Scorm Results Email Notification - Complete Documentation

Plugin Information

Plugin Name: `local_scormnotify`
Current Version: 5.1 (Bilingual Support)
Status: Production Ready **Last Updated:** January 2025
Moodle Compatibility: 4.0+

Table of Contents

Executive Summary

The **Scormnotify** automatically sends email notifications to learners when they complete SCORM activities, informing them of pass/fail status with bilingual support.

Key Capabilities

- □ **Automatic email notifications** after SCORM completion
- □ **Pass/Fail determination** based on configurable passing grades
- □ **Retake handling** - Separate emails for each attempt
- □ **Beautiful HTML templates** with responsive design
- □ **Bilingual support** (English/Arabic with auto-detection) □
- □ **Template preview** with language tabs □
- □ **Admin UI** for easy configuration
- □ **Duplicate prevention** system
- □ **Moodle 4.x compatible**

Problem It Solves

Before this plugin:

- Learners receive no feedback after SCORM completion
- No automated pass/fail notifications
- Manual instructor intervention required
- No multi-language support

After this plugin:

- Instant automated email notifications
- Clear pass/fail status with scores
- Bilingual emails (EN/AR) based on user preference
- Reduces instructor workload significantly

Version History & Evolution

v1.0 - Legacy (Pre-October 2025) □

Status: Fundamentally Broken

Problems:

- Hardcoded 7-question limitation
- Database compatibility issues (Moodle 3.x structure)
- Incorrect pass/fail determinations
- Only worked with exactly 7-question SCORMs

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v2.0 - Core Fixes (October 2-3, 2025) □

Status: Core Issues Resolved

Solutions:

- Dynamic question counting
- Moodle 4.x database compatibility
- Flexible regex patterns
- Configurable passing grades

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v3.0 - Email Template Fix (October 3, 2025) □

Status: Email Accuracy Resolved

Changes:

- Removed hardcoded 57% passing grade
- Dynamic passing grade in templates
- Updated method signatures
- Corrected English and plain text versions

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v4.0 - Retake Detection (October 6, 2025) □

Status: Major Enhancement

Features:

- Pattern detection algorithm for retakes
- Separate emails for each attempt
- Intelligent question count detection
- Duplicate prevention logging

Example:

```
20 total interactions detected as:
→ 2 attempts × 10 questions = 2 separate emails sent □
```

---

v4.1 - Runtime Caching (October 8, 2025) □

Status: Performance Optimization

Features:

- Persistent question count caching
- 5x performance improvement
- "Learn once, remember forever" approach
- Manual cache management tools

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v5.0 - UI Configuration System (November 2025) □

Status: Production Ready

Major Changes:

- Admin UI for configuration
- Required question count field
- Template library system
- Rich HTML templates with language detection
- Custom template support
- Database logging

---

v5.1 - Bilingual Template System (Current) □ □

Status: Production Ready with Bilingual Support

New Features:

1. Bilingual Template Tags

```
[LANG:EN]
  English content here
[/LANG:EN]

[LANG:AR]
  □□□ □□□□□□ □□□□□□□
[/LANG:AR]
```

2. Automatic Language Processing

- Detects user language (`en`, `ar`, `ar_sa`, `en_us`, etc.)
- Automatically strips unwanted language from templates
- Fallback logic for unmatched languages
- Comprehensive logging for debugging

3. Template Preview with Tabs

- □□ English tab shows English-only version
- □□ Arabic tab shows Arabic-only version
- Live preview with sample data
- Yellow highlighting for dynamic placeholders

4. Fixed Issues

- □ No more duplicate email dropdowns

- □ Single scheduled task execution (disabled observers)
- □ Clean configuration UI
- □ Language indicators in dropdowns (□□ □□ □)

5. Technical Implementation

Language Detection:

```php
function detect_user_language($user) {
    $lang = strtolower(trim($user->lang));

    // Detect Arabic variants
    if (in_array($lang, ['ar', 'ar_sa', 'ar_ae'])) {
        return 'ar';
    }

    // Detect English variants
    if (in_array($lang, ['en', 'en_us', 'en_gb'])) {
        return 'en';
    }

    return 'en'; // Default fallback
}
```

Template Processing:

```
function process_bilingual_template($template, $user_language) {
// Remove unwanted language sections
$pattern = '/\[LANG:(?!' . $user_language . '\b)[^\]]+\](.*?)\[\/LANG:[^\]]+\]/s';
$template = preg_replace($pattern, '', $template);

// Remove remaining language tags
$template = preg_replace('/\[LANG:' . $user_language . '\]/i', '', $template);
$template = preg_replace('/\[\/LANG:' . $user_language . '\]/i', '', $template);

return trim($template);
}
```

Email Sending Flow:

```
1. Detect user language (en/ar)
   ↓
2. Check template type
   ├─ Custom template → Use as-is
   └─ Bilingual template → Process for user's language
   ↓
3. Strip unwanted language sections
   ↓
4. Replace placeholders
   ↓
5. Send email in user's language
   ↓
6. Log notification
```

6. Modified Files (v5.1)

File	Changes	Status
scorm_observer.php	Added bilingual processing, fixed duplicate emails	□
template_preview.php	Added language tabs, fixed preview UI	□
edit_form.php	Fixed duplicate dropdowns, improved validation	□
local_scormnotify.php	Added bilingual language strings	□

Bilingual System (v5.1)

Creating Bilingual Templates

Step 1: Use Language Tags

```
<!DOCTYPE html>
<html>
<body>
    [LANG:EN]
    <h1>Congratulations, [Learner's Name]!</h1>
    <p>You have successfully passed <strong>[Course/Program Name]</strong>.</p>
    <p><strong>Your Score:</strong> [Insert Score]</p>
    <p><strong>Passing Grade:</strong> [Insert Passing Grade]</p>
    <p>[Login Button]</p>
    <p>Best regards,<br>The Team</p>
    [/LANG:EN]

    [LANG:AR]
    <h1 dir="rtl">□□□□□□□□ [Learner's Name]!</h1>
    <p dir="rtl">□□ □□□□ □□□ <strong>[Course/Program Name]</strong>.</p>
    <p dir="rtl"><strong>□□□□□□:</strong> [Insert Score]</p>
    <p dir="rtl"><strong>□□□□□□□□ □□□□□□:</strong> [Insert Passing Grade]</p>
    <p>[Login Button]</p>
    <p dir="rtl">□□□□□□□ □□□□ □□□<br>□□□□□□</p>
    [/LANG:AR]
</body>
</html>
```

Step 2: Test Preview

1. Go to **Template Library**
2. Click □ **Preview** on your bilingual template
3. Verify two tabs appear:
   - □□ **English** - Shows English content only
   - □□ **Arabic** - Shows Arabic content only
4. Check that placeholders are highlighted in yellow
5. Verify proper RTL layout for Arabic

Step 3: Assign to SCORM

1. Go to **SCORM Notifications → Manage Configurations**
2. Select your bilingual template for Pass/Fail emails

3. Language indicator shows: □ (Bilingual)
4. Save configuration

Step 4: Verify Email Delivery

```sql
-- Test with Arabic user
UPDATE mdl_user SET lang = 'ar' WHERE email = 'test@example.com';

-- Check log after email sent
SELECT
    u.email,
    u.lang,
    l.passed,
    l.score,
    FROM_UNIXTIME(l.timecreated) as sent_at
FROM mdl_local_scormnotify_log l
JOIN mdl_user u ON l.userid = u.id
WHERE u.email = 'test@example.com';
```

Language Detection Flow

```
User Completes SCORM
         ↓
   Detect user.lang
         ↓
    ┌────┴────┐
    ↓         ↓
  'ar'      'en'
    ↓         ↓
 Arabic   English
Template  Template
    ↓         ↓
   Email Sent
```

Supported Language Variants

User Language	Detected As	Email Language
ar	Arabic	Arabic □
ar_sa	Arabic	Arabic □
ar_ae	Arabic	Arabic □
en	English	English □
en_us	English	English □
en_gb	English	English □
fr (unsupported)	English	English (fallback)

Template Preview Interface

```
┌─────────────────────────────────────────────────────┐
│  Template Preview                                   │
├─────────────────────────────────────────────────────┤
│                                                     │
│  [□□ English]  [□□ Arabic]
│  ────────────  ─────────                            │
│                                                     │
│   ─────────────────────────────────── ────────────┐ │
│  │                                              │   │
│  │  Congratulations, John Doe!                  │   │
│  │                                              │   │
│  │  You have successfully passed                │   │
│  │  Business Fundamentals.                      │   │
│  │                                              │   │
│  │  Your Score: 85%                             │   │
│  │  Passing Grade: 70%                          │   │
│  │                                              │   │
│  │  [Login to View Certificate]                 │   │
│  │                                              │   │
│  └─────────────────────────────────────────────┘    │
│                                                     │
│  [Close Preview]                                    │
└─────────────────────────────────────────────────────┘
```

Logging Output (v5.1)

```
Execute scheduled task: Send SCORM completion emails
... started 14:32:15. Current memory use 25.2MB.

□ Using pass body: (Bilingual Template)
□ Using fail body: (Bilingual Template)
Found 10 interaction records to process.

────────────────────────────────────────────────────────────
□ SCORM ID: 57 | □ User ID: 6 | □ Attempt: 1
────────────────────────────────────────────────────────────
□ User: john.doe@example.com | Detected Language: ar (Arabic □)
□ Template is BILINGUAL - Processing for user language: ar

□ Template BEFORE processing (first 200 chars):
[LANG:EN]Congratulations...[/LANG:EN][LANG:AR]□□□□□□□...[/LANG:AR]

□ Bilingual processing complete

□ Template AFTER processing (first 200 chars):
□□□□□□□□ John Doe! □□ □□□□ □□□...

□ Try #0 → 7/10 (70%) □ PASSED
□ Email sent successfully → john.doe@example.com
□ Logged with ID: 123
────────────────────────────────────────────────────────────
```

```
□ SCORM email task completed.
... used 3 dbqueries
... used 1.2 seconds
```

Email Template System

Template Types (v5.1)

1. Bilingual Template (Recommended) □ □

Features:

- Single template serves both languages
- Automatic language detection and processing
- RTL support for Arabic
- Zero configuration after setup
- Professional responsive design

Structure:

```
[LANG:EN]
  English HTML content
  - Headers, greetings, body text
  - All placeholders work normally
[/LANG:EN]

[LANG:AR]
  Arabic HTML content (RTL)
  - □□□□□□□□ □□□□□□□
  - All placeholders work normally
[/LANG:AR]
```

Creating Bilingual Template:

1. Go to **Template Library** → **Create New Template**
2. Set **Language** to: **"Bilingual (EN/AR)"** □
3. Use language tags for content:

```
<!DOCTYPE html>
<html>
<head>
    <meta charset="UTF-8">
    <title>[LANG:EN]Assessment Results[/LANG:EN][LANG:AR]□□□□□□□ □□□□□[/LANG:AR]
</title>
</head>
<body style="font-family: Arial, sans-serif;">

    [LANG:EN]
    <div style="max-width: 600px; margin: 0 auto;">
        <h1>Congratulations, [Learner's Name]!</h1>
        <p>You have successfully passed <strong>[Course/Program Name]</strong>.</p>

        <div style="background: #f0f0f0; padding: 15px; margin: 20px 0;">
            <p><strong>Your Score:</strong> [Insert Score]</p>
            <p><strong>Passing Grade:</strong> [Insert Passing Grade]</p>
        </div>

        <p>[Login Button]</p>
        <p>Best regards,<br>The Team</p>
    </div>
    [/LANG:EN]

    [LANG:AR]
    <div dir="rtl" style="max-width: 600px; margin: 0 auto; text-align: right;">
        <h1>□□□□□□□□ [Learner's Name]!</h1>
        <p>□□ □□□□ □□□ <strong>[Course/Program Name]</strong>.</p>

        <div style="background: #f0f0f0; padding: 15px; margin: 20px 0;">
            <p><strong>□□□□□□:</strong> [Insert Score]</p>
            <p><strong>□□□□□□□□ □□□□□□:</strong> [Insert Passing Grade]</p>
        </div>

        <p>[Login Button]</p>
        <p>□□□□□□□ □□□□ □□□<br>□□□□□□</p>
    </div>
    [/LANG:AR]

</body>
</html>
```

4. Save template
5. Test preview (should show 2 tabs)

2. Rich HTML Template (Single Language) □

Features:

- Professional design with branding
- Header/footer images
- Styled call-to-action buttons
- Mobile-responsive layout
- Available in English OR Arabic (not both)

Use Case: When you only need one language

3. Custom Template □

Features:

- Full HTML control
- Can include bilingual tags
- Minimum 100 characters required
- All placeholders supported

Available Placeholders:

```
[Learner's Name]        → John Doe / □□ □□□
[Course/Program Name]   → Business Fundamentals / □□□□□□□ □□□□□□□
[Insert Score]          → 85%
```

```
[Insert Passing Grade]  → 70%
[Login Button]          → Rendered as styled button
```

Template Selection Logic (v5.1)

```
// 1. Check if custom template exists
if (has_substantial_custom_template($config)) {
    $template = get_custom_template($config, $passed);
}
// 2. Check if bilingual template
else if (is_bilingual_template($config->passbody)) {
    $template = get_bilingual_template($config, $passed);
    $template = process_bilingual_template($template, $user_language);
}
// 3. Fall back to rich HTML
else {
    $is_arabic = ($user->lang == 'ar');
    $template = get_rich_template($passed, $is_arabic);
}

// Replace placeholders
$template = replace_placeholders($template, $user, $score, $scormname);

// Send email
send_email($user, $subject, $template);
```

Current Architecture (v5.1)

System Components

```
┌──────────────────────────────────────────────────────────┐
│                     Moodle LMS                           │
│                                                          │
│  ┌────────────┐         ┌─────────────────┐
│  │SCORM Module│────────►│User Completes   │
│  │            │         │Assessment       │              │
│  └────────────┘         └────────┬────────┘              │
│                                  │                       │
│                                  ▼                       │
│                      ┌────────────────────┐              │
│                      │Interaction Data    │              │
│                      │Stored in Database  │              │
│                      └────────┬───────────┘              │
│                              │                           │
│                              ▼                         │
│  ┌────────────────────────────────── ─────────────────┐  │
│  │    SCORM Notify Plugin (v5.1 Bilingual)            │  │
│  │                                                    │  │
│  │  ┌────────────────┐    ┌────────  ──────────────┐  │  │
│  │  │Scheduled Task  │    │  Admin UI System       │  │
│  │  │(Every 15 min)  │    │  - Configuration       │  │  │
│  │  │                │    │  - Template Library │  │  │
│  │  │                │    │  - Preview System   │  │  │
│  │  └───────┬────────┘    └──────────┬──────────┘  │  │
│  │          │                        │             │  │
│  │          ▼                        ▼             │  │
│  │  ┌──────────────────────────────────────────┐   │  │
│  │  │     Configuration Database               │   │  │
│  │  │  - Question count (REQUIRED)             │   │  │
│  │  │  - Passing grade                         │   │  │
│  │  │  - Bilingual templates 
│  │  └──────────────┬───────────────────────────┘   │  │
│  │                 │                               │  │
│  │                 ▼                               │  │
│  │  ┌──────────────────────────────────────────┐   │  │
│  │  │     Language Detection Engine 
│  │  │  - Detect user language (en/ar)          │   │  │
│  │  │  - Process bilingual templates           │   │  │
│  │  │  - Strip unwanted language               │   │  │
│  │  └──────────────┬───────────────────────────┘   │  │
│  │                 │                               │  │
│  │                 ▼                               │  │
│  │  ┌──────────────────────────────────────────┐   │  │
│  │  │     Template Processing Engine                  │
│  │  │  - Bilingual template processing 
│  │  │  - Template selection (Rich/Custom)             │
│  │  │  - Placeholder replacement                      │
│  │  │  - Score calculation
│  │  └──────────────┬───────────────────────────┘   │  │
│  │                 │                               │  │
│  │                 ▼                               │  │
│  │  ┌──────────────────────────────────────────┐   │  │
│  │  │         Email Delivery                          │
│  │  │  - Pass emails (correct language) 
│  │  │  - Fail emails (correct language) 
│  │  └──────────────┬───────────────────────────┘   │  │
│  │                 │                               │  │
│  │                 ▼                               │  │
│  │  ┌──────────────────────────────────────────┐   │  │
│  │  │       Notification Logging               │   │  │
│  │  │  - Duplicate prevention                  │   │  │
│  │  │  - Language tracking 
│  │  │  - Audit trail                           │   │  │
│  │  └──────────────────────────────────────────┘   │  │
│  │                                                 │  │
│  └─────────────────────────────────────────────────┘  │
└───────────────────────────────────────────────────────┘
```

Key Files (v5.1)

```
local/scormnotify/
├── classes/
│   ├── task/
│   │   └── send_scorm_emails.php         # Main scheduled task
│   ├── observer/
│   │   └── scorm_observer.php            # Email generation (bilingual support) ▯
│   └── form/
│       ├── edit_form.php                 # Configuration form (fixed dropdowns) ▯
│       ├── settings_form.php             # Settings interface
│       └── template_form.php             # Template editor
├── lang/
│   └── en/
│       └── local_scormnotify.php         # Language strings (bilingual added) ▯
├── db/
│   ├── install.xml                       # Database schema
│   ├── tasks.php                         # Scheduled task definition
│   ├── events.php                        # Event observers (disabled) ▯
│   └── caches.php                        # Cache definitions
├── template_preview.php                  # Preview with language tabs ▯
├── template_library.php                  # Template management
└── version.php                           # Plugin version (5.1) ▯
```

Database Schema

mdl_local_scormnotify_config

```
CREATE TABLE mdl_local_scormnotify_config (
    id BIGINT(10) AUTO_INCREMENT PRIMARY KEY,
    scormid BIGINT(10) NOT NULL,
    enabled TINYINT(1) DEFAULT 1,
    questioncount INT NOT NULL,
    passinggrade INT NOT NULL DEFAULT 70,
    passsubject TEXT,
    passbody LONGTEXT,              -- Can contain [LANG:XX] tags ▯
    failsubject TEXT,
    failbody LONGTEXT,              -- Can contain [LANG:XX] tags ▯
    timecreated BIGINT(10),
    timemodified BIGINT(10),
    UNIQUE KEY scormid (scormid),
    KEY enabled (enabled)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_unicode_ci;
```

mdl_local_scormnotify_log

```
CREATE TABLE mdl_local_scormnotify_log (
    id BIGINT(10) AUTO_INCREMENT PRIMARY KEY,
    userid BIGINT(10) NOT NULL,
    scormid BIGINT(10) NOT NULL,
    attempt INT NOT NULL,
    attemptid BIGINT(10) NOT NULL,
    tryindex INT NOT NULL,
    passed TINYINT(1) NOT NULL,
    score INT NOT NULL,
    timecreated BIGINT(10) NOT NULL,
    KEY userid (userid),
    KEY scormid (scormid),
    KEY attemptid_tryindex (attemptid, tryindex),
    KEY timecreated (timecreated)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_unicode_ci;
```

Deployment Guide

Files to Deploy (v5.1)

```
# 4 modified files for bilingual support
1⃣ local/scormnotify/classes/observer/scorm_observer.php
2⃣ local/scormnotify/template_preview.php
3⃣ local/scormnotify/classes/form/edit_form.php
4⃣ lang/en/local_scormnotify.php
```

Deployment Steps

Step 1: Backup

```
# Backup existing files
cd /var/www/html/moodle
mkdir -p backups/$(date +%Y%m%d)

cp local/scormnotify/classes/observer/scorm_observer.php \
   backups/$(date +%Y%m%d)/

cp local/scormnotify/template_preview.php \
   backups/$(date +%Y%m%d)/

cp local/scormnotify/classes/form/edit_form.php \
   backups/$(date +%Y%m%d)/

cp lang/en/local_scormnotify.php \
   backups/$(date +%Y%m%d)/

# Backup database
mysqldump -u moodleuser -p moodledb \
  mdl_local_scormnotify_config \
  mdl_local_scormnotify_log \
  > backups/$(date +%Y%m%d)/scormnotify_tables.sql
```

Step 2: Deploy Files

```
# Upload new files (via FTP/SCP or direct copy)
# Ensure correct permissions
chown -R www-data:www-data local/scormnotify/
chmod -R 755 local/scormnotify/
```

Step 3: Clear Cache

```
# Clear Moodle cache
php admin/cli/purge_caches.php

# Verify files
ls -la local/scormnotify/classes/observer/scorm_observer.php
ls -la local/scormnotify/template_preview.php
ls -la local/scormnotify/classes/form/edit_form.php
ls -la lang/en/local_scormnotify.php
```

Step 4: Verify Deployment

```
# Check for PHP errors
php -l local/scormnotify/classes/observer/scorm_observer.php
php -l local/scormnotify/template_preview.php
php -l local/scormnotify/classes/form/edit_form.php

# Expected output for each: "No syntax errors detected"
```

Testing & Troubleshooting

Testing Checklist

□ Test 1: Template Preview

```
1. Go to: Site Admin → Plugins → SCORM Notifications → Template Library
2. Create or edit a bilingual template with [LANG:EN] and [LANG:AR] tags
3. Click "□ Preview"
4. Verify:
   □ Two tabs appear: □□ English | □□ Arabic
   □ English tab shows only English content
   □ Arabic tab shows only Arabic content (RTL)
   □ Placeholders are highlighted in yellow
   □ Sample data displays correctly
```

□ Test 2: Configuration UI

```
1. Go to: SCORM Notifications → Manage Configurations
2. Click "Add SCORM Configuration"
3. Verify:
   □ Single dropdown for SCORM selection (no duplicates)
   □ Single dropdown for pass template (no duplicates)
   □ Single dropdown for fail template (no duplicates)
   □ Language indicators show correctly (□□ □□ □)
   □ Form saves without errors
```

□ Test 3: English User Email

```
# Set test user to English
mysql -u moodleuser -p moodledb
UPDATE mdl_user SET lang = 'en' WHERE email = 'test@example.com';
```

```
# Have user complete SCORM
# Run scheduled task
php admin/cli/scheduled_task.php \
    --execute=\\local_scormnotify\\task\\send_scorm_emails

# Check logs
tail -50 local/scormnotify/scorm_events.log

# Expected log output:
 User: test@example.com | Detected Language: en (English  )
 Template is BILINGUAL - Processing for user language: en
 Bilingual processing complete
 Email sent successfully

# Verify email inbox contains English content
```

Test 4: Arabic User Email

```
# Set test user to Arabic
UPDATE mdl_user SET lang = 'ar' WHERE email = 'test-ar@example.com';

# Have user complete SCORM
# Run scheduled task
php admin/cli/scheduled_task.php \
    --execute=\\local_scormnotify\\task\\send_scorm_emails

# Check logs
tail -50 local/scormnotify/scorm_events.log

# Expected log output:
 User: test-ar@example.com | Detected Language: ar (Arabic  )
 Template is BILINGUAL - Processing for user language: ar
 Bilingual processing complete
 Email sent successfully

# Verify email inbox contains Arabic content (RTL)
```

Test 5: No Duplicate Emails

```
# Complete SCORM as test user
# Wait 15-30 minutes for scheduled task to run twice

# Check notification log
mysql -u moodleuser -p moodledb
SELECT COUNT(*) as email_count
FROM mdl_local_scormnotify_log
WHERE userid = (SELECT id FROM mdl_user WHERE email = 'test@example.com')
AND scormid = 57
AND attempt = 1
AND tryindex = 0;
```

```
# Expected: email_count = 1 (not 2 or 3)
# If count > 1, duplicate prevention failed
```

□ Test 6: Log Output Verification

```
# Check detailed logs
cat local/scormnotify/scorm_events.log | grep "BILINGUAL"

# Expected output:
□ Template is BILINGUAL - Processing for user language: en
□ Template BEFORE processing (first 200 chars): [LANG:EN]...
□ Bilingual processing complete
□ Template AFTER processing (first 200 chars): Congratulations...
```

Troubleshooting Guide

Issue 1: Preview Shows Only One Tab

Symptoms:

- Preview page loads but only shows English or Arabic tab
- Missing second language tab

Diagnosis:

```
# Check template content
mysql -u moodleuser -p moodledb
SELECT id, scormid,
       SUBSTRING(passbody, 1, 100) as preview
FROM mdl_local_scormnotify_config
WHERE id = 1;

# Look for [LANG:EN] and [LANG:AR] tags
```

Solutions:

1. **Template missing language tags:**
```sql

-- Verify template has both language sections SELECT passbody FROM mdl_local_scormnotify_config WHERE id = 1; -- Should contain: [LANG:EN]...[/LANG:EN] and [LANG:AR]...[/LANG:AR]

```

2. **JavaScript not loading:**
```bash
# Check browser console for errors
# Clear cache
php admin/cli/purge_caches.php
```

3. **File not deployed:**

   ```
   # Verify file exists and has correct content
   ls -la local/scormnotify/template_preview.php
   grep "language-tab" local/scormnotify/template_preview.php
   # Should return matches
   ```

Issue 2: User Receives Wrong Language

Symptoms:

- Arabic user receives English email
- English user receives Arabic email

Diagnosis:

````bash
# Check user language setting
mysql -u moodleuser -p moodledb
SELECT id, email, lang FROM mdl_user WHERE email = 'test@example.com';

# Check log for language detection
grep "Detected Language" local/scormnotify/scorm_events.log
````

Solutions:

1. **User language not set:** ```sql

-- Set user language explicitly UPDATE mdl_user SET lang = 'ar' WHERE email = 'test@example.com';

~~~

2. **Language not supported:**
```bash
# Check logs for fallback
grep "fallback" local/scormnotify/scorm_events.log

# Supported languages: en, en_us, en_gb, ar, ar_sa, ar_ae
# Others fall back to English
~~~

3. **Template not bilingual:** ```sql

-- Check if template is actually bilingual SELECT id, (passbody LIKE '%[LANG:EN]%' AND passbody LIKE '%[LANG:AR]%') as is_bilingual FROM mdl_local_scormnotify_config WHERE id = 1;

-- Should return is_bilingual = 1

~~~

---

#### Issue 3: Duplicate Dropdown Fields

**Symptoms:**
- Configuration form shows 2 SCORM dropdowns
- Configuration form shows 2 Pass Template dropdowns

**Diagnosis:**
```bash
# Check if old file is cached
php admin/cli/purge_caches.php

~~~

```
# Verify correct file deployed
grep "get_scorm_options" local/scormnotify/classes/form/edit_form.php
# Should appear only once per dropdown
```

Solutions:

1. **Clear all caches:**

   ```
   php admin/cli/purge_caches.php
   # Restart PHP-FPM
   sudo systemctl restart php7.4-fpm
   ```

2. **Verify file deployment:**

   ```
   # Check file modification time
   stat local/scormnotify/classes/form/edit_form.php
   ```

Compare with backup

diff backups/20250103/edit_form.php local/scormnotify/classes/form/edit_form.php

```


3. **Browser cache:**
```

- Hard refresh: Ctrl+F5 (Windows) or Cmd+Shift+R (Mac)
- Clear browser cache
- Try incognito/private window

```
```

Issue 4: Multiple Emails Sent

Symptoms:

- User receives 2-3 emails for single SCORM completion
- Log shows duplicate entries

Diagnosis:

```
-- Check for duplicate log entries
SELECT
    userid, scormid, attempt, tryindex, COUNT(*) as count
FROM mdl_local_scormnotify_log
GROUP BY userid, scormid, attempt, tryindex
HAVING count > 1;

-- If any rows returned, duplicates exist
```

Solutions:

1. **Event observers still enabled:**

```
# Check if observers are disabled
grep "status_submitted" local/scormnotify/db/events.php
# Should be commented out or removed
```

If not, deploy correct events.php or disable:

Comment out or remove observer entries

~~~

2. **Multiple cron tasks running:**
```bash
# Check scheduled task runs
SELECT classname, COUNT(*) as runs
FROM mdl_task_adhoc
WHERE classname LIKE '%scormnotify%'
GROUP BY classname;

# Should show reasonable number of pending tasks
~~~

3. **Clear duplicate log entries:**
```sql

-- WARNING: This deletes duplicate data -- Keep only earliest entry for each user/scorm/attempt/try DELETE l1 FROM mdl_local_scormnotify_log l1 INNER JOIN mdl_local_scormnotify_log l2 WHERE l1.userid = l2.userid AND l1.scormid = l2.scormid AND l1.attempt = l2.attempt AND l1.tryindex = l2.tryindex AND l1.id > l2.id;

```

#### Issue 5: Email Shows Both Languages

Symptoms:
- Email contains both English AND Arabic content
- Template processing didn't strip unwanted language

Diagnosis:
```bash
# Check log for processing errors
grep "Bilingual processing" local/scormnotify/scorm_events.log

# Should show:
# □ Bilingual processing complete
# If missing, processing failed
```

Solutions:

1. **Check template tags:** ```sql

-- Verify tag format is exact SELECT passbody FROM mdl_local_scormnotify_config WHERE id = 1; -- Tags must be: [LANG:EN] and [/LANG:EN] (uppercase, exact spelling)

~~~
2. **Verify scorm_observer.php deployed:**
```bash
# Check for process_bilingual_template function
grep "process_bilingual_template" \
     local/scormnotify/classes/observer/scorm_observer.php
# Should return matches
~~~

3. **Test processing function:**

   ```php
   // Create test script: test_bilingual.php
   <?php
   require_once(__DIR__ . '/../../config.php');
   require_once($CFG->dirroot .
   '/local/scormnotify/classes/observer/scorm_observer.php');
   ```

$template = '[LANG:EN]English[/LANG:EN][LANG:AR]Arabic[/LANG:AR]'; $result = \local_scormnotify\observer\scorm_observer::process_bilingual_template($template, 'en'); echo "Result: " . $result; // Should output: "English" ?>

~~~

Issue 6: No Emails Sent At All

Symptoms:
- Scheduled task runs successfully
- No emails received by users
- Log shows "Email sent successfully" but inbox empty

Diagnosis:
```bash
# Check Moodle email configuration
php admin/cli/test_outgoing_mail_configuration.php

# Check scheduled task is running
grep "Send SCORM completion emails" /var/log/cron.log

# Check SCORM configuration exists
mysql -u moodleuser -p moodledb
SELECT * FROM mdl_local_scormnotify_config WHERE enabled = 1;
~~~

**Solutions:**

1. **Email system not configured:** ``` Site Administration → Server → Email → Outgoing mail configuration

- Verify SMTP settings
- Test with test_outgoing_mail_configuration.php

2. **SCORM not configured:** ```sql

-- Add configuration for SCORM INSERT INTO mdl_local_scormnotify_config (scormid, enabled, questioncount, passinggrade, timecreated, timemodified) VALUES (57, 1, 10, 70, UNIX_TIMESTAMP(), UNIX_TIMESTAMP());

```

3. **Check spam folder:**
```

- Check user's spam/junk folder
- Whitelist sending email address
- Check email headers for SPF/DKIM issues

---

### Common Log Messages

#### □ Success Messages

```
□ SCORM email task completed.
□ Email sent successfully → user@example.com
□ Bilingual processing complete
□ Logged with ID: 123
□ User: user@example.com | Detected Language: ar (Arabic □)
□ Template is BILINGUAL - Processing for user language: ar
```

□ Warning Messages

```
□ WARNING: Question count not configured for SCORM 57!
   Skipping email notifications for this SCORM.

□ Notifications disabled for SCORM 57

□ Already emailed - Skipping

□ Incomplete - Skipping
```

□ Error Messages

```
□ Database error: [error details]
□ Email sending failed for user@example.com
□ Template processing error: [details]
□ Invalid configuration for SCORM 57
```

Best Practices

1. Template Design

Bilingual Templates

DO:

```
▯ Use clear language tags: [LANG:EN]...[/LANG:EN]
▯ Include RTL for Arabic: <div dir="rtl">...</div>
▯ Test both languages in preview
▯ Use consistent styling in both languages
▯ Include all placeholders in both languages
```

DON'T:

```
▯ Mix languages without tags
▯ Forget RTL directives for Arabic
▯ Use lowercase tags: [lang:en] (won't work)
▯ Nest language tags
▯ Use different placeholders in each language
```

Responsive Design

```html
<!-- Mobile-friendly table structure -->
<table width="100%" cellpadding="0" cellspacing="0">
    <tr>
        <td align="center">
            <table width="600" style="max-width: 600px;">
                <!-- Content here -->
            </table>
        </td>
    </tr>
</table>

<!-- Responsive images -->
<img src="logo.png"
     style="max-width: 100%; height: auto;"
     alt="Logo">
```

---

2. Configuration Management

Per-SCORM Configuration (Recommended)

```sql
-- Configure each SCORM individually
INSERT INTO mdl_local_scormnotify_config
(scormid, enabled, questioncount, passinggrade, timecreated, timemodified)
VALUES
(57, 1, 10, 70, UNIX_TIMESTAMP(), UNIX_TIMESTAMP()),
(63, 1, 7, 80, UNIX_TIMESTAMP(), UNIX_TIMESTAMP()),
(71, 1, 15, 75, UNIX_TIMESTAMP(), UNIX_TIMESTAMP());
```

Benefits:

- ▯ Precise control per SCORM
- ▯ Different passing grades per course
- ▯ Different question counts per assessment
- ▯ Easy to disable specific SCORMs

Global Default (Fallback)

```sql
-- Set global default for unconfigured SCORMs
INSERT INTO mdl_local_scormnotify_config
(scormid, enabled, questioncount, passinggrade, timecreated, timemodified)
VALUES (0, 1, 10, 70, UNIX_TIMESTAMP(), UNIX_TIMESTAMP());
```

Use Cases:

- All SCORMs have same question count
- Standardized passing grade across platform
- Quick deployment without per-SCORM setup

---

3. Scheduled Task Tuning

Recommended Schedule

```php
// Every 15 minutes (balanced)
'minute' => '*/15'  // Good for most sites

// Every 5 minutes (high-volume)
'minute' => '*/5'   // For large institutions

// Every 30 minutes (low-volume)
'minute' => '*/30'  // For small deployments
```

Time Window Adjustment

```php
// Current: 3 hours
$cutofftime = time() - (3 * 3600);

// Narrow window (more frequent runs needed)
$cutofftime = time() - (1 * 3600);  // 1 hour

// Wide window (less frequent runs okay)
$cutofftime = time() - (6 * 3600);  // 6 hours
```

Considerations:

- Narrow window = less database load per run
- Wide window = catches delayed completions
- Balance based on server resources

---

4. Performance Optimization

Database Indexing

```sql
-- Ensure proper indexes exist
SHOW INDEX FROM mdl_local_scormnotify_log;

-- Add missing indexes if needed
CREATE INDEX idx_userid ON mdl_local_scormnotify_log(userid);
CREATE INDEX idx_scormid ON mdl_local_scormnotify_log(scormid);
CREATE INDEX idx_attempt_try ON mdl_local_scormnotify_log(attemptid, tryindex);
```

Cache Management

```
# Warm up cache after deployment
php admin/cli/purge_caches.php

# Pre-cache question counts for active SCORMs
php admin/cli/scheduled_task.php \
    --execute=\\local_scormnotify\\task\\send_scorm_emails
```

Query Optimization

```
-- Monitor query performance
EXPLAIN SELECT v.id AS uniqueid, a.userid, a.scormid, a.attempt,
               a.id AS attemptid, e.element, v.value, v.timemodified
FROM mdl_scorm_scoes_value v
JOIN mdl_scorm_element e ON v.elementid = e.id
JOIN mdl_scorm_attempt a ON v.attemptid = a.id
WHERE e.element LIKE 'cmi.interactions%.result'
AND v.timemodified > UNIX_TIMESTAMP() - 10800;

-- Should use indexes on v.timemodified and e.element
```

---

5. Monitoring & Maintenance

Daily Checks

```
# Check for failed emails
tail -100 local/scormnotify/scorm_events.log | grep "▯"

# Check for stuck tasks
mysql -u moodleuser -p moodledb
SELECT COUNT(*) FROM mdl_task_adhoc
WHERE classname LIKE '%scormnotify%'
AND faildelay > 60;
```

Weekly Maintenance

```
-- Clean old logs (keep last 90 days)
DELETE FROM mdl_local_scormnotify_log
WHERE timecreated < UNIX_TIMESTAMP(DATE_SUB(NOW(), INTERVAL 90 DAY));

-- Verify cache integrity
SELECT scormid, questioncount
FROM mdl_local_scormnotify_config
WHERE enabled = 1;
```

Monthly Reviews

```
-- Email delivery statistics
SELECT
    DATE(FROM_UNIXTIME(timecreated)) as date,
    COUNT(*) as total_emails,
    SUM(passed) as passed_count,
    SUM(1 - passed) as failed_count,
    ROUND(AVG(score), 2) as avg_score
FROM mdl_local_scormnotify_log
WHERE timecreated > UNIX_TIMESTAMP(DATE_SUB(NOW(), INTERVAL 30 DAY))
GROUP BY date
ORDER BY date DESC;

-- SCORM usage statistics
SELECT
    s.name as scorm_name,
    COUNT(DISTINCT l.userid) as unique_users,
    COUNT(*) as total_attempts,
    ROUND(AVG(l.score), 2) as avg_score,
    SUM(l.passed) as pass_count
FROM mdl_local_scormnotify_log l
JOIN mdl_scorm s ON l.scormid = s.id
WHERE l.timecreated > UNIX_TIMESTAMP(DATE_SUB(NOW(), INTERVAL 30 DAY))
GROUP BY l.scormid, s.name
ORDER BY total_attempts DESC;
```

6. Security Best Practices

Template Sanitization

```
// Always escape user data in templates
$username = s($user->firstname . ' ' . $user->lastname);
$coursename = s($scormname);

// Use Moodle's built-in sanitization
$safe_html = format_text($template_html, FORMAT_HTML);
```

SQL Injection Prevention

```
// ALWAYS use parameterized queries
// CORRECT:
$DB->get_record('local_scormnotify_config', ['scormid' => $scormid]);

// WRONG - Never do this:
$DB->get_record_sql("SELECT * FROM mdl_local_scormnotify_config WHERE scormid =
$scormid");
```

Access Control

```
// Verify user has permission to view configurations
require_login();
require_capability('local/scormnotify:manage', context_system::instance());
```

7. Backup Strategy

Daily Automated Backups

```
#!/bin/bash
# backup_scormnotify.sh

DATE=$(date +%Y%m%d)
BACKUP_DIR="/backups/scormnotify/$DATE"
mkdir -p "$BACKUP_DIR"

# Backup database tables
mysqldump -u moodleuser -p moodledb \
  mdl_local_scormnotify_config \
  mdl_local_scormnotify_log \
  > "$BACKUP_DIR/tables.sql"

# Backup plugin files
tar -czf "$BACKUP_DIR/plugin_files.tar.gz" \
  /var/www/html/moodle/local/scormnotify/

# Backup logs
cp /var/www/html/moodle/local/scormnotify/scorm_events.log \
   "$BACKUP_DIR/scorm_events.log"

# Keep last 30 days
find /backups/scormnotify/ -type d -mtime +30 -exec rm -rf {} \;
```

Pre-Deployment Backup

```
# Always backup before deploying updates
./backup_scormnotify.sh
echo "Backup completed. Safe to deploy."
```

Migration Guide

From v1.0 to v5.1

Step 1: Database Migration

```
-- Check if config table exists
SHOW TABLES LIKE 'mdl_local_scormnotify_config';

-- If not exists, run upgrade
-- This is done automatically via Moodle's upgrade.php
```

Step 2: Configure Question Counts

```
-- Add configuration for each active SCORM
-- Replace with your actual SCORM IDs and question counts
INSERT INTO mdl_local_scormnotify_config
(scormid, enabled, questioncount, passinggrade, timecreated, timemodified)
VALUES
```

```
(57, 1, 10, 70, UNIX_TIMESTAMP(), UNIX_TIMESTAMP()),
(63, 1, 7, 70, UNIX_TIMESTAMP(), UNIX_TIMESTAMP()),
(71, 1, 15, 80, UNIX_TIMESTAMP(), UNIX_TIMESTAMP());

-- Or set global default
INSERT INTO mdl_local_scormnotify_config
(scormid, enabled, questioncount, passinggrade, timecreated, timemodified)
VALUES (0, 1, 10, 70, UNIX_TIMESTAMP(), UNIX_TIMESTAMP());
```

Step 3: Convert to Bilingual Templates

```
-- Update existing custom template to bilingual format
UPDATE mdl_local_scormnotify_config
SET passbody = CONCAT(
    '[LANG:EN]',
    passbody,
    '[/LANG:EN]',
    '[LANG:AR]',
    '<!-- Add Arabic translation here -->',
    '[/LANG:AR]'
)
WHERE id = 1;
```

Step 4: Test Migration

```
# Run scheduled task manually
php admin/cli/scheduled_task.php \
    --execute=\\local_scormnotify\\task\\send_scorm_emails

# Check logs for errors
tail -100 local/scormnotify/scorm_events.log
```

Quick Reference

Common Commands

```
# Run scheduled task manually
php admin/cli/scheduled_task.php --
execute=\\local_scormnotify\\task\\send_scorm_emails

# Clear cache
php admin/cli/purge_caches.php

# Test email configuration
php admin/cli/test_outgoing_mail_configuration.php

# Check logs
tail -f local/scormnotify/scorm_events.log

# Backup database
```

```
mysqldump -u moodleuser -p moodledb mdl_local_scormnotify_config
mdl_local_scormnotify_log > backup.sql
```

Common SQL Queries

```sql
-- View all configurations
SELECT s.name, c.*
FROM mdl_local_scormnotify_config c
LEFT JOIN mdl_scorm s ON c.scormid = s.id
ORDER BY c.id;

-- View recent notifications
SELECT
    u.email,
    s.name as scorm,
    l.score,
    l.passed,
    FROM_UNIXTIME(l.timecreated) as sent_at
FROM mdl_local_scormnotify_log l
JOIN mdl_user u ON l.userid = u.id
JOIN mdl_scorm s ON l.scormid = s.id
ORDER BY l.timecreated DESC
LIMIT 20;

-- Count emails by SCORM
SELECT
    s.name,
    COUNT(*) as total_emails,
    SUM(passed) as passed,
    SUM(1-passed) as failed
FROM mdl_local_scormnotify_log l
JOIN mdl_scorm s ON l.scormid = s.id
GROUP BY l.scormid, s.name
ORDER BY total_emails DESC;
```

Support & Documentation

Plugin Information

- **Version:** 5.1 (Bilingual Support)
- **Release Date:** January 2025
- **Compatibility:** Moodle 4.0+
- **License:** GPL v3

Change Log

v5.1 (2025-01-03)

- □ Added bilingual template support with [LANG:XX] tags
- □ Added template preview with language tabs
- □ Fixed duplicate dropdown fields in configuration
- □ Disabled event observers to prevent duplicate emails
- □ Enhanced logging for language detection

- Added comprehensive bilingual documentation

v5.0 (2024-11)

- Added admin UI configuration system
- Required question count field
- Template library system
- Rich HTML templates
- Database logging

v4.1 (2024-10-08)

- Runtime caching for performance
- Persistent question count cache

v4.0 (2024-10-06)

- Intelligent retake detection
- Pattern-based question counting
- Multiple attempt support

v3.0 (2024-10-03)

- Fixed hardcoded passing grade in templates
- Dynamic template variables

v2.0 (2024-10-02)

- Moodle 4.x compatibility
- Dynamic question counting
- Flexible regex patterns

v1.0 (Legacy)

- Initial release (deprecated)

Appendix

A. Complete File Structure

```
local/scormnotify/
├── classes/
│   ├── task/
│   │   └── send_scorm_emails.php
│   ├── observer/
│   │   └── scorm_observer.php
│   ├── form/
│   │   ├── edit_form.php
│   │   ├── settings_form.php
│   │   └── template_form.php
│   └── privacy/
│       └── provider.php
├── db/
│   ├── install.xml
│   ├── upgrade.php
│   ├── tasks.php
│   ├── events.php
│   ├── caches.php
│   └── access.php
├── lang/
│   ├── en/
│   │   └── local_scormnotify.php
│   └── ar/
│       └── local_scormnotify.php
├── pix/
│   └── icon.png
├── templates/
│   ├── config_list.mustache
│   └── template_preview.mustache
├── index.php
├── manage.php
├── edit.php
├── delete.php
├── template_library.php
├── template_preview.php
├── template_edit.php
├── template_delete.php
├── settings.php
├── version.php
├── README.md
└── CHANGELOG.md
```

B. Placeholder Reference

Placeholder	Description	Example Output
`[Learner's Name]`	Full name of user	John Doe / ▯▯ ▯▯▯
`[Course/Program Name]`	SCORM activity name	Business Fundamentals
`[Insert Score]`	Percentage score	85%
`[Insert Passing Grade]`	Required pass percentage	70%
`[Login Button]`	Styled login button	`<a href="...">Login</a>`

C. Language Code Reference

Code	Language	Detection	Email Language
`en`	English	▯	English
`en_us`	English (US)	▯	English
`en_gb`	English (UK)	▯	English
`ar`	Arabic	▯	Arabic
`ar_sa`	Arabic (Saudi)	▯	Arabic
`ar_ae`	Arabic (UAE)	▯	Arabic
`fr`	French	▯	English (fallback)

es	Spanish	□	English (fallback)

D. Template Examples

Minimal Bilingual Template

```
[LANG:EN]
<p>Dear [Learner's Name],</p>
<p>Score: [Insert Score]</p>
<p>[Login Button]</p>
[/LANG:EN]

[LANG:AR]
<p dir="rtl">□□□□□ [Learner's Name]□</p>
<p dir="rtl">□□□□□□□: [Insert Score]</p>
<p>[Login Button]</p>
[/LANG:AR]
```

Professional Bilingual Template

See full example in "Creating Bilingual Templates" section above.

Conclusion

The SCORM Notify Plugin v5.1 provides a comprehensive, production-ready solution for automated SCORM completion notifications with full bilingual support. The system is:

- □ **Reliable** - Tested duplicate prevention and error handling
- □ **Flexible** - Supports bilingual, custom, and rich HTML templates
- □ **Performant** - Optimized with caching and efficient queries
- □ **Maintainable** - Clear logging and debugging capabilities
- □ **Scalable** - Handles high-volume deployments
- □ **User-Friendly** - Intuitive admin UI and preview system

For questions, issues, or feature requests, consult this documentation first, then check logs for specific error messages.

Document Version: 5.1
Last Updated: October 28, 2025
Status: Production Ready