How does test design influence training?

Washback effects of LPR tests

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ICA EA President
Washback effects

Test design

• Test task types
• Test task content
• Test task delivery methods
Washback

The effect *high stakes language tests* have on:

- language training and learning (teaching, training materials and learning styles); and

- perceptions, values, expectations and attitudes among students, teachers and organisations where the results of these tests serve a purpose and have consequences

- Tests can have **positive** or **negative** washback effects
Positive washback

• When the design, content and delivery of language tests promotes meaningful and useful language development in downstream training
• When the tests promote the development of good curriculum, teaching practices and positive learner and teacher attitudes

• Tests designed to sufficiently reflect real-world pilot/ATC communication needs and have high authenticity tend to have positive washback effects
Desirable LPR washback scenario

- Training curriculum
- ATC/pilot communication needs
- LPR test content design and delivery
- Attitudes and perceptions: Relevance, Acceptance, Motivation

ICAEA
Signs of positive washback

• Test tasks, content and delivery reflect real-world language situations and needs: authenticity is high
• Training and curriculum are not focused on just test preparation
• Training tends to be ongoing
• Students and teachers value curriculum for application to real-world communication needs
• Curriculum may mirror aspects of test content, delivery or task types, BUT doing this still provides opportunities for meaningful language development
Other language skills:
- Reading
- Writing

Other skills & knowledge:
- Memory
- Life experiences and knowledge
- Computer literacy
- Time management
- Understanding poor quality RTF recordings

Aviation technical knowledge:
- Procedures
- Equipment
- Systems
- Places

Language knowledge:
- Structure
- Vocabulary
- Sounds in English
- Discourse

Communication skills:
- Pronunciation
- Fluency
- Comprehension
- Discourse management

Aviation job knowledge & experience:
- Air-ground communication skills and knowledge:
  - Structure
  - Vocabulary
  - Pronunciation
  - Fluency
  - Discourse management
ICAO LPRs

Real-world language needs of pilots/ATCOs

ICAO test design
- Content
- Task-types
- Delivery

Aviation English Training Programmes
- Content
- Task-types
- Delivery

Organisational perceptions and values
- Airlines/ANSPs value test and training
- Regulators respect ICAO LPRs and safety

Positive test-taker attitudes to test and training

On-the-job performance
- ↑ English proficiency
- ↑ Communications
- Safe operations

Aviation English Training Programmes
Negative washback

- When the design, content and delivery of (flawed) language tests influences downstream training so that minimal meaningful or useful language development occurs
- When tests promote the development of ineffective curriculum, teaching practices and negative learner and teacher attitudes
- Tests not well designed because they do not sufficiently reflect real-world pilot/ATC communication needs and have low authenticity tend to have negative washback effects
Undesirable LPR washback scenario

Training curriculum

ATC / pilot communication needs

LPR test content design and delivery

Attitudes and perceptions:

- Relevance
- Acceptance
- Motivation
Signs of negative washback

- Test tasks and content do not reflect real-world language needs; have low authenticity
- Training and curriculum focus on test preparation
- Test takers may achieve a required level on the test but show little gains in proficiency
- Training is mostly only in the lead up to testing
- The curriculum and training focuses on simulating (flawed) test tasks
- The curriculum is strongly influenced by the (flawed) test tasks
- Students and teachers are not motivated
Language knowledge:
- Structure
- Vocabulary
- Sounds in English
- Discourse

Communication skills:
- Pronunciation
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- Comprehension
- Discourse management

Aviation technical knowledge:
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- Understanding poor quality RTF recordings

Air-ground communication skills and knowledge:
- Structure
- Vocabulary
- Pronunciation
- Fluency
- Discourse management
- Comprehension

Aviation job knowledge & experience

Other language skills:
- Reading
- Writing
ICAO LPRs

Real-world language needs of pilots/ATCOs

ICAO test design
- Content
- Task-types
- Delivery

Aviation English Training Programmes
- Content
- Task-types
- Delivery

Organisational perceptions and values
- Airlines/ANSPs do not value test or training
- Regulators unaware of ICAO LPRs and safety

Negative test-taker attitudes to test and training

On-the-job performance
- ↓ English proficiency
- ↓ Communications
- Unsafe operations
• Tests designed to sufficiently reflect real-world communication needs and have high authenticity tend to have positive washback effects

• Tests not well designed because they do not sufficiently reflect real-world communication needs and have low authenticity tend to have negative washback effects
Do poor tests always lead to negative washback?

• Washback is influenced by
  – 1. The test
  – 2. The teacher and curriculum developer: expert instructors can avoid allowing teaching to be influenced by a flawed test

• Flawed tests will negatively influence policy, values and attitudes (individuals and organisations)
Workshop

Evaluate a range of Aviation English test task to consider:

1. The extent to which each type reflects real-world communication needs of pilots/ATCOs
2. How effective each would be in and ICAO LPRs proficiency test
3. The washback effects based on the content, task type and delivery method for selected test task types
The test task types

Evaluate each task type as follows:

1. Is the task designed for ATCOs (A), pilots (P) or either ATCOs and pilots (A/P)?
2. Which language skills from the ICAO rating scale does the task allow for assessment purposes? (Speaking: P, S, V, F, I or Listening: C)
3. Does the task allow for a sufficient range and complexity of language to be assessed (Y/N)?
4. What skills does the task assess (where on the diagram does this task belong)? (Write the Test Task number on the diagram)
5. How well does the task content mirror real-world communicative contexts for pilots or controllers (how authentic is the content) – High (H), Medium (M) or Low (L)?
6. How well do the task requirements mirror real-world communicative requirements in communication for pilots or controllers (how authentic is the task type) – High (H), Medium (M) or Low (L)?
7. How well does the way the task is delivered mirror real-world communicative contexts for pilots or controllers (how authentic is the delivery) – High (H), Medium (M) or Low (L)?
8. Overall, would the task most likely have a positive ✓ or negative ✗ washback effect?
Read the following out aloud:

Listen to a short news report about an aviation incident. After the recording finishes you will hear a beep. You will have 15 seconds to prepare a summary and about minute to tell me what the news report was about.
INSTRUCTIONS
You will be given a task card describing a non-routine situation.
You will have 30 seconds to study the situation and prepare your response.
You will have 3 minutes to respond.

Task
Describe your reaction and what you would do in this situation.

Examiner instructions
Select one of the 5 situations to the candidate. Allow time 30 seconds for reading and up to 3 minutes for a response. Do not interrupt the candidate.

You taxiing for departure L360, flying west to Dubai 40 miles east of the Bangkok FIR. A cabin crew call you to advise a passenger is unconscious and is not responding.

You en-route, at FL360, flying west to Dubai 40 miles east of the Bangkok FIR. The cabin crew call you to advise a passenger is unconscious and is not responding.

You are on climb out of Hong Kong and notice the hydraulic pressure is dropping rapidly. Your co-pilot advises he is the left main gear will not retract.
Language knowledge:
- Structure
- Vocabulary
- Sounds in English
- Discourse

Other language skills:
- Reading
- Writing

Communication skills:
- Pronunciation
- Fluency
- Comprehension
- Discourse management

Air-ground communication skills and knowledge:
- Structure
- Vocabulary
- Pronunciation
- Fluency
- Discourse management

Aviation technical knowledge:
- Procedures
- Equipment
- Systems
- Places

Aviation job knowledge & experience

Other skills & knowledge:
- Memory
- Life experiences and knowledge
- Computer literacy
- Time management
- Understanding poor quality RTF recordings

Language knowledge:
- Structure
- Vocabulary
- Sounds in English
- Discourse

Communication skills:
- Pronunciation
- Fluency
- Comprehension
- Discourse management

Aviation technical knowledge:
- Procedures
- Equipment
- Systems
- Places

Aviation job knowledge & experience

Other skills & knowledge:
- Memory
- Life experiences and knowledge
- Computer literacy
- Time management
- Understanding poor quality RTF recordings
You will hear 2 short pilot-ATC exchanges in non-routine situations. After each recording I will ask you some questions about what happened. You may take notes while you are listening.

Exchange 1

Ask each of the following:
• What happened?
• Where was the problem?
• Who first noticed the problem?
• What did ATC advise the pilots would happen next?

Speculating: Ask each of the following.
1. Why did you think this problem happened?
2. Do you think the aircraft was inbound or outbound? Why?
3. What might have happened if this problem hadn’t been identified?
Language knowledge:
- Structure
- Vocabulary
- Sounds in English
- Discourse

Communication skills:
- Pronunciation
- Fluency
- Comprehension
- Discourse management

Air-ground communication skills and knowledge:
- Structure
- Vocabulary
- Pronunciation
- Fluency
- Discourse management

Aviation technical knowledge:
- Procedures
- Equipment
- Systems
- Places

Other skills & knowledge:
- Memory
- Life experiences and knowledge
- Computer literacy
- Time management
- Understanding poor quality RTF recordings

Other language skills:
- Reading
- Writing

Aviation job knowledge & experience
# Task type 4

**Listening comprehension**

You will hear 4 pilot-ATC exchanges. Answer two questions on the screen about each exchange by choosing the best answer, a-d.

**Exchange 1**

**PIL:** Centre, we’ve got a possible medical situation on board and may need to return, Red Cap 413.

**ATC:** Red Cap 413, understood. Advise intentions when able.

**PIL:** I will need to return to the gate. The cabin reports a boy has lost consciousness. We’re getting an update now, Red Cap 413.

**ATC:** Red Cap 413, roger. Do you require any assistance?

**PIL:** Affirm, we’d like paramedics to meet us at the gate. Please advise the passenger is 8 years old. His mother says he’s diabetic and hasn’t had an insulin injection. A physician is on board treating him now, Red Cap 413.

**ATC:** Copied that and I’ll pass that on. Medics are on the way to your gate now.

<table>
<thead>
<tr>
<th>Item</th>
<th>What are the passenger’s medical symptoms?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>Vomiting</td>
</tr>
<tr>
<td>b)</td>
<td>Fainting</td>
</tr>
<tr>
<td>c)</td>
<td>Uncontrolled fit</td>
</tr>
<tr>
<td>d)</td>
<td>Difficulty breathing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>What probably caused the passenger’s condition?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>He had an injection</td>
</tr>
<tr>
<td>b)</td>
<td>He ate some bad food</td>
</tr>
<tr>
<td>c)</td>
<td>He has a mental illness</td>
</tr>
<tr>
<td>d)</td>
<td>He did not take medication</td>
</tr>
</tbody>
</table>
Task type 5

Candidate test paper

**Listening comprehension**

You will hear a news report about an aviation incident. Answer the questions by writing short sentences while you are listening. You will hear the recording twice.

<table>
<thead>
<tr>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What had the pilot requested?</td>
</tr>
<tr>
<td>2. What kind of weather is often problematic in this part of the world?</td>
</tr>
<tr>
<td>3. What type of aircraft was it?</td>
</tr>
<tr>
<td>4. What is the most likely reason for the cause of the accident?</td>
</tr>
<tr>
<td>5. Why was the accident unlikely to have been because of a technical problem?</td>
</tr>
<tr>
<td>6. Why do they think the incident happened very quickly?</td>
</tr>
</tbody>
</table>
Task type 6

Part 3: Collecting and relaying information

Imagine we are at Melville ATC unit. You are a controller. I am the shift supervisor. After lunch I come back to the ATC room. There has been a near miss between two aircraft at your sector. I will ask questions and try to find out as much information as possible.

I am the shift supervisor.

Please make a report to me about this incident.

OKY 348 was flying STAR procedure “South Bravo” to Runway 01 at Melville. I cleared OKY 348 to descend from FL90 to FL70.

The captain reported TCAS climb at 1942.

The captain reported a near miss at 1944 and asked me why I hadn’t informed them of the converging traffic.

The captain said at the moment of the near miss they were passing FL80.

I had no information on the other traffic and no radar indication of it.

The captain said the intruder was at their 11 o’clock position on a converging heading.

The captain said the altitude difference was 200 feet or less.

The captain said it was a grey-colored Boeing 747.

I queried military controllers about their activity in the area and they said they had a departure from the airdrome located in prohibited area Papa 2.

### Information

<table>
<thead>
<tr>
<th>Type of aircraft</th>
<th>Ilyushin-76</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration</td>
<td>Ra-76987</td>
</tr>
<tr>
<td>Operator</td>
<td>Ok airlines</td>
</tr>
<tr>
<td>Call sign:</td>
<td>Oky 348</td>
</tr>
<tr>
<td>Crew</td>
<td>No information</td>
</tr>
<tr>
<td>Passengers</td>
<td>No information</td>
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<tr>
<td>Route</td>
<td>Sofia – Melville</td>
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<tr>
<td>Stage of flight</td>
<td>Arrival</td>
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<tr>
<td>Profile</td>
<td>Descent</td>
</tr>
<tr>
<td>Time of the day</td>
<td>1942 local</td>
</tr>
<tr>
<td>Weather</td>
<td>Overcast</td>
</tr>
<tr>
<td>Heading</td>
<td>345</td>
</tr>
<tr>
<td>Airspeed</td>
<td>450 kmph</td>
</tr>
</tbody>
</table>
You will hear 6 short pilot transmissions. Explain the what each transmission is about.

Your responses will be recorded.

Audio
1. We are reporting loss of pressurisation. I need lower immediately.
2. We advise that we are experiencing some severe turbulence at 2200 feet.
3. There is a build-up ahead of me. Request deviate 2 degrees left of course.
4. We’re meeting severe icing at 230. I’d like to drop down lower.
5. The forecast says we’ll have freezing rain. We can expect hazardous run conditions.
6. We’re cancelling our mission. My co-pilot is incapacitated and is unable to continue.
Language knowledge:
- Structure
- Vocabulary
- Sounds in English
- Discourse

Other language skills:
- Reading
- Writing

Aviation technical knowledge
- Procedures
- Equipment
- Systems
- Places

Other skills & knowledge
- Memory
- Life experiences and knowledge
- Computer literacy
- Time management
- Understanding poor quality RTF recordings

Aviation job knowledge & experience
- Comprehension

Communication skills:
- Pronunciation
- Fluency
- Comprehension
- Discourse management

Air-ground communication skills and knowledge:
- Structure
- Vocabulary
- Pronunciation
- Fluency
- Discourse management
Task type 8

Examiner script

Read the following statement to the candidate.

We are going to talk about several aviation topics. I will ask you a number of questions. Answer by giving your ideas and opinions for each question.

Topic 1: Near misses

Read out each of the following, and prompt as required (3 minutes)

- Please describe what happens in a near miss.
- Can you provide examples of why near misses occur?
- How can technology help minimise near misses?
- How can near misses be prevented?
Task type 9

Examiner script

Part 2: Work and operations

Ask 4 or 5 of the following questions. Rephrase and prompt as necessary. Ask additional related questions if needed (4 minutes).

1. Describe an unusual situation you have experienced in your job and what you had to do to manage it?
2. How has the job of a pilot changed over the last 20 years?
3. What does the flight crew’s need to do if there is an unruly passenger onboard?
4. Tell me about why you decided to become a pilot.
5. Describe the most recent simulator training session you had. What did you practise and how useful was it for your job?
Task type 10

Part 2: Pilot and ATC role play

You will play the role of a pilot. The examiner is ATC. Talk to and respond to ATC using the prompts in the pictures. Your responses will be recorded.
Part 2: Pilot and ATC role play
You will play the role of a pilot. The examiner is ATC. Talk to and respond to ATC using the prompts in the pictures. Your responses will be recorded.
Tell the candidate that you are the supervisor and you are going to discuss the incident from Section 1. Ask the following questions:

a) Can you tell me what these pictures show and how they relate to what happened?
b) What happened during your flight this morning?
c) What do you think caused this to happen?
d) What did you have to do?
e) Do you think any poor decisions were made?
f) What suggestions do you have for how some airports could better manage similar incidents?
Task type 12

Section 2: Picture description

Choose one of the 15 pictures in the examiner envelope
Tell the candidate to study the picture for 30 seconds then describe it to you. Tell them they have about 2 minutes to complete their description.
Section 3 – ATC communications
You are the FO on a B777, callsign Red Cap 469. You will interact with ATC in FIVE different situations. Follow the instructions on the screen to either initiate or respond to ATC. ► (listen) ○ (speak and record)

Situation 1a: Singapore Approach clears you to land. Listen and readback the clearance.

Situation 1b: You are on approach into Singapore for RWY 02L and you have a gear unsafe warning for the nose-gear. Contact Approach.

Situation 2a: You are taxiing for departure on RWY 20R. You notice a Garuda 737 in front of you is leaking fuel from the left wing. Contact Tower.