

Institution 2

Use Case 1.0 Item Development

JISC Digital Repositories Programme

Actors: Administrator, author, item bank

Summary:

Q writing workshops where medical professionals are invited to attend from a list of relevant contacts. Workshops are held around the UK twice a year and are occasionally specialized. The medical questions are hand written and are required to be typed into the bank where an ID number is created.

Trigger state:

All workshops are planned at the beginning of each academic year.

Common course of events:

1. Administrator runs a query on authors in bank to produce list of attendees. Parameters of the search would include all authors of a specific medical school and to exclude anyone who has specified not to be contacted.
2. Email to author list inviting to attend workshop.
3. Confirmation received of author attendance.
4. Finalised list of authors compiled.
5. Workshop details including venue, date and time of workshop, attendees and medical school added to bank.
6. Updated list of confirmed author attendees added to bank.
7. Following a workshop, question templates are archived in storage cabinets by administrator.
8. Each question is allocated an ID number created to reflect date of workshop, author number, number of questions written by this author on this date.
9. General administration processes performed e.g. alphabetising answer options, abbreviation and spelling/grammar checks.
10. All elements of the question are typed into the database including theme, focus, stem, lead in, answers, correct answer, feedback.
11. At end of question typing all question records are checked for spelling.
12. Thank you letters and certificates sent to authors.
13. Feedback forms processed/stored in .xls sheet.

Extensions:

- 2a. Letter sent out to author list inviting to attend workshop, in the event that email address is incomplete.
- 3a. In the event of incorrect contact details held in bank, contact details updated if possible, or removed.
- 6a. In the event that author details are not currently stored, add author details to bank.
- 7a. Questions received by email
- 9a. One or more of theme, focus, lead in missing. Administrator's best guess entered.
- 9b. One or more of answers, stem, correct answer, feedback missing. Question marked as unfinished.
Particular field contains a marker to alert location of problem, marker is "?". Where feedback is missing, cell defaults to read "REQUEST FEEDBACK".
- 9c. Administrator cannot read one or more words within question. Look up with online dictionary and/or Google.
- 9d. Cannot store symbols in current database. Notes on formatting are included with the question record specifically to merge out for examinations administrator attention.
- 9e. Normal range not included within a stem where a normal range is required, or, normal range given by author is different to agreed normal range. Administrator looks up normal range on a list of agreed normal ranges.

Post-conditions:

Questions ready to be quality assured.

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Date:

20th December 2005

Updated 2nd May 2006

Institution 2

Use Case 2.0 Quality Assurance

JISC Digital Repositories Programme

Actors: Administrator, question bank manager, review team, item bank

Summary:

Before questions can be used in an examination, the questions need to be quality assured by experienced academics and clinicians. The review requirements are ascertained by organising all review meetings in advance which enables the number of questions required per meeting to be generated per month (i.e. 40 MCQs or 10 EMQs with approx 5 stems each).

Each review team consists of 4-6 people, both from academic and clinical backgrounds, there are designated team members though they may not all be able to attend every meeting.

Trigger state:

Questions have been entered into question bank.

Common course of events:

1. Administrator ascertains current numbers of questions in the bank and compares them to each monthly requirements.
2. Questions are selected against a number of criteria (EMQ >5 completed stems, EMQ & MCQ cannot be reviewed at the medical school that the question was created at).
3. Questions are checked by administrator for spelling, punctuation and grammar.
4. Questions are added to the pre-review database.
5. Questions are passed to the project manager for pre-review.
6. Questions are pre-reviewed for spelling as well as content and completeness. Question bank manager adds comments to questions as necessary.
7. Administrator then uploads all questions within pre-review database into the bank.
8. Questions are exported to the reviewer database which is then emailed to the review team.
9. The review team assesses the content of the questions and makes amendments to questions where necessary. Questions are rated as either easy/moderate/difficult. Questions are then either accepted/rejected.
10. Questions are emailed back to the administrator.
11. Questions undergo general administration processes e.g. alphabetizing, checked for spelling, grammar and punctuation and added into the question bank.

Extensions:

- 8a. In the event that review team are unable to receive questions for review via email, questions are sent out on a USB memory stick via post.
- 9a. If questions are rejected, review team must specify the reason for this from a drop-down list within the reviewer database.

Post-conditions:

If accepted, questions are ready to be used in examinations.

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Institution 2

Use Case 3.0 Item Selection

JISC Digital Repositories Programme

Actors: Administrator, Medical School administrator, item bank

Summary:

Medical Schools hold a number of exams throughout the academic year, during which they may use banked questions. There is a limit to the number of questions that the Medical Schools can use, as follows: 200 Extended Matching Questions (EMQ) and 250 Multiple Choice Questions (MCQ). The Medical Schools are sent 150% of their question requirements from which they make their selection.

Trigger state:

Questions have been entered into the bank, reviewed and accepted.

Common course of events:

1. Administrator contacts all medical schools via email at the end of the academic year to confirm exam dates for the forthcoming year.
2. Upon receipt, exam dates are entered into bank.
3. A month before the exam or a month before the exam board deadline, administrator contacts the medical school to confirm the number and question format (i.e. MCQ, EMQ) required.
4. Administrator runs a report from item bank of all available questions for particular medical school ensuring questions used in previous years exam is not included.
5. 150% of required questions are provided in a Selection Form, (details: question ID theme, focus, number of times question used at all medical schools) which is then sent electronically to the medical school.
6. Medical school sends back selection form indicating which questions they would like to use.
7. Questions that have been selected are then merged into two separate Word documents: one document details question ID, theme, focus, stem, lead in, answer options, correct answer, full answer and feedback. The other document details the same with the addition of format notes which gives any specific formatting notations.
8. Question Word documents sent to medical school admin via email.

Extensions:

- 1a. In the event of incorrect email address, letters are sent out to medical schools.
- 3a. An institution may contact the administrator requesting questions earlier than agreed.
- 6a. If any errors are discovered with any of the items, the medical school administrator contacts the administrator to alert them of the error, so the question can be removed, correct the question and resend it or if requested send out a new question.

Post-conditions:

The exam paper can be created.

Assumptions:

The common course of events as described above are all subject to timely responses from the Medical Schools, in the event of tardy responses, this would cause delays to the processes.

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22nd December 2005
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Institution 2

Use Case 4.0 Exam Delivery

JISC Digital Repositories Programme

Actors: Administrator, Medical School administrator, question bank manager, students, item bank

Summary:

Medical Schools hold a number of exams throughout the academic year, during which they may use banked questions. The administrator provides questions to the relevant Medical School administrator making sure the individual ID, theme and foci are still attached to the questions for tracking purposes.

Trigger state:

Questions have been entered into the bank, reviewed and accepted.

Common course of events:

1. The Medical School administrator puts together the paper using the selected questions..
2. Confirmation sent via email from Medical School to the administrator, using an Inclusion form (.doc) which confirms which questions will be used in the exam.
3. The administrator uses the Inclusion form to mark in the bank by ticking inclusion field, which questions have been selected for use in the relevant exam.
4. Students undertake the exam
5. Medical Schools send of copy of exam paper and a linkage form (.doc) to the administrator to indicate exactly which questions were used in the exam.
6. The administrator uses linkage form to mark questions in the bank as having been used, this is indicated by adding exam paper number alongside the tick-field which confirms usage of question.
7. Medical School administrator sends via email an MS Excel sheet to the administrator detailing each individual students response for all questions within the exam. This data is analysed by question bank manager and added to the bank.

Post-conditions:

The question performance data is ready for use in research.

Assumptions:

The common course of events as described above are all subject to timely responses from the Medical Schools, in the event of tardy responses, this would cause delays to the processes.

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Institution 2

Use Case 5.0 Results Analysis

JISC Digital Repositories Programme

Actors: Question bank manager, database officer, item bank

Summary:

Once questions have been used in exams their performance data can be fed back into the system and used to illustrate question, examination and student performance.

Trigger state:

Question and student performance data has been returned to the question bank.

Common course of events:

1. Data is extracted from the database and is converted into a suitable format to allow analysis (i.e. facility and discrimination scores for each individual question) to be performed by the database officer.
2. Question performance is analysed, as well as exam performance and individual student performance by question bank manager.
3. Any questions performing poorly (i.e. with a negative discrimination score) are withheld and are flagged for re-review.
4. Performance data is used in author feedback which is disseminated as and when appropriate.

Post-conditions:

Research data is created and questions can be either improved or discarded.

Author:

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