



Exploring *Informal Learning* at the Airlines

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System Wide Safety

Exploring Informal Learning at the Airlines



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Introduction

2

Pilot training overview

3

Informal learning overview

4

Informal learning in the workplace

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Implications for future research

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- Where are we?
- How did we get here?



- What is expertise?
- How do pilots get it?

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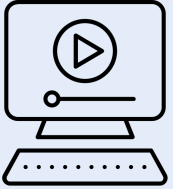
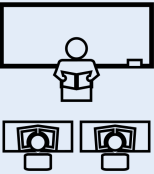
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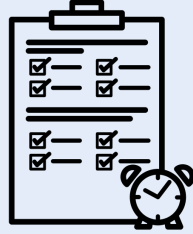
How do Pilots “Learn” Formally?



Created by N.Style
from the Noun Project


Ground school*

- SOP
- Aircraft systems
- Regulations



Written test*

- Varies by airline



FAA Oral

- Initial qual only



2013 Boeing Survey

Pilot perceptions of training effectiveness

Pilots who felt “comfortable” operating the FMS after training:

23%



2013 Boeing Survey

Pilot perceptions of training effectiveness

Pilots needing > 3 months to feel “comfortable” operating the FMS:

62%



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Types of Informal Learning



<i>Narrative-based, socio-cultural</i>	<i>Self-directed, constructivist</i>
Talk with others	Observe others
Collaborate with others	Search the internet
Books and magazines	Trial and error
Share resources with others	Reflect on actions

Lohman
(2005)

Types of Informal Learning



Narrative-based, socio-cultural

Self-directed, constructivist

**Highly contextual +
Sociocultural**



Promotes metacognition



Narrative-based, socio-cultural

Self-directed, constructivist

Highly contextualized

Intrinsic learner motivation

Socialization into a community of practice

Learning is continuous



<i>Narrative-based, socio-cultural</i>	<i>Self-directed, constructivist</i>
Upgrading FO hot brakes question	Descent gradient exploration
Transitioning captain training prep	Reviewing ASAP reports
Qantas 32	Visual approach strategies

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Jacobs and Park Workplace Learning Framework (2009)

Learning also occurs during critical moments of need embedded in the context of practice.



Jacobs and Park Workplace Learning Framework

Location of learning:	At work	Away from work
Degree of planning	Structured	Unstructured
Role of Instructor	Active	Passive





Jacobs and Park Workplace Learning Framework

Location of learning:	At work	<u>Away from work</u>
Degree of planning	Structured	<u>Unstructured</u>
Role of Instructor	Active	<u>Passive</u>





Away from work

Unstructured

Passive

- Instructor and student research an FMC behavior that could lead to ATC violations



Hodkinson & Hodkinson Workplace Learning Framework

	<i>Intentional/planned</i>	<i>Unintentional/unplanned</i>
Learning that which is already known to others	(1)	(2)
Development of existing capability	(3)	(4)
Learning that which is new in the workplace (or treated as such)	(5)	(6)



Hodkinson & Hodkinson Workplace Learning Framework

	<i>Intentional/planned</i>	<i>Unintentional/unplanned</i>
Learning that which is already known to others	(1)	(2)
Development of existing capability	(3)	(4)
Learning that which is new in the workplace (or treated as such)	(5)	(6)



Unintentional/unplanned

Learning that which is already known to others

- Crew experiences mechanical issue during engine start
 - FO recalls policy from a previous operation, believes they must return to the gate
 - Captain shows FO the Ops reference allowing crew deferral for certain discrepancies, preventing lengthy delay

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Can an exploration of informal learning help us understand:

1. How pilots facilitate the transfer of expertise?
2. What gaps in formal learning do pilots fill through informal processes?
3. Can leveraging the affordances of informal learning promote more effective formal learning?
4. Can these affordances promote a “culture of learning” and improved attitudes towards safety?