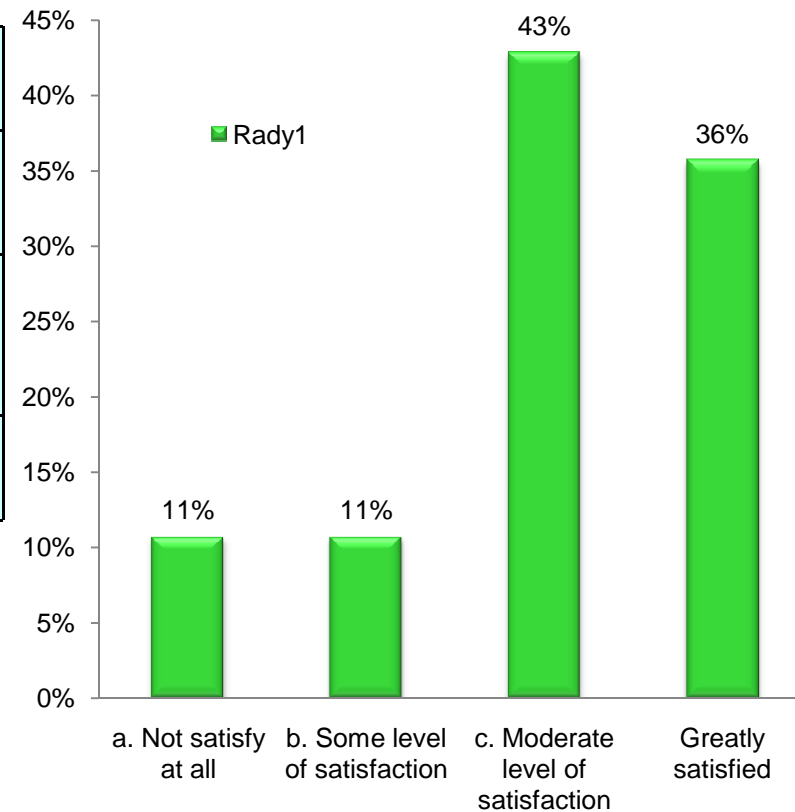
a. Do not see any benefit	7%
b. Very little benefit	4%
c. Some benefit	43%
d. Much benefit	46%



Overall – to sum it up

Q: How do you rate your overall satisfaction level concerning collaborative (team-based) learning?


a. Not satisfy at all	11%
b. Some level of satisfaction	11%
c. Moderate level of satisfaction	43%
Greatly satisfied	36%



Results - Conclusion

- ✓ **Positive Interdependence**, **71%** recognise benefits of having team members. Closely related to workforce preparation, **89%**
- ✓ **Individual accountability**, lecturer “visit” each team, to observe, offer feedback and assess orally, **96%**.
- ✓ Team members discussed areas to improve quite actively, **82%**
- ✓ **Group processing**, **78%** contributed a fair share of effort.
- ✓ **Face-to-face interaction**, **75%** takes place majority of time, **86%** members did check with one another for understanding.
- ✓ **Interpersonal & small group skills**, trust level **86%** (moderate to high level & **82%** cited conflict management were good.
- ✓ **Overall satisfaction**, **78%**, **11%** (3 out of 28) not satisfy at all.
- ✓ Chi-square results indicated respondents were in favoured of cooperative learning activity

Recommendation/ Implications for Practitioners

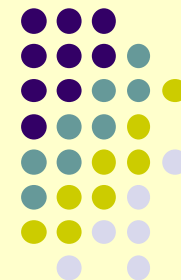
- ❖ Results do support that conducting cooperative learning is feasible and students have a positive view.
- ❖ Cooperative learning activity can be used to enhance learning experience which can be used along with “flip classroom” concept.
- ❖ Results do dispel the presumption or stereotype view that Asian students are passive learners, shy to participate, individualistic and preferred instructional based teaching. 21st century learning is here to stay. (*Gillies Renshaw, Pham, 2008*)
- ❖ Need to recognise learning challenges and precautionary steps can be taken. 



Learning Challengers

Not all group learning is collaborative learning

- Groups arguing/ insist on their own opinion, conflicts and power struggles.
- A member not participative, too shy or quiet
- One member does the work, while the other members doing minimal work. Unequal contribution ('free rider')
- A more talented member may come up with all the answers, dictate to the group, or work separately, ignoring other group members.
- A member of the group lagging behind.



Overcoming Learning Challengers

Overcoming learning challenges

Introvert learners, Shy learners	<ul style="list-style-type: none">- use of think-pair share,-heterogeneous group. Good mix of students from different culture.
Dominant learners/	<ul style="list-style-type: none">-Assignment of roles (leader, recorder, checker) to minimise one person dominates
Fair & equal hare of contribution	<ul style="list-style-type: none">-Assignment of roles,- Instructor visits each team to observe, assess & provide feedback- Members/ individual assessment- Peer review
Fast learners	<ul style="list-style-type: none">- Serve as mentor, encourage peer learning (boost morale, develop closer bonds, overcome boredom)

Felder & Brent, 2007; Shimazoe and Aldrich, 2010

Overcoming learning challenges



Group formation, goals & rewards	<ul style="list-style-type: none">- Instructor has final say in group formation to avoid situation of pick and choose group members.- Instructor provide clear instruction of task & explaining the fulfillment of group goals.- Rewards in the form of group marks or points
Group conflict	<ul style="list-style-type: none">- Set house rules so everyone understands. Uncooperative members would be “kick out”of group.- keep group size to 4 members (closer monitoring)- Early intervention if conflicts occur, speak to group members privately.
Overcoming anxiety of performance	<ul style="list-style-type: none">- Provide feedback soonest possible, after each session ended.- Provide channel for feedback, encourage learning- Use of “world cafe” style to share and learn

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Questions and Answers

Thank You