



Linking innovation, quality and training

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Maintenance



Outline of Sharing

- Quality training overview
- A proven Innovative Pedagogy
- An AE Co-Developer's Learning Experience

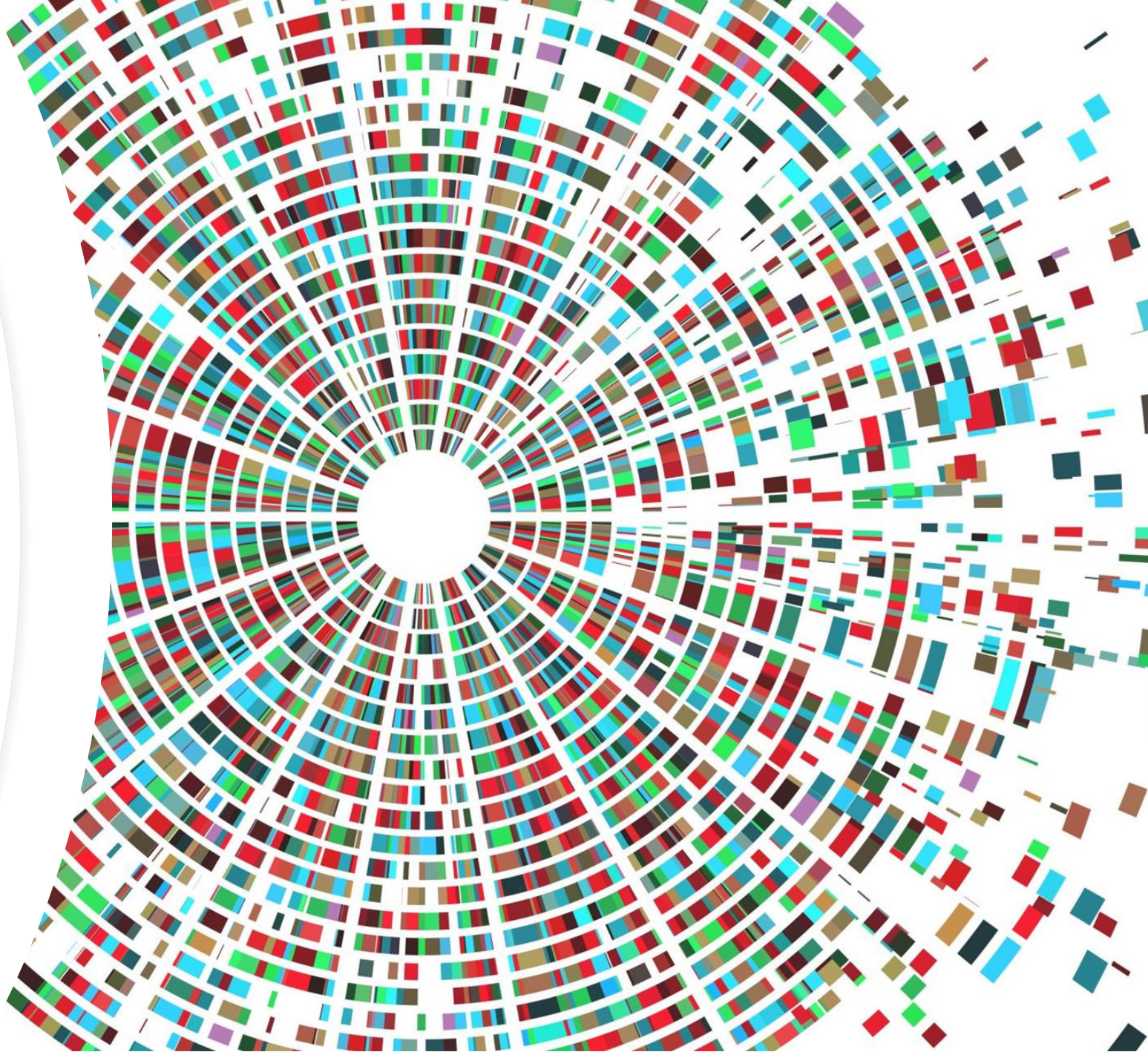


What defines Quality in Training?

Food for thought:

Quality Training

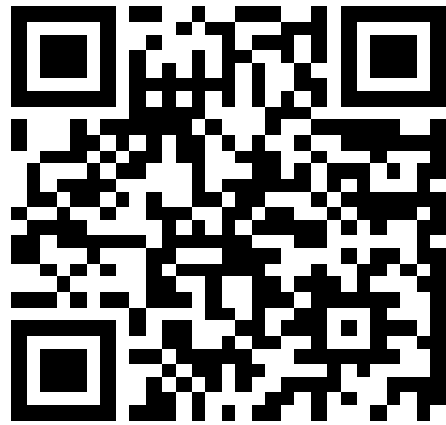
Learning Outcomes?

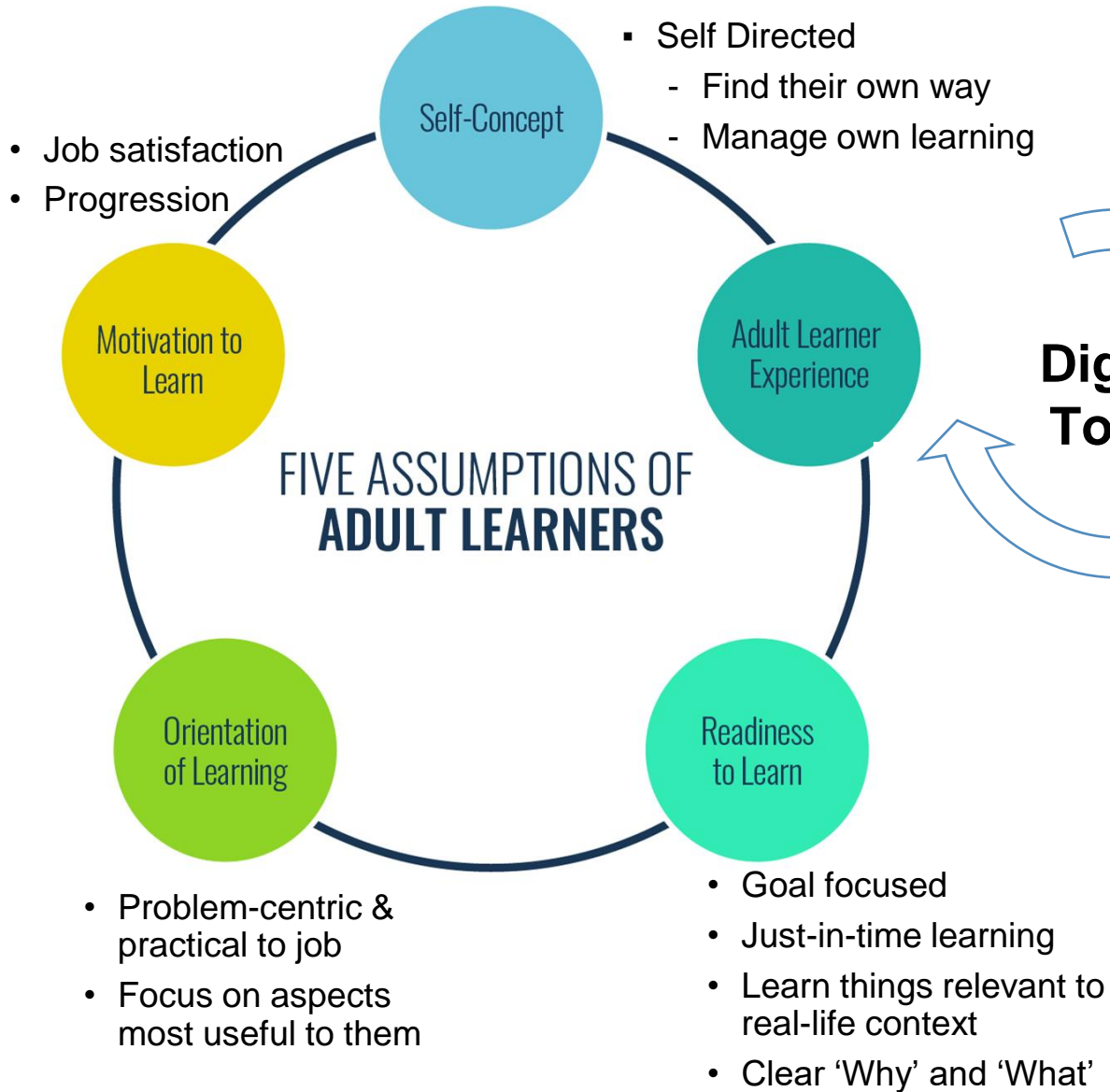


Share your thoughts

What does Quality Training mean to you?

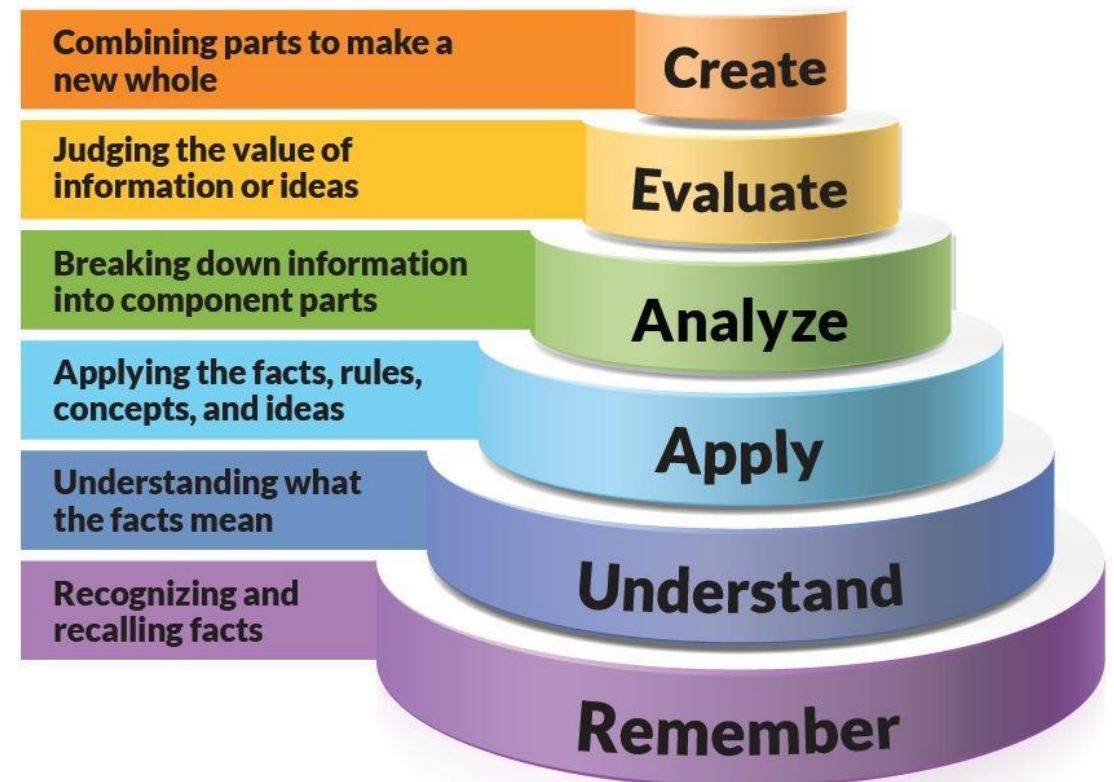
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Digital Tools

Learning Outcomes



People, Process, Technology (PPT) Framework



PEOPLE



Working in collaboration with our learners/staff to deliver changes

- Identifying and addressing skill gaps
- Building a culture of continuous learning
- Recognising and rewarding those who actively pursue professional development
- Establish clear lines of communication and encourage open dialogue
- Provide regular feedback and coaching

PROCESS



Experience and expertise to support the delivery of effective learning intervention

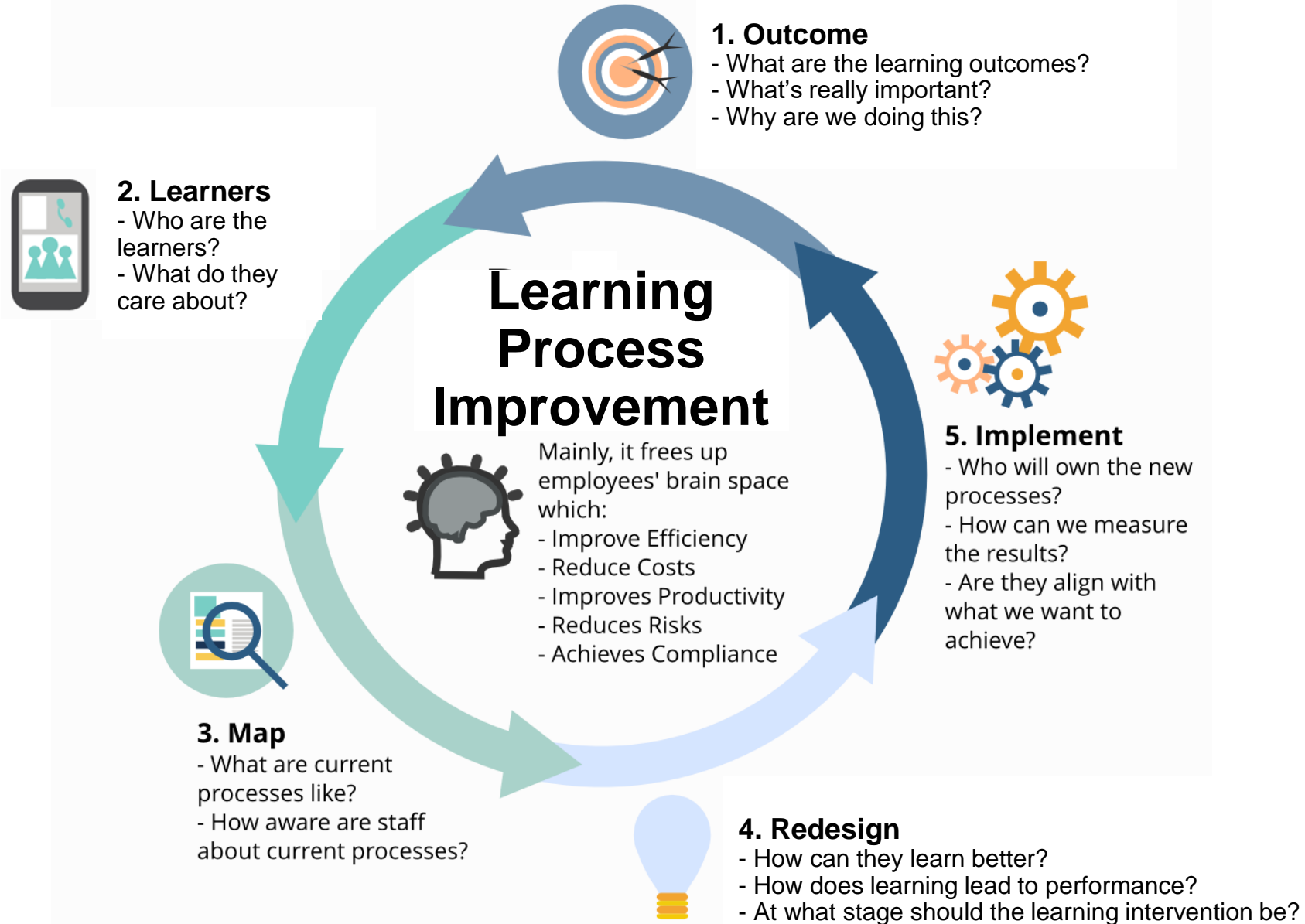
- Streamline learning processes
- Create a clear learning roadmap
- Use metrics and analytics to measure the effectiveness of learning intervention
- Evaluate the impact of training on individual, team, and organisation performance

TECHNOLOGY



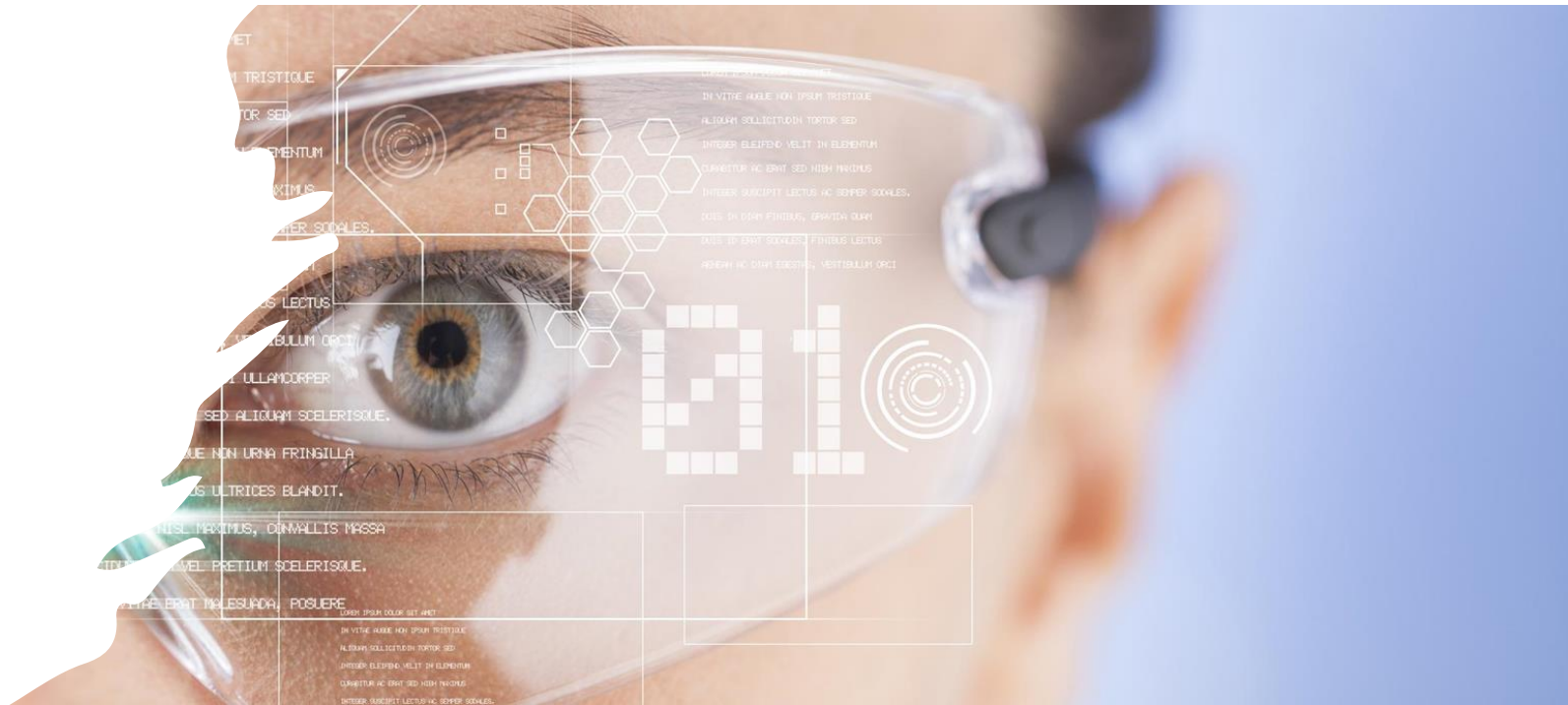
Working together to bridge the gap between learners/staff and technology

- Learning platforms that provide a seamless learning experience
- Explore emerging technologies such as AI, immersive reality, gamification
- Leverage these technologies to create engaging and personalised learning experiences
- Ensure access to relevant and up-to-date content that is easy to consume and understand





Use Case



A Training Provider of WSH Courses

A Double-Edged Learning Challenge

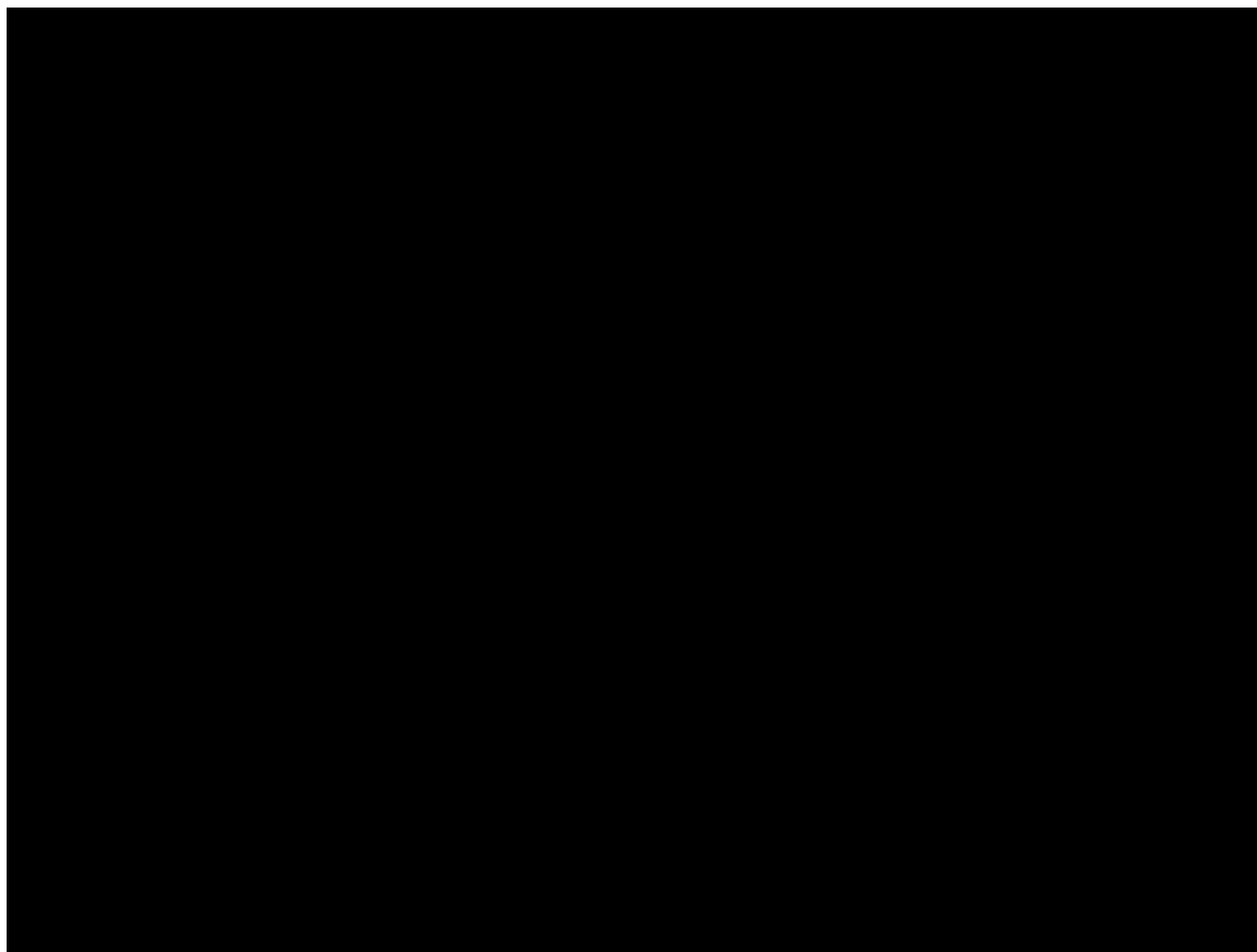
Migrant workers lack prior knowledge or experience in high-risk industries and receive job information and training only on arrival in Singapore.



Trainers face the challenge of training large batches of workers with repetitive curricula. On-the-job training inadequate, as workers lack confidence and resort to unsafe practices due to fear or time pressure.

Solution

1. To engage migrant workers in a controlled setting to learn "safe working" in hazardous environments, and to enable trainers massively scale their training efficiency”
2. To create a training and assessment system that will aid incoming migrant / technical skilled workers and WSH trainers.
3. To get migrant workers to know their rights and take ownership of their part in their own safety in hazardous work situations “Learn to speak up for your safety!”





Outline of Sharing

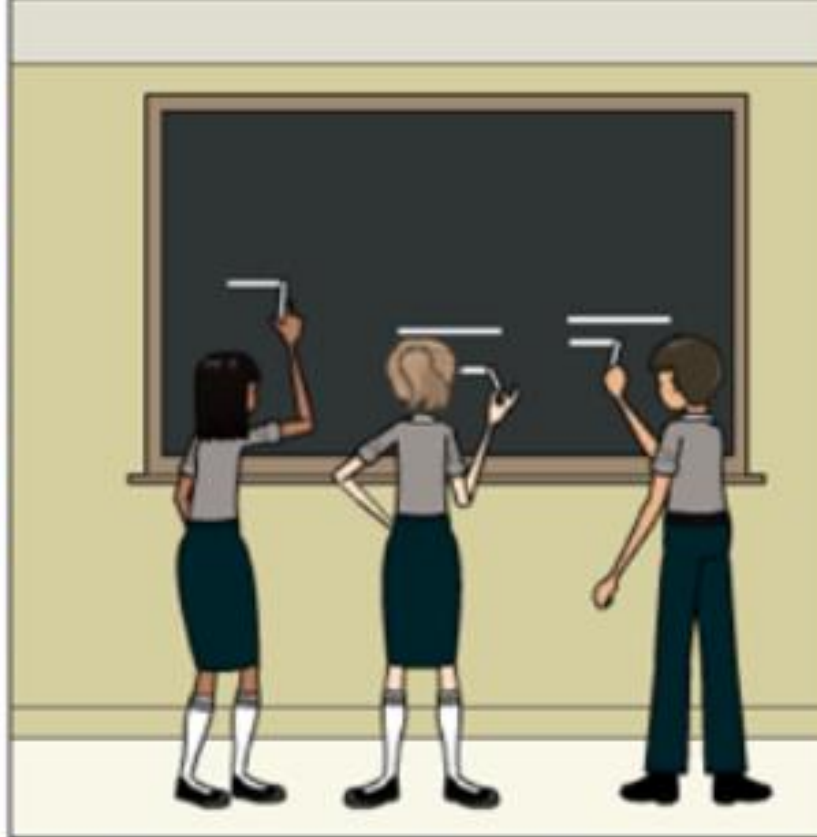
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Problem solving



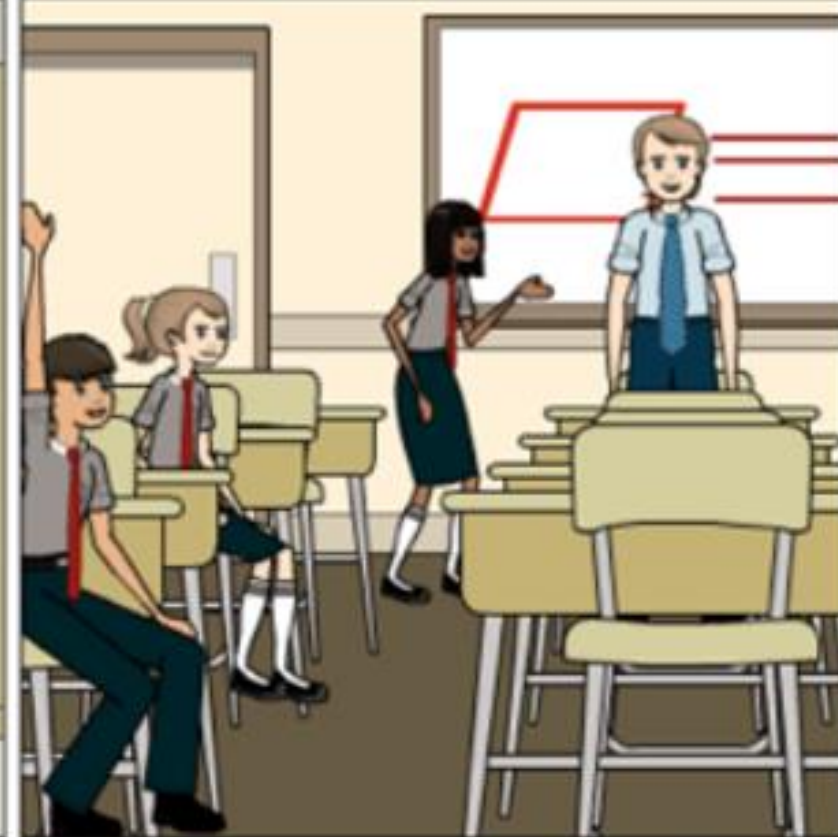
While students receive minimal scaffolding from the teachers during the problem solving

Sharing



After 80 minutes of problem solving with their group mates, students' solutions will be

Explaining



Via the sharing, the teacher then builds on the students' solutions and compare and

Mind the hand holding, stretch your learners, lead learning consolidation

Reference: <https://singteach.nie.edu.sg/2021/04/26/productive-failure/>

then assists the students in reviewing the problems again and arriving at the answer.

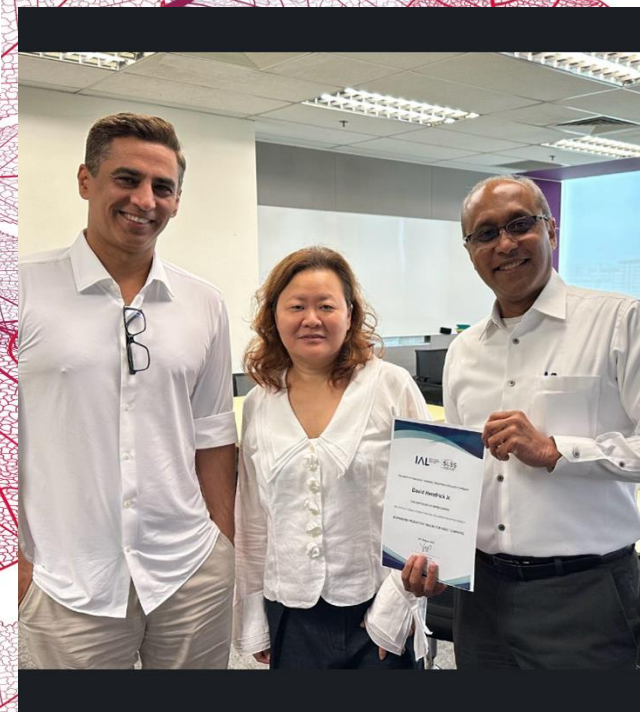
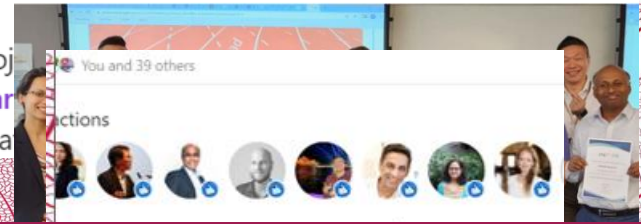


Manu Kapur (He/Him) • 1st
 Professor at ETH Zürich, Director Future Learning Initiative
 1d • 🌐

Productive Failure is now a model for Adult Learning as well! Working with the **Institute for Adult Learning Singapore** and several brave adult educators across several sectors, we showed how Productive Failure can be used to design powerful learning in adult and lifelong learning settings. Thanks to the IAL team **Soo Kheng Sim Nilanjana Saxena Michael Choy** and Bi Xiaofang and all the Adult Educators for making this a success beyond what we could imagine at the outset!

Vasanth Sankaran (He/Him) • 1st
 Learning & Development Professional | **Er Nilanjana Saxena , Soo Kheng Sim, Michael Choy, and Xiaofang Bi**
 6d • 🌐

Happy to share with you an interesting project I worked on over the last 12 months with the **Institute for Adult Learning Singapore** of Prof **Manu Kapur**, a team of Adult Educators and their support in this journey. It was a pleasure learning along with a cohort of senior adult educators across diverse industries, expertly assembled by **Er Nilanjana Saxena , Soo Kheng Sim, Michael Choy, and Xiaofang Bi**



Peter Tan (CDPSE, CISA, CISM, CISSP, CPP, PCI, PSP, PMP) • 1st
 Advisory Boards | CSO | Security Practitioner | Curriculum Designer | Educator
 1mo • 🌐

Thank you **Institute for Adult Learning Singapore**, Professor **Manu Kapur**, Professor **Soo Kheng Sim**, Dr **Michael Choy**, **Nilanjana Saxena**, Xiaofang and my fellow enthusiastic educators for the culmination of our efforts to complete the "Leveraging Productive Failure for Adult Learning" project. It has been a long but fulfilling work. Looking forward to the study trip :) Cheers!



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PF in Adult & Lifelong learning

- Think we can proudly say- we're the first in the world!
- Was it difficult, yes of course!
- Kudos to an amazing team, and our brave and supportive AE's on-board with us for this
- Application areas- WSH <first aid, OJT>, Coaching, Curriculum design, blended learning

The PF Developmental Framework

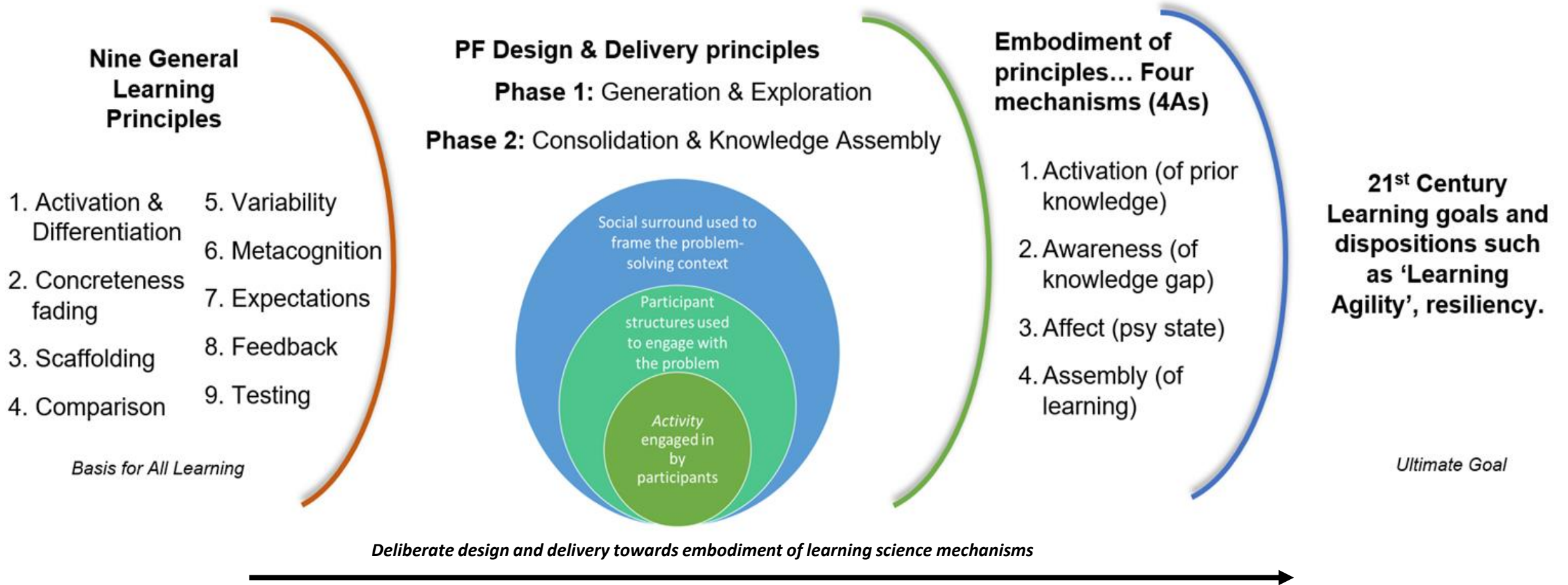


Illustration of the relationship among the nine general learning principles, the PF model, the four mechanisms (4As) culminating in 21st Century learning goals and dispositions

Learners' Experience of PF DP for Activity

~7-8 classes/ pilot

Sample of ~80 learners/ pilot

Results reveal experience of trying something new...

Questions	Never	Sometimes	About half the time	Most of the time	Always	Mean	SD
1. I was encouraged to challenge myself to solve the problem	0.00%	8.86%	13.92%	51.90%	25.32%	3.94	0.87
	1.35%	10.81%	12.16%	51.35%	24.32%	3.86	0.95
2. I was involved in the design of the solution to a problem	1.27%	13.92%	17.72%	40.51%	26.58%	3.77	1.04
	6.76%	22.97%	12.16%	33.7%	24.32%	3.44	1.28
3. I was encouraged to explore different solutions	2.53%	13.92%	15.19%	39.24%	29.11%	3.78	1.09
	2.7%	14.86%	20.27%	37.84%	24.32%	3.67	1.08
4. I learned from my mistakes in developing different solutions	0.00%	7.59%	17.72%	51.90%	22.78%	3.90	0.84
	2.7%	8.86%	12.16%	51.35%	24.32%	3.84	0.99
5. I was encouraged to compare different solutions to develop a better understanding	1.27%	8.86%	13.92%	44.59%	31.16%	3.92	0.97
	1.35%	10.81%	12.16%	44.59%	31.16%	3.85	1.02
6. I find it challenging to solve the problem given but feel supported to continue to do so	1.27%	13.92%	17.72%	40.51%	26.58%	3.77	1.04
	0.00%	10.81%	10.81%	51.35%	27.03%	3.92	0.92
7. I was encouraged to identify the important features of the learning content	2.53%	10.13%	11.39%	48.10%	27.85%	3.89	1.01
	1.35%	8.11%	10.81%	44.59%	35.14%	4.05	0.95
8. I was encouraged to put the important features together into a structure to form the basis of my solution	2.53%	8.86%	13.92%	45.57%	29.11%	3.90	1.01
	0.00%	12.16%	13.51%	44.59%	29.73%	3.93	0.96

Frequency average 3.83

Learners' Experience of PF DP of Participant Structure

~7-8 classes/ pilot
Sample of ~80 learners/ pilot

Results reveal experience of trying something new...

Questions	Never	Sometimes	About half the time	Most of the time	Always	Mean	SD
1. I was encouraged to challenge my fellow learners' solutions/ideas	3.85%	17.95%	20.51%	35.90%	21.79%	3.54	1.14
2. I was encouraged to work with other learners to find solutions/ideas	4.05%	22.97%	24.32%	31.08%	17.57%	3.33	1.14
3. I find it difficult to work with my fellow learners as we have very different abilities (reverse coding)	2.56%	10.26%	10.26%	46.15%	30.77%	3.92	1.03
	1.35%	12.16%	10.81%	44.59%	31.08%	3.93	1.02
	38.46%	29.49%	11.54%	14.10%	6.41%	3.81	1.03
	5.41%				4.43%	4.13	1.06
4. I was encouraged to think out of the box	2.56%	14.10%	10.26%	50.00%	23.08%	3.77	1.04
	1.35%	17.57%	16.22%	39.19%	25.68%	3.72	1.09
5. I was encouraged to explain my ideas	1.28%	17.95%	7.69%	50.00%	23.08%	3.76	1.05
	2.70%	14.86%	10.81%	43.24%	28.38%	3.81	1.10
6. The trainer used and worked on our explanations to form a model answer	1.28%	11.54%	12.82%	50.00%	24.36%	3.85	0.97
	2.70%	4.05%	12.16%	45.95%	35.14%	4.07	0.93

Frequency average 3.80

Learners' Experience for PF DP of SOCIAL SURROUND

~7-8 classes/ pilot
Sample of ~80 learners/ pilot

Results reveal experience of trying something new...

Questions	Never	Sometimes	About half the time	Most of the time	Always	Mean	SD
1. I feel encouraged to generate and explore ideas	0.00%	7.69%	11.54%	53.85%	26.92%	4	0.84
2. I feel I am supported for my ongoing efforts to find the solutions	0.00%	7.69%	19.23%	47.44%	25.64%	3.91	0.87
3. I feel motivated to try again when my earlier solution did not work out	0.00%	8.9%	13.51%	52.70%	25.68%	3.95	0.93
4. I was encouraged to share my views on different ideas presented by other learners	0.00%	10.26%	12.82%	44.51%	32.05%	3.99	0.93
5. I was encouraged to improve my ideas	0.00%	11.54%	17.95%	38.46%	32.05%	3.91	0.98
6. I have the know-how to improve my ideas	1.28%	15.38%	19.23%	43.59%	20.51%	3.67	1.02
	0.00%	20.27%	24.32%	43.24%	12.16%	3.45	0.96

Frequency average 3.865

Benefits observed by Learners

Greater peer learning generated

That's why just now when I shared about the affirmation, I learn so much from others. The ideas is much better than just from my own because they have so much richness in their experience, so I learn a lot from everyone today.

Deeper understanding by learners

But now, because we have to do it, I think we see more meaning in it. Yeah. We understand in a sense why we need to do it, the process and all. So I guess that experience, we understand better as well the mechanism behind it at the same time why we do it.

Benefits observed by AEs

Greater ownership of learning

I think one of the key things about PF is the onus of engagement. So in this case, where the participants are free to explore the sense of ownership over the gap or challenge that they uncovered, even though we identified the challenge for them, but having them being able to freely explore, to kind of identify the challenge on their own or identify gaps on their own, and to reaffirm actually pushes or places much of the ownership on their shoulders. And that way, when the discussion started, it's a lot richer, because the sense of ownership, responsibility is a lot greater.

Higher engagement of learners

So in terms of engagement, I would say that it will be similar or better than the last one. Yeah. Because I think that time the PF thing sort of like also they thought is PF workshop. So they were little confused maybe the first time we had the phase one. So that's why we had to clarify you know, it's really spiral progression that we are looking at in curriculum. So this round I would think like in terms of engagement, I would say that none of them were like a playing with your phone or, you know, like trying to or just sitting back, you know, not so involved. I think all of them were really, really trying their best to solve whatever activity that was given to them. So the engagement was extremely high.

Design Principles across the 2 Phases for PF-Infused Lessons

Design Phases	Activity	Participation Structure	Social Surround
1. Exploration & Generation	Design and conduct activities that are adequately complex with variant-invariant features to bring about failure in problem-solving, engaging and draw on learners' experience	Facilitate collaboration among mixed-ability groups to explore solutions and generate thinking and reflection	Set up a safe environment for learners to explore and generate by setting expectations of conduct underpinned by socio-emotional support
2. Consolidation & Knowledge Assembly	Compare and contrast learner-generated ideas and distil into critical principles or content for assimilation	Facilitate group discussions and presentations with learner engagement and generation of solutions to arrive at critical features	Create a safe space for learners to review, improve and learn from the generated solutions and representations without fear of judgment

Table 1. showing the Design Principles across the 2 Phases for PF-Infused Lessons <https://www.ial.edu.sg/innovation/pf/> 20

Q1. Drawing on the AE survey findings, what insights could you shed on the usefulness and contribution of the PF process to the identification of learning needs?

The results of the aggregate survey across various courses may have increased, but the outcomes are more insightful.

We are not an outlier. We can be more reflective. The survey is the specific context.

As reported in the workshop, the emotional support of learners, AEs would need to modify their approach and be more mindful of their learners so to ensure that the Social Surround remains conducive to learning.

I feel the level of facilitation skills play an important part in

The completeness of the PF process can be impacted by the nature of the problem. Balancing the delivery and the ability to address the problem fully is a challenge.

The group is not a homogeneous group. Making that the group safe to open up, take risk and trying the problem is the key ability of the facilitator.

It is a new learning approach, practice will be required to increase the confidence level. Unlearn to relearn will be a journey.

the related topic.

considered to be of value to them in terms of usefulness.

1. Safe space for Exploration
2. Challenging yet not Frustrating Problem/ investigation
3. **Toggle b/n Designer, Facilitator** as well as Learner Mindset
 1. Role Facilitator & Designer
 2. BALANCE Problem Solving w Content
4. Challenge for First Timers - improve w PRACTICE
5. AE's
 1. Domain Expertise & Fluency w Different Approaches
 2. **Strong disposition to Manage 'confusion, challenge & mindset shift'** for first time learners.
6. Learner and learning group dynamics.
7. Fidelity to PF principles and how to fluently navigate this space!



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- Quality training overview
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- An AE Co-Developer's Learning Experience

Speaker Profile



Muhd Sharul Abd Latib

MSc Innov (SMU), MSc SWD (Cardiff)

DACE (IAL), SAE - Curriculum Development

WSHO & FSM

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Muhamad Sharul is certified facilitator and course developer specializing in QEHS, ISO Management System, and Innovation, utilizes humanistic psychology, behavioral sciences, adult experiential learning, and transformative development to foster collaboration, establish aligned work environments, and improve organizational performance.

He has had careers in the government sector, MNC, Co-operative as well as SMEs. He actively participates in volunteerism activities related to Community Engagement.

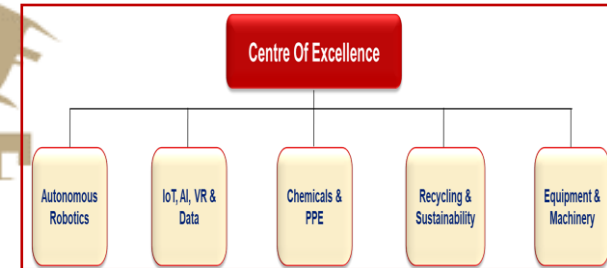
Introduction – Chye Thiam Maintenance



CTM HQ 2018



**1,800 employees;
Strong S'pore Core**



Thought Leadership in Innovation



Maintains > 800 kilometres of roads island-wide

One of the largest & established Environmental Services Companies with >200 projects covering 2.5 mil sqft of commercial/office space maintained



Well Equipped & Specialized Fleet

Training Department conducting in-house WSQ & COJT courses for staff



- Training program aims to equip a new batch of *Quality, Environmental, Health & Safety (QEHS) Site Auditor* with the essential knowledge and skills required to provide on-the-job training effectively.

- The learners from the QEHS Department where their daily job is to go to various project sites and conduct site audits based on the standard benchmark and client's requirement.

- **Profile:** Less than 2 years of experience in their role. With ages ranging from late 20s to early 40s

- **Cognitive abilities:** Requires critical thinking, problem-solving, analytical skills, and attention to detail.

- **Societal level:** They are often working independently and do not need much collaboration with other colleagues to complete tasks and meet deadlines.

- **Emotive level:** May need to possess a certain level of emotional intelligence, including the ability to remain calm and objective in stressful situations, as well as good communication and interpersonal skills to interact effectively with their other colleagues.



Lesson Design & Delivery

Conduct On-Job Training (For Site Auditors)

1. OJT Curriculum	2. OJT Task analysis	3 OJT Worksheets
4. OJT Training log	5. OJT Training schedule	

- Introduced to the concept of On-The-Job Training (OJT) and guided on how to prepare blueprint
- Common issues: Identifying the critical tasks and processes that need to be documented and improved

PF design: Enable learners to have the opportunity to have multiple attempts to practice so that there is opportunity to draw attention to the critical features & assembly into canonical form

1st phase: Generation and exploration

Provide On-The-Job Training – Lesson Plan				
Duration	Content / Activity	Methodology	Resources	
9:00am – 9:10am (10mins)	Task to drive cognitive discussion The focus should be on providing clear guidance, constructive feedback, and opportunities for practice and reflection. It will also be imperative to design the lesson to enable learners to have the opportunity to have multiple attempts so that there is opportunity to draw attention to the critical features & assembly into canonical form. Trainer should make use of the instructions provided below together with those in the Trainer Guide to conduct training for this module.			
9:10am – 9:15am (5mins)	Overview of Course • Explain course aim and course objectives • Describe briefly assessment requirements • Explain the objective of the training which is to "Prepare to facilitate OJT" (For Site Auditors). Learners will be giving a chance to apply their own method of briefing before being taught the actual principles of OJT. • Have a conversation to the learners about why the learning design is conducted this way and not so much of following to what will be done later. Assure them of the safe space there are in and for them to participate in the session in order to get maximum learning. • In order to emphasize the safe surrounding, stop at this juncture to draw out experience from others of an actual fabric and how to overcome this. Else can just share your personal experience on dealing with PF learners	Lecture	PS 1	PP
9:15am – 9:20am (5mins)	1.0. Prepare to Facilitate On-The-Job Training 9:15am – 9:20am (5mins) 1.1. Learning Objectives • Describe the learning outcomes for Section 1 • Create narrative hooks with an affective draw by getting learners to share their prior experience when conducting OJT or briefing	Lecture	PS 4	
9:20am – 9:35am (15mins)	1.1. Introduction • Highlight that for OJT to be effective, there are several considerations that trainers may take into account. These considerations can include the goals and objectives of the training, the target audience, the materials and resources needed, the length of the training session, the assessment methods, and the feedback mechanisms. These considerations can be useful when uncovering first principles in conducting OJT as they help to ensure that the training is effective and meets the needs of the learners	Lecture	PS 5-6	
9:35am – 10:00am (25mins)	1.2. PF activity Break the learners into groups of 2 (spread these with experience across). Each group will be assigned a topic and need to prepare for briefing using their own method. They will have to imagine that they will need to conduct OJT to the 30 workites throughout this year and to develop a formal OJT course which requires a documented course syllabus and the outcome requires a documented record of successful completion. 1st personal: Office Common Area Cleaning Procedures 2nd personal: Office Space Cleaning Procedures	PF - Enabled collaboration in mixed ability groups PF - Support learners to collaborate through an appropriate macro script	PS 9	
10:00am – 10:25am (25mins)	1.2. PF activity Break the learners into groups of 2 (ensure different groupings based on the contrast of solutions). Each group will be assigned a different topic and need to prepare for briefing using their own method. They will have to imagine that they will need to conduct OJT to the 30 workites throughout this year and to develop a formal OJT course which requires a documented course syllabus and the outcome requires a documented record of successful completion.	PF - Enabled collaboration in mixed ability groups PF - Support learners to collaborate through an appropriate macro script	PS 11	
10:25am – 10:50am (25mins)	1.2. PF activity Break the learners into groups of 2 (ensure different groupings based on the contrast of solutions). Each group will be assigned a different topic and need to prepare for briefing using their own method. They will have to imagine that they will need to conduct OJT to the 30 workites throughout this year and to develop a formal OJT course which requires a documented course syllabus and the outcome requires a documented record of successful completion.	PF - Enabled collaboration in mixed ability groups PF - Support learners to collaborate	PS 13	
10:50am – 11:05am (15mins)	1.2. PF activity Break the learners into groups of 2 (ensure different groupings based on the contrast of solutions). Each group will be assigned a different topic and need to prepare for briefing using their own method. They will have to imagine that they will need to conduct OJT to the 30 workites throughout this year and to develop a formal OJT course which requires a documented course syllabus and the outcome requires a documented record of successful completion.	PF - Support learners to collaborate		
11:05am – 11:30am (25mins)	1.2. Interpreting Blueprint for On-The-Job Training • Explain that to provide OJT, we always start with interpreting the OJT blueprint to understand training requirements • Explain the 5 OJT Blueprint • Discuss and elicit inputs from the class on what an OJT Blueprint is • Describe and explain what an OJT Blueprint is using the PS Slides	Lecture Discussion	PS 19-25	
11:30am – 11:50am (20mins)	Learning Activity Learners are to convert their "methods of briefing" briefing using the 5 Components of OJT Blueprint (template to be given out)			PS 26
11:50am – 12:30pm (40mins)	Assessment Learners will be assigned a topic and need to prepare their OJT Blueprint of "Waldheim Cleaning Procedures" to "cleaners" Follow by survey to at least 2 learners to get their view on: • Their knowledge of the preparing for OJT before and after the training • Whether such training is able to make them adapt to new scenarios and circumstances • Whether such training is able to inculcate creativity in learners & openness for trainer to accept creative ideas (attention to the critical features which is for the learner ability to "Prepare On-The-Job Training Blueprint")			PS 27
12:30pm – 12:45pm	Post Training Reflection & Feedback Learners completed IAL survey and participants identified to be interviewed will meet the IAL Observer.			

- Lesson Plan – Yellow highlighted is the PF component
- 9am to 12.30pm – Slot in 2 hours is for PF component
- When designing and conducting their own on-the-job training (OJT) briefing, learners are informed of several considerations that they may take into account:
 - goals and objectives of the training,
 - target audience,
 - materials and resources needed,
 - length of the training session,
 - assessment methods, and the feedback mechanisms.

1st phase: Generation and exploration

Office Common Area Cleaning Procedures 办公室公共区域清洁程序

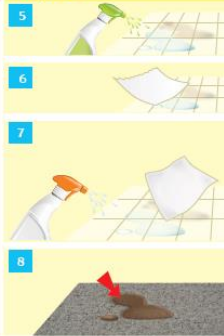


2 Pre-work Inspection (Continued) 工作前视察- 续

Equipment and Chemicals needed 所需配备与化学品

- Safety Signage
• 安全标牌
- Absorbent Paper Material
• 吸水材料
- White Cleaning Cloths
• 白布
- Water Spray Bottle
• 喷雾瓶
- Cleaning chemical (neutral – commonly green colour-coded tape)
• 清洁剂 (一般贴有绿色标签贴纸为中性)

Step 步骤



Description 描述

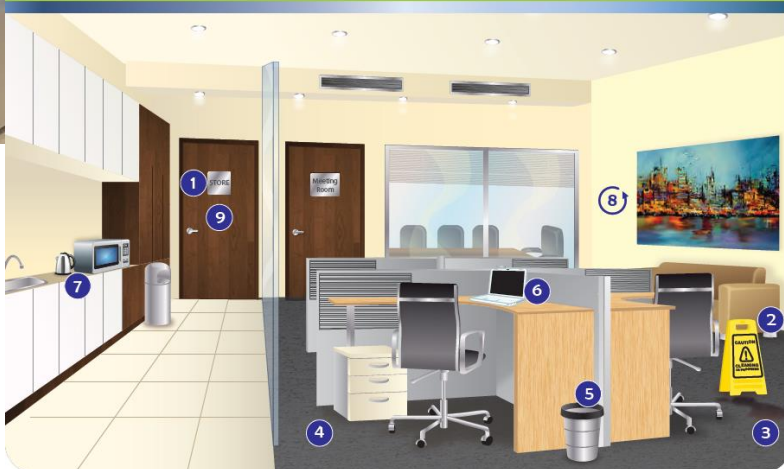
- Spray cleaning chemical onto the spillage or stain on hard floor
• 对地板上的溅漏或污渍处喷洒清洁剂
 - Clear spillage using absorbent paper material
• 使用吸水纸清除溅漏物
 - Spray water and use white cleaning cloth to clear spillage or stain in circular motion till completely removed
• 向溅漏或污渍处喷水, 用白色清洁布以画圈动作清理直到完全干净为止
 - Repeat steps 5 to 7, to remove other spillages and stains
• 重复步骤 5 至 7, 清除其他溅漏和污渍
- For removal of stains and spillages on the carpet, refer to Sequence 3 of the pictorial guide for Office Space Cleaning
有关清除地毯上的污渍和溅漏的方法, 请参考办公室清洁图解指南, 次序 3



PICTORIAL GUIDE ON RETAIL F&B PREMISES CLEANING PROCEDURES 餐饮场所的清洁程序



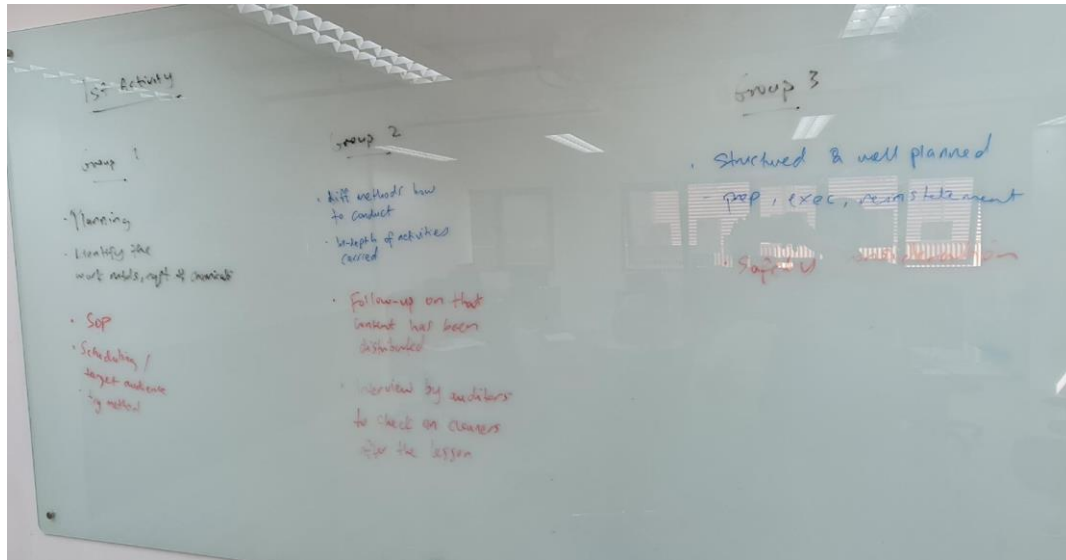
Office Space Cleaning Procedures 办公室内清洁程序



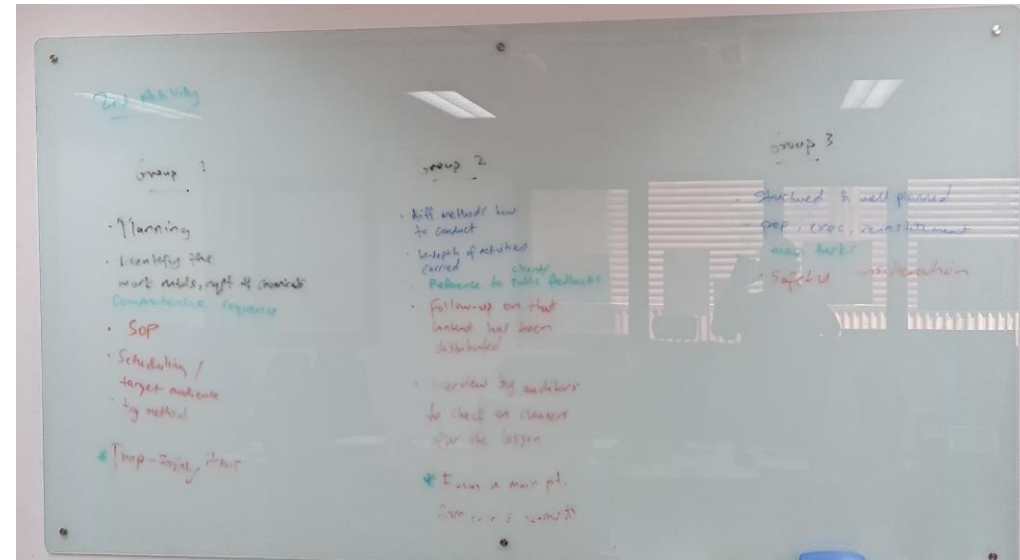
- Learners divided into groups of two, with experienced individuals spread among the groups
- The groups were given three pictorials representing different cleaning procedures
- Given a 15-minute timeframe to discuss, thereafter each group shared their COJT briefing using their chosen method
- Facilitator encouraged pushing the boundaries of the briefings by emphasizing aspects such as description, safety considerations, and available resources

2nd phase: Consolidation and Knowledge Assembly

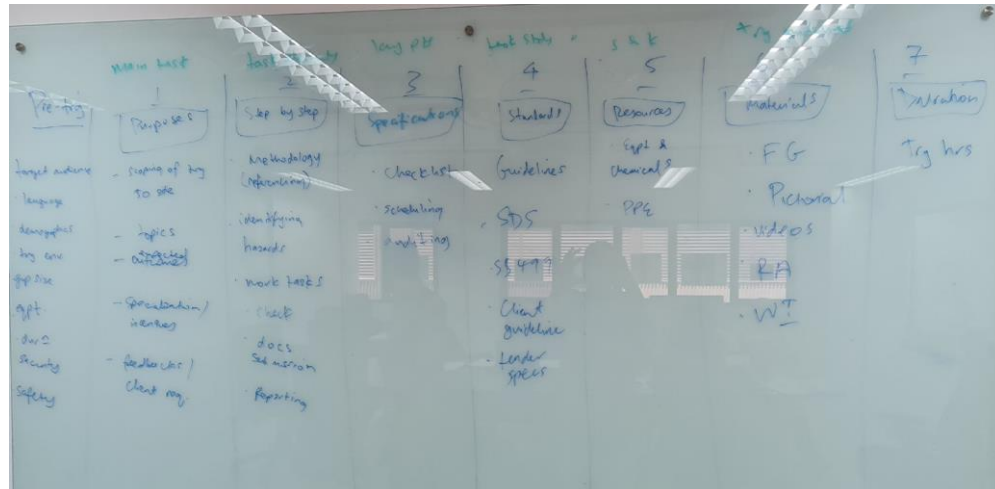
1st Activity



2nd Activity



Consolidation & Knowledge Assembly



The overall design goal of Phase 2 was to afford opportunities for learners to compare and contrast the affordances and constraints of failed or sub-optimal representations and solution methods (RSMs) and the assembly of their RSMs

- Designing the activity: examining learner-generated and canonical RSMs.**
 - Discussion where learners' methods are put together like a jigsaw and build upon their ideas to fit the OJT blueprint format.
- Designing the participation structures: enhancing engagement.**
 - Learner's attention are directed to notice those critical components in "OJT Blueprint" framework and compare it against their own 'method of briefing' and see if there is anything similar.
- Designing the social surround: creating a safe space to explore.**
 - Careful not to correct learners' mistakes but emphasizes on the process of coming up with RSMs is an important part of the whole discussions.

Evaluation Considerations

2 key assessment measures were employed:

- Objective measures were gathered through assessment records,
 - Survey findings from feedback forms provided valuable insights from all the learners.
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- Additional support and clarification is required in breaking down the blueprint into specific task-oriented components,
 - Learners are really applying their knowledge and skills to address the specific hazards depicted in the pictures based on their site experience,
 - The lesson's focus on embracing failures as opportunities for growth,
 - This collaborative exchange of ideas enriched the learning experience and provided learners with valuable insights to enhance their own materials.



Refinement for future PF lessons

- **Refinements** such as optimizing activity formats (Generation), providing clearer instructions and assessment formats (Exploration), and ensuring a safe and inclusive learning environment (Consolidation).
- The **reflections and proposed improvements** shall be grounded in learner feedback, observed behavior, and engagement, with the ultimate goal of continuously refining the PF approach.



Reflections on Application & Delivery of PF DPs

- In considering the application and delivery of PF design principles, several aspects come to mind:

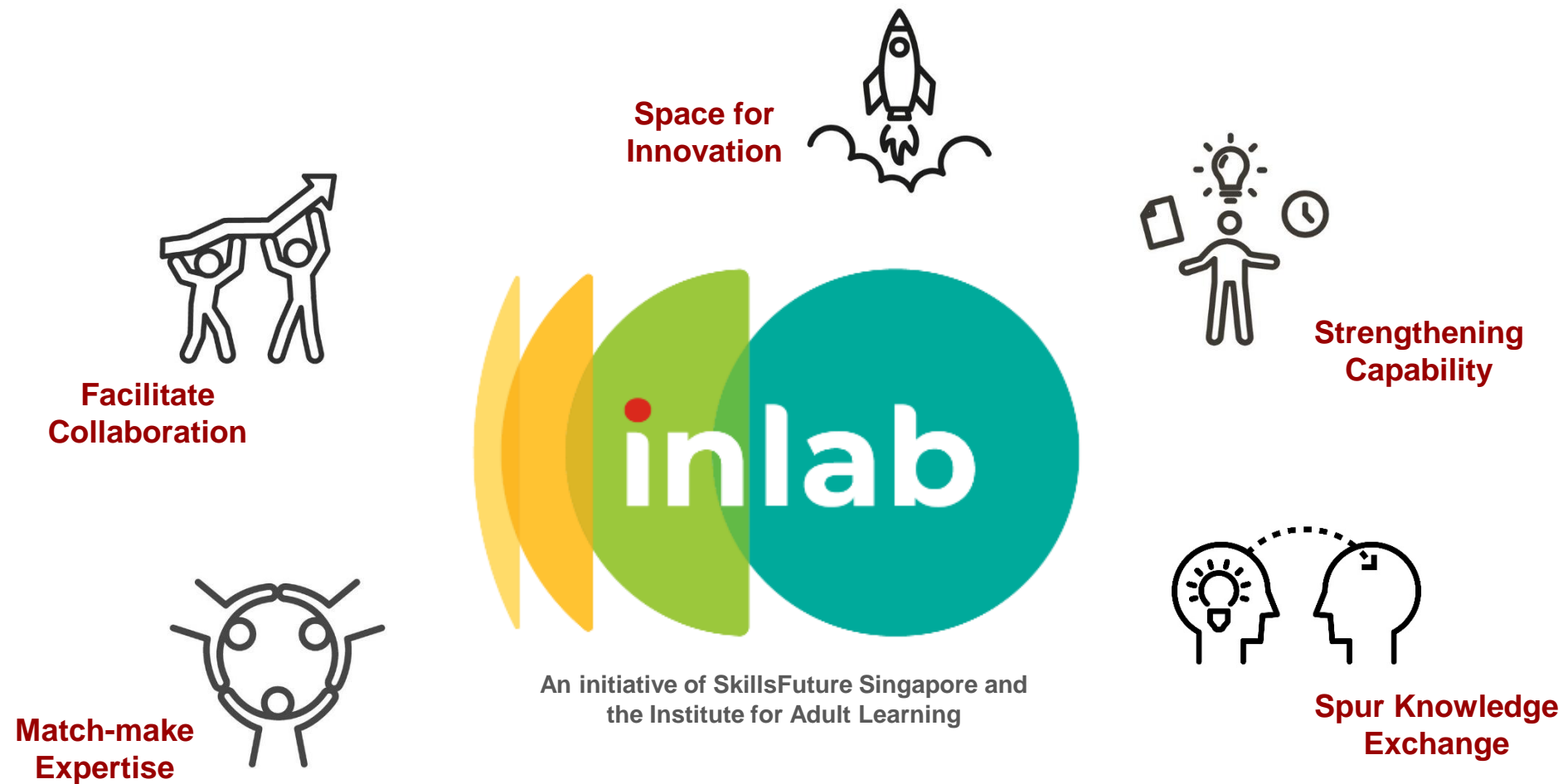
Firstly, Important to continually assess learners' understanding to ensure their effective engagement throughout the lesson

With more practice, facilitator was more willing to take risks and try new things. This will allowed the facilitator to explore different possibilities and to find the best solution for the problem at hand

Deliberate inclusion of "failure" in the lesson design was crucial to generate ideas from learners. The success of the design in meeting this desired outcome depended on factors such as learner engagement, clear instructions, and effective facilitator guidance

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Download PF project report- <https://www.ial.edu.sg/innovation/pf/>



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