Future of Work • Future of Learning
3 - 4 November 2016

Adult Learning Symposium

Using Technology-Enabled Learning to Enhance Work at Height Training

Goh Chye Guan, SMER Pte Ltd
Johnathan Wan, Asretec Pte Ltd

Organised by: SKILLSFuture SG IAL institute for adult learning singapore

Scope

1. Introduction
2. Illeris Three Dimensions of Learning
3. The Risks of Working at Height
4. Current Work at Height Training
5. Technology-Enabled Work at Height Training
6. Summary

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1.

Introduction

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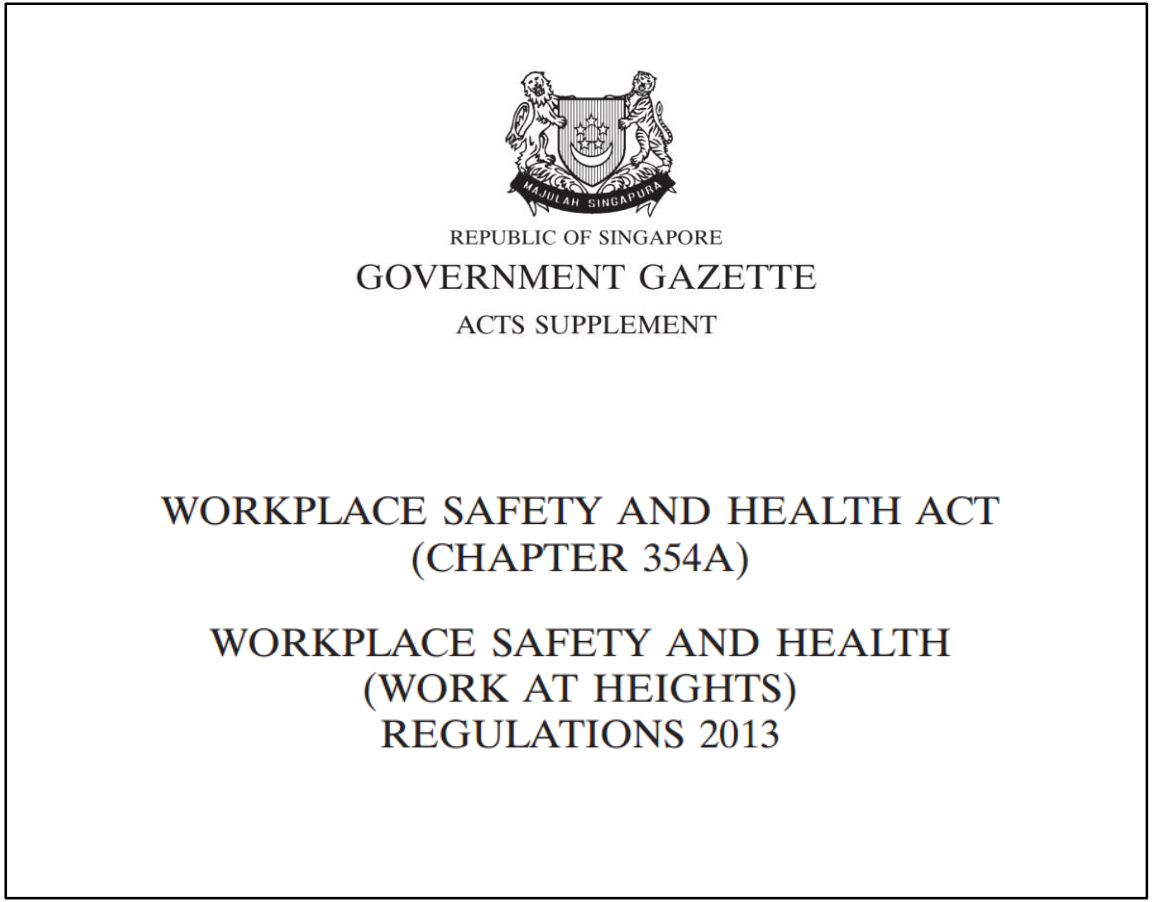

REPUBLIC OF SINGAPORE

GOVERNMENT GAZETTE

ACTS SUPPLEMENT

WORKPLACE SAFETY AND HEALTH ACT
(CHAPTER 354A)

WORKPLACE SAFETY AND HEALTH
(WORK AT HEIGHTS)
REGULATIONS 2013

PART II

GENERAL PROVISIONS

4. Avoidance of work at height
5. Fall prevention plan
6. Training for persons at work
7. Supervision of work at height

Training for persons at work

6. It shall be the duty of the responsible person of any person who carries out or is to carry out any work at height to ensure that the person shall work at height in a workplace only after he has first received adequate safety and health training to familiarise himself with the hazards associated with work at height and the precautions to be observed.

Definitions

2. In these Regulations, unless the context otherwise requires --

"competent person" means a person who has sufficient experience and training to perform the work required to be carried out, and has passed such courses as the Commissioner may require for that work;

Supervision of work at height

7. It shall be the duty of the responsible person of any person who carries out or is to carry out any work at height to ensure that the person shall work at height in a workplace under the immediate supervision of a competent person for that work.

(2) For the purposes of paragraph (1), the occupier of the workplace or the responsible person of any person who carries out or is to carry out the hazardous work at height in the workplace (as the case may be) shall —

(*a*) appoint a competent person for the hazardous work at height at the workplace to carry out the duties of an authorised manager for the hazardous work at height;

(*b*) appoint another competent person for the hazardous work at height at the workplace to carry out the duties of a work-at-height safety assessor for the hazardous work at height; and

Current WAH Training (Classroom and Practical)

WAH Classroom Training

WAH Practical Training

2.

Illeris Three Dimensions of Learning

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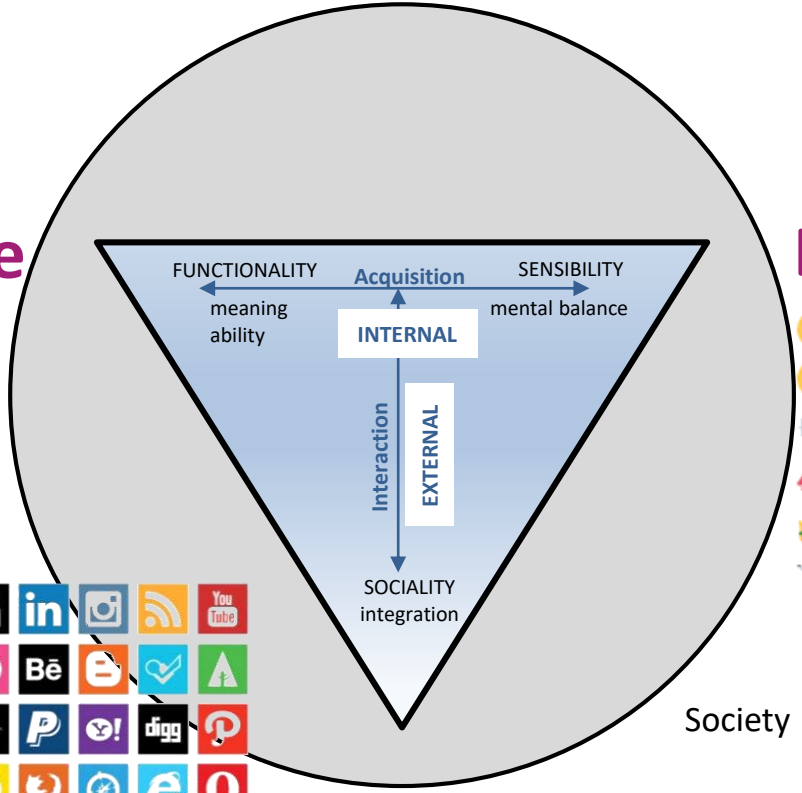
Cognitive



Emotion

Society

Social

The Process and Dimensions of Learning (Knud Illeris, 2003)

3.

The Risk of Working at Height

Identifying Areas of Concern

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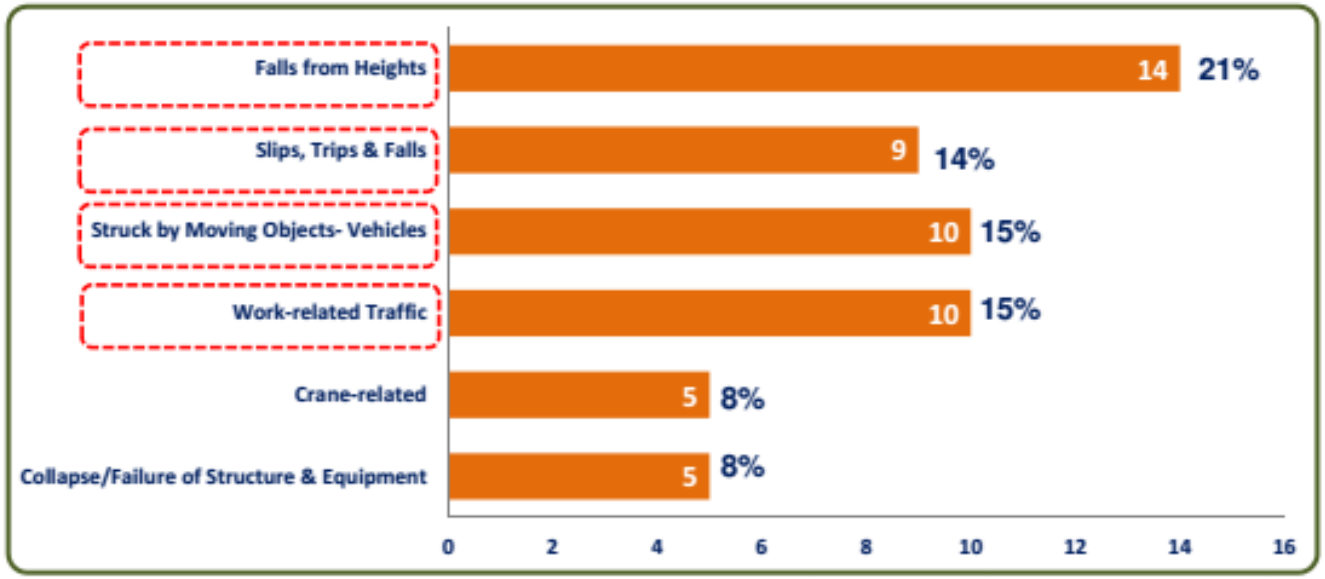
2015 Fatal Injuries (66)

Top Incident Types



81% of the fatal injuries

WSH Statistics - 2015

ProBE Plus Forum 2016
10 March 2016

WSH Institute

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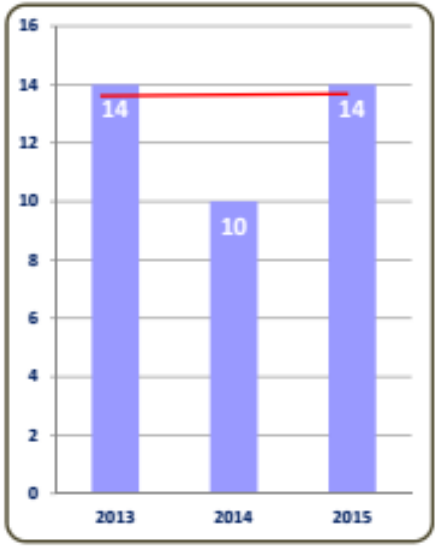
Identifying Areas of Concern

2015 Fatal Injuries

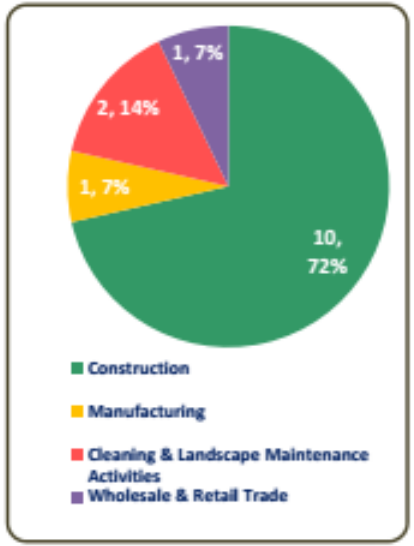
Falls from Heights

Construction; Structures & Formwork

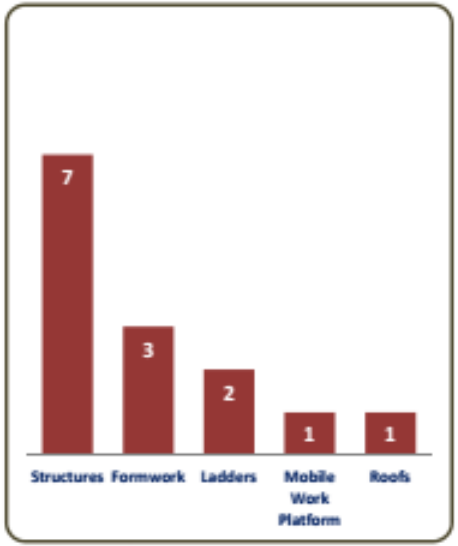
3-Year Trend



By Industry, 2015



By Incident Agent, 2015



Falls from height remain as top causes of fatal accident all over the World

- Ladders
- Scaffolds
- Roofs

4.

Current Work at Height Training

Current WAH Training

	Classroom	Work-based	Workplace	Technology-Enabled
Workers	✓	✓ (Practical)		
Supervisors	✓	✓ (Case Study)		
Assessors	✓	✓ (Case Study)		
Authorised	✓	✓ (Case Study)		

Blending Classroom with Work and Technology – How to Design a Blended Curriculum
Institute for Adult Learning (IAL), Singapore, 2016

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Work-based Practical Training

Demo by Johnathan Wan, Asretec Pte Ltd

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A Negative Example of How NOT to Carry Out Work-based Practical Training

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If the learner failed to learn, it is because the trainer failed to train

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Lanyard fully extended
Can’t go beyond the yellow line

5.

Technology-Enabled Work at Height Training

Current WAH Training

	Classroom	Work-based	Workplace	Technology-Enabled
Workers	✓	✓ (Practical)		
Supervisors	✓	✓ (Case Study)		
Assessors	✓	✓ (Case Study)		
Authorised	✓	✓ (Case Study)		

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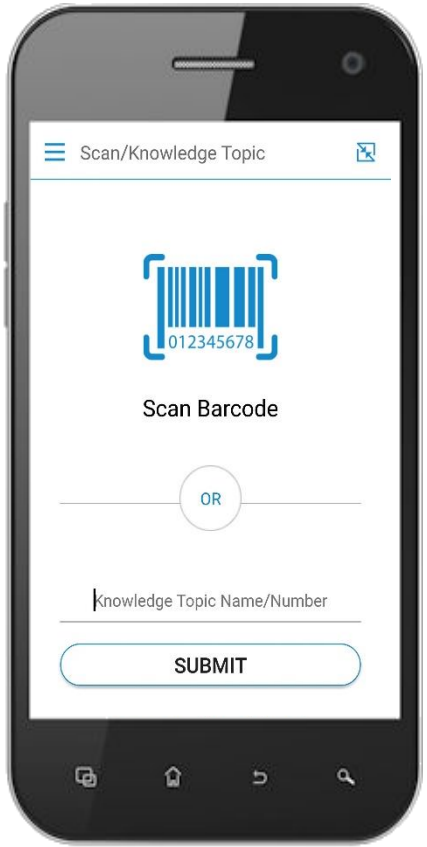
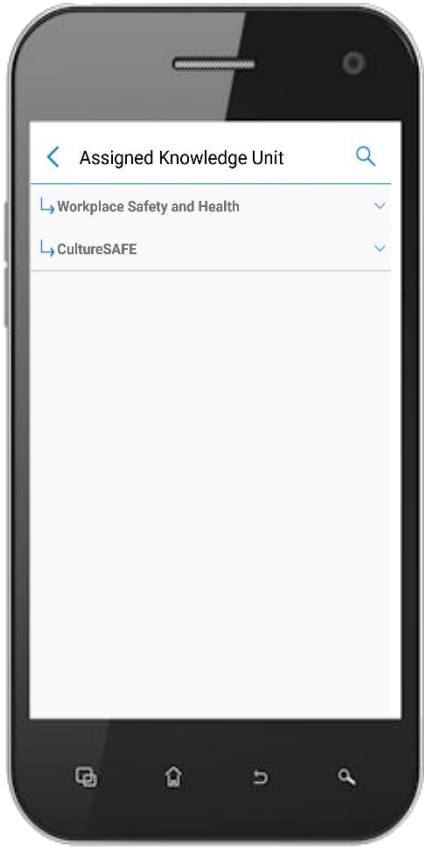
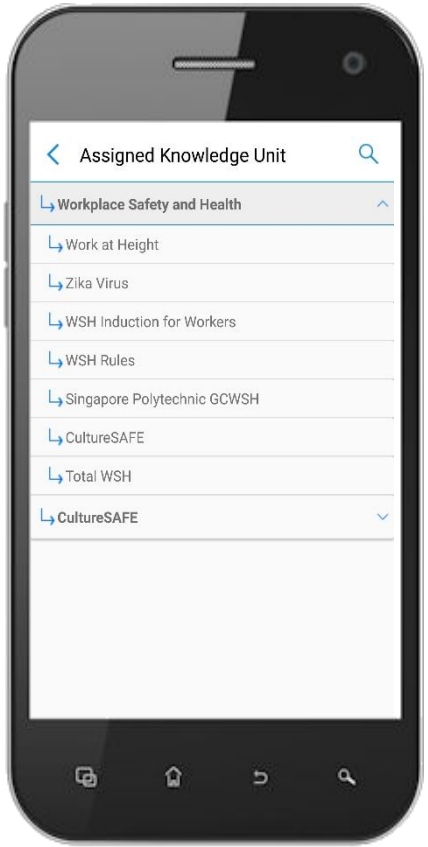
Technology-Enabled WAH Training

1. Mobile Micro Learning (mPower by AcuiZen)
2. Virtual Reality (VR Camera and VR Box)
3. Augmented Reality (still under development)

Mobile Micro Learning

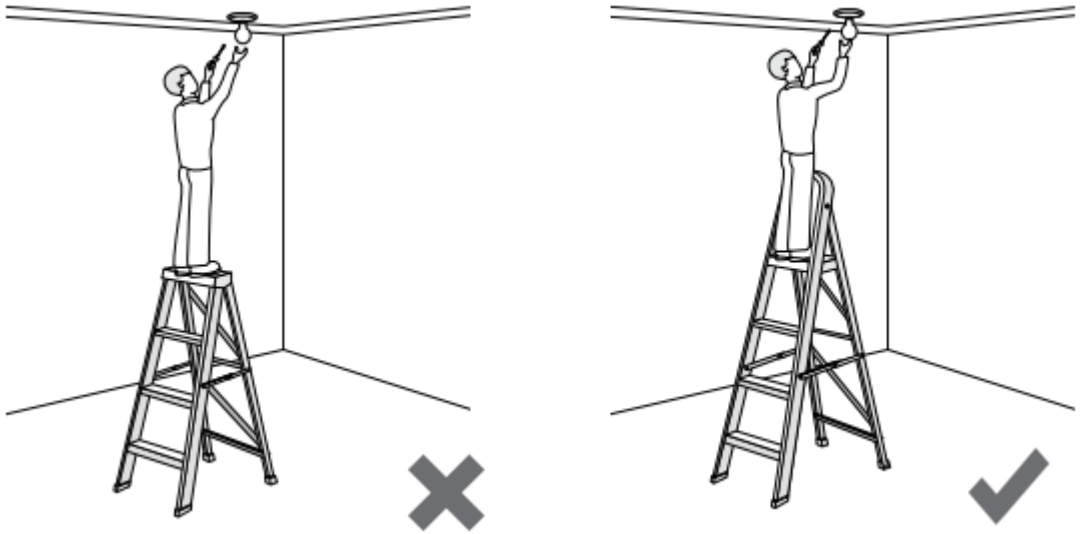







10
30

Virtual Reality (with VR Box)



Technology-Enabled Informal Learning / Social Learning

6.

Summary

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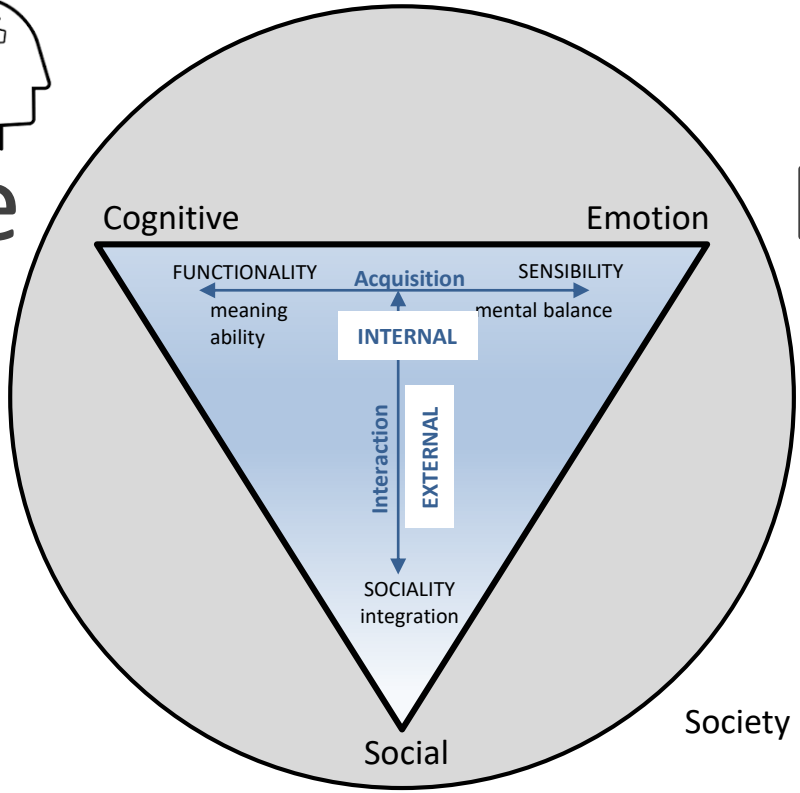
Cognitive



Emotion

Social

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Thank You

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