Comprehensive Report on QTI Including `text2qti` and Moodle XML

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1 What is QTI?

QTI (Question & Test Interoperability) is a standard defined by 1EdTech (formerly IMS Global) for representing, exchanging, and reporting assessments—ranging from individual items to full tests and student responses. It ensures consistency and preserves rich structures like scoring logic, feedback, branching, multimedia, and accessibility metadata across platforms.

Key Features:

- Structured and machine-readable XML

- Adaptive testing (via branching logic)

- Embedded scoring and feedback

- Accessibility support (e.g., screen readers, alt text)

- Metadata tagging (standards, difficulty)

- Supports importing/exporting between certified systems

Citation: `https://www.imsglobal.org/spec/qti/v3p0/oview`

2 QTI Versions

- **QTI 1.x** — Early versions, simple structure

- **QTI 2.1 (2012)** — Widely adopted; supports full test structure, feedback, outcomes

- **QTI 2.2 (2015)** — HTML5/ARIA compatibility improvements

- **QTI 3.0 (2022)** — Unified data model, modern web markup, strong accessibility and adaptivity

Reference: `https://www.1edtech.org/standards/qti/index`

3 How QTI Works

QTI content is packaged in a .zip archive that contains:

- `assessmentTest.xml` — Defines the test

- `assessmentItem.xml` — Individual questions with prompts, options, correct answers

- Optional: media files, metadata, scoring profiles

The XML schema includes:

- `responseDeclaration` — Expected answers

- `itemBody` — What the student sees

- `responseProcessing` — Scoring logic

Example snippet:

```
<assessmentItem identifier="item1">
  <responseDeclaration identifier="RESPONSE">
    <correctResponse><value>ChoiceA</value></correctResponse>
  </responseDeclaration>
  <itemBody>
    <choiceInteraction>
      <prompt>What is the capital of France?</prompt>
      <simpleChoice identifier="ChoiceA">Paris</simpleChoice>
```

4 QTI vs Moodle XML

Moodle does not support QTI. It has its own XML format for quiz content which differs from QTI.

Moodle XML

- Native to Moodle

- Supports rich question types and feedback

- Limited portability — not supported in other LMSs

QTI

- Platform-independent

- Supports adaptivity, branching logic

- Widely supported in Canvas, OpenOLAT, etc.

Citation: `https://docs.moodle.org/en/Moodle_XML_format`

5 `text2qti`

`text2qti` is a command-line tool created by Geoffrey M. Poore to convert quizzes written in plain text or Markdown into QTI packages. It is primarily designed for Canvas LMS, but produces standard QTI-compliant output.

Features

- Multiple choice, numeric, short answer

- Markdown formatting and LaTeX math

- Feedback, grouping, and shuffling

- Outputs a .zip file with valid QTI structure

Usage example:

```
text2qti simple_mcq.txt --pandoc-mathml
```

    Sample input file contents:

```
1.  What is 2+3?
a)  6
b)  1
*c) 5
```

Reference: https://github.com/gpoore/text2qti

6 Integration Workflow

1. Author content using `text2qti` in Markdown

2. Generate QTI zip packages

3. Import into a QTI-compliant LMS (e.g., OpenOLAT, Canvas)

4. Optionally convert QTI to Moodle XML via third-party converters if needed

Converter reference: https://runmodule.com/2025/02/27/quiz-question-formats/

7 Conclusion

QTI provides a robust, interoperable way to manage assessments across learning systems. Compared to Moodle XML, it offers better portability, adaptivity, and metadata support. Tools like `text2qti` democratize quiz creation by simplifying authoring and packaging.

References

- https://www.imsglobal.org/spec/qti/v3p0/oview

- https://www.1edtech.org/standards/qti/index

- https://docs.moodle.org/en/Moodle_XML_format

- https://github.com/gpoore/text2qti

- https://runmodule.com/2025/02/27/quiz-question-formats/

- https://support.inspera.com/hc/en-us/articles/360051649971-QTI-conversion-from-C