

# Users' Guide R-Type Item (EMQ) Writing Wizard for the Intranet

C. Hazlett, S. Yip, G. Choy, J. Ware  
H.K. Ng, S.M. Kumta, E.A. Nelson, P.S.B. Lai

Developed with the support of the University Grants Committee,  
Hong Kong Government

**Users' Guide**  
**R-type Item (EMQ) Writing Wizard for the Intranet**

**International Database for Enhanced Assessments and Learning**

**C. Hazlett, S. Yip, G. Choy, J Ware**  
**H.K. Ng, S.M. Kumta, E.A. Nelson, P.S.B. Lai**

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 **大學教育資助委員會**  
**University Grants Committee**

## Preface

Development of the R-type Item Writing Wizard was made possible with the support of a Teaching Development Grant (TDG) from The Chinese University of Hong Kong (CUHK) and the Hong Kong government's University Grants Commission (UGC).

The concept and design for an R-type item writing wizard was developed by J Ware and C Hazlett by adapting Case and Swanson's<sup>1</sup> item writing templates to an interactive, computer-based environment. We gratefully acknowledge that some initial themes and many of the lead-in questions in the virtual templates are based on the centennial work by Case and Swanson and that the National Board of Medical Examiners has kindly permitted their use by the IDEAL Consortium.

An important feature of the wizard is its capability to add additional disciplines or systems, topics, themes and lead-in questions. As a user adds these, the wizard's capability as an item writing aid increases, enabling the user to be increasingly efficient in developing well constructed R-type items (i.e., items that measure higher cognitive skills).

Although the wizard's initial disciplines, themes, topics and lead-in questions are suited for use in a medical education programme, users from other disciplines can also tailor the entries to reflect their respective fields of study. Thus, the wizard's use is widely generalizable.

Based on the research associated with its development, one will find that both students and teaching staff are equally capable in using this wizard. Having both groups use the wizard will enable a school to rapidly build high quality formative and summative assessment banks. In achieving the latter, students will have more opportunity for self learning and teaching staff will be able to more effectively direct desired student learning with the use of high quality assessments.

The system design and programming for the R-type Item Writing Wizard for PCs and for the Intranet were done by S. Yip and G. Choy. Related manuals were written by C. Hazlett and G. Choy. Suggestions for improving the wizard or this manual are welcome. Email the IDEAL Coordination Centre at [secretariat@hkwebmed.org](mailto:secretariat@hkwebmed.org)

TDG Principal and Co-Investigators

H.K. Ng, C.B. Hazlett, J. Ware, E.A. Nelson, S.M. Kumta, P.S.B. Lai

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<sup>1</sup> Case S.M. & Swanson D.B. (2001). *Constructing written test questions for the basic and clinical sciences*. Philadelphia: National Board of Medical Examiners.

# R-Type Wizard Users' Guide (Intranet version)

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# Chapter 1

## Introduction

### 1.1 Background

The format of R-type items (also referred to as Extended Matching Questions [EMQ])<sup>2</sup> is suited to assessing medical students' scientific & clinical reasoning capabilities. However, often basic medical science teachers have difficulty assessing their students' reasoning abilities within a clinically relevant context. In addition, both basic and clinical science teachers often complain that composing a well developed R-type item is difficult and time-consuming.

This item writing wizard, a MS Word macro, was developed to assist teachers to generate quality R-type items more easily & quickly.

### 1.2 Format of an R-type Item

- Discipline (or System)
- Topic
- Theme
- Options (any number from 3 to 26)
- Lead-in Question
- One or more vignettes (scientific or clinical scenarios for which the candidate must select one option as the best answer for each vignette)

### 1.3 Minimal Requirements for the Wizard

Intranet version for this wizard requires a server with IDEAL Intranet installed. If one wishes to upload any composed items to IDEAL formative bank, IDEAL's non-restricted bank must also be on the server.

A separate manual has been produced for the wizard's PC version. The R-type Item Writing Wizard for PCs requires MS Word 97 or later installed on the PCs. Option sets are stored in text file labeled ROptionSet.txt.

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<sup>2</sup> Throughout this manual, the term 'R-type item' is used in lieu of 'extended matching question' although these terms are synonymous.

## **1.4 Organization of this Manual**

This manual addresses how to (i) install the wizard (Chapter Two), (ii) use the wizard to quickly create R-type items (Chapter Three), (iii) expand the Wizard's capability as a writing aid (Chapter Four), and (iv) access the wizard's within-program files and guidelines (Chapter Five).

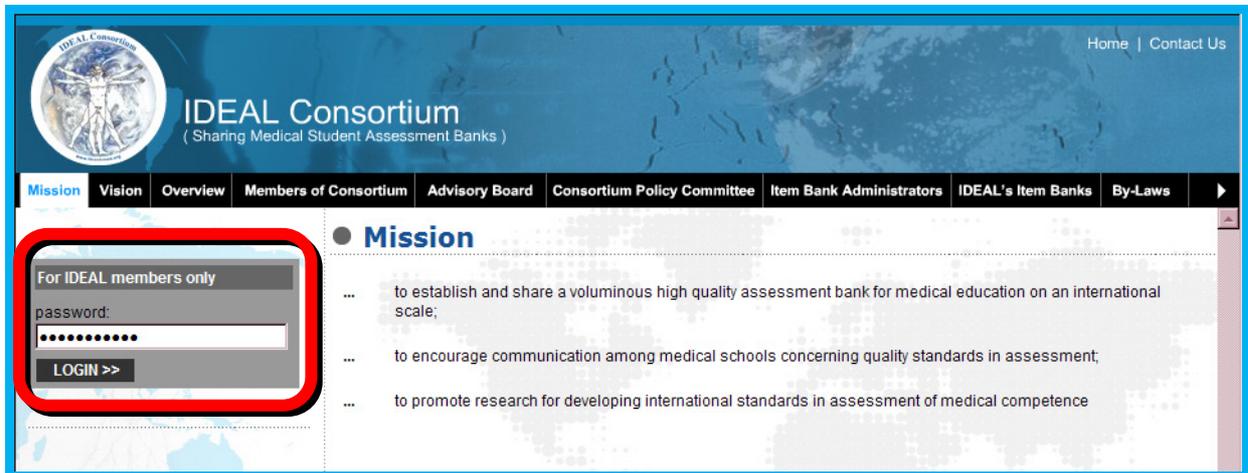
## Chapter 2

### Getting Started

#### 2.1 Installing the Wizard on a Server

The wizard is available by downloading a patch to update IDEAL Intranet. Go to the following URL: <http://www.hkwebmed.org/>.

The Wizard is accessible for all students and staff members in the Faculty of Medicine in the Chinese University of Hong Kong (CUHK) and a medical school that is a member of the IDEAL Consortium.



1. To login you will need a password which is available from the medical school's Item Bank Administrator.



2. Scroll down the page to the Intranet IIDEAL 4.1. Click the link 'Upgrade to latest IIDEAL 4.1'.

<b>Intranet IIDEAL 4.1 (Last update: 20 Nov, 2007)</b> This section is for Administrator of Servers only !	
(G) Download IIDEAL 4.1 SetupCD (Unless installing a completely new IDEAL Intranet system, do NOT Uninstall iidealSetup program. To upgrade, do (H).)	<a href="#">Right click to Download IIDEALSetup 4.1 Setup CD (ZIP file 41 meg)</a>
(H) Upgrade to the latest version of IIDEAL 4.1	<a href="#">Upgrade to latest IIDEAL 4.1</a>
(I) Question and Answers on IIDEAL Server	<a href="#">FAQ on IIDEAL Server</a>

3. Click the link 'ideal41Patch.exe'

IDEAL Consortium - Windows Internet Explorer

http://www.hkwebmed.org/idealweb/homeindex.html

IDEAL Consortium  
( Sharing Medical Student Assessment Banks )

Mission Vision Overview Members of Consortium Advisory Board Consortium Policy Committee Item Bank Administrators IDEAL's Item Banks By-Laws

**Software Download & Upgrades**

**Intranet IDEAL (Last updated 15 Aug, 2007)**  
Upgrade to IIDEAL 4.1 Bugs found/Enhancements and patches

**1. Updating the IDEAL web server:**

**(a) To update files on the Web server:**

Click to download or open the following exe file: [ideal41Patch.exe](#) (Download...open...unzip... may take some time to open)

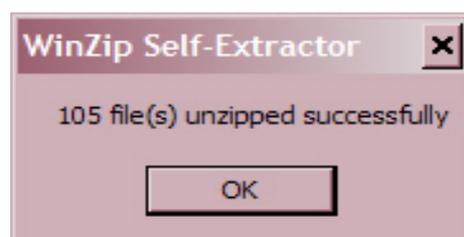
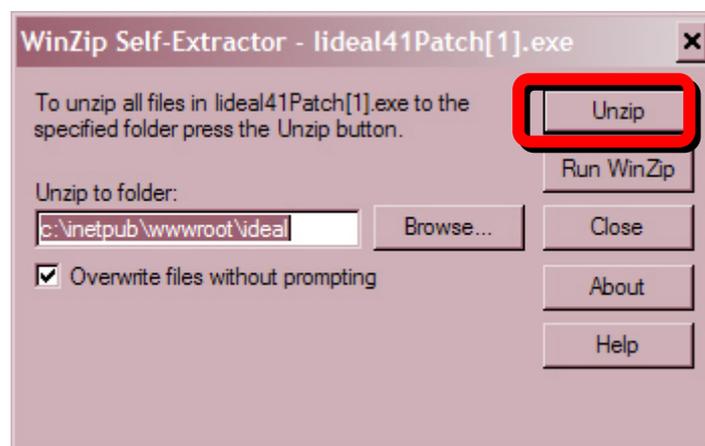
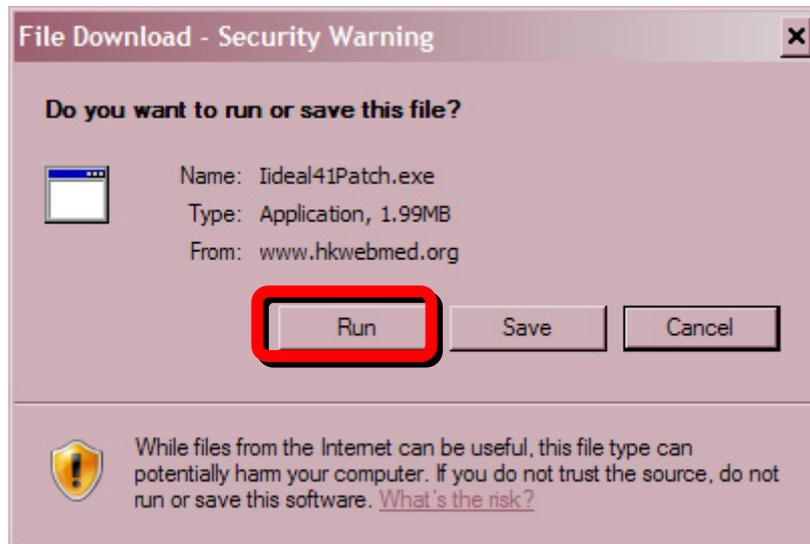
When extracting the files from the Zip, navigate to the directory where IIDEAL is installed (e.g. inetpub/wwwroot/ideal), then simply overwrite the files that were previously installed.

**(b) If your sever already has the following file, you Do Not have to do the following:**

Click to download the following DLL: [RTFZlib.dll](#) (last modified on: Nov/1/2005)

When downloading, navigate to the directory C:\windows\system32 Or C:\winnt\system32, then simply overwrite the file 'rtfzlib.dll' that was previously installed. (You may have to restart the system before you can overwrite.)

4. Click the button 'Run' and then 'Unzip' after specifying the directory where IDEAL is to be installed (e.g., inetpub/wwwroot/ideal). If the file has been unzipped successfully, click the button 'OK'.



## 2.2 Launching the R-type Wizard for the Intranet

1. Open Internet Explorer and enter the URL where the IDEAL Intranet is located. At CUHK, for example, the URL is <http://ideal.med.cuhk.edu.hk>. For all other IDEAL members ask your Item Bank Administrator or use IDEAL's backup server by entering <http://137.189.151.235/ideal> in Internet Explorer.
2. Log into IDEAL Intranet by entering your signon ID and password. Specify the database as 'Training'.

**IDEAL Consortium**  
www.hkwmcd.org

**IDEAL - HK (4.1)<sup>TM</sup> (Intranet Version)**

Please use IE only : [Click here to test](#)

Database : Training

Login ID : cohort

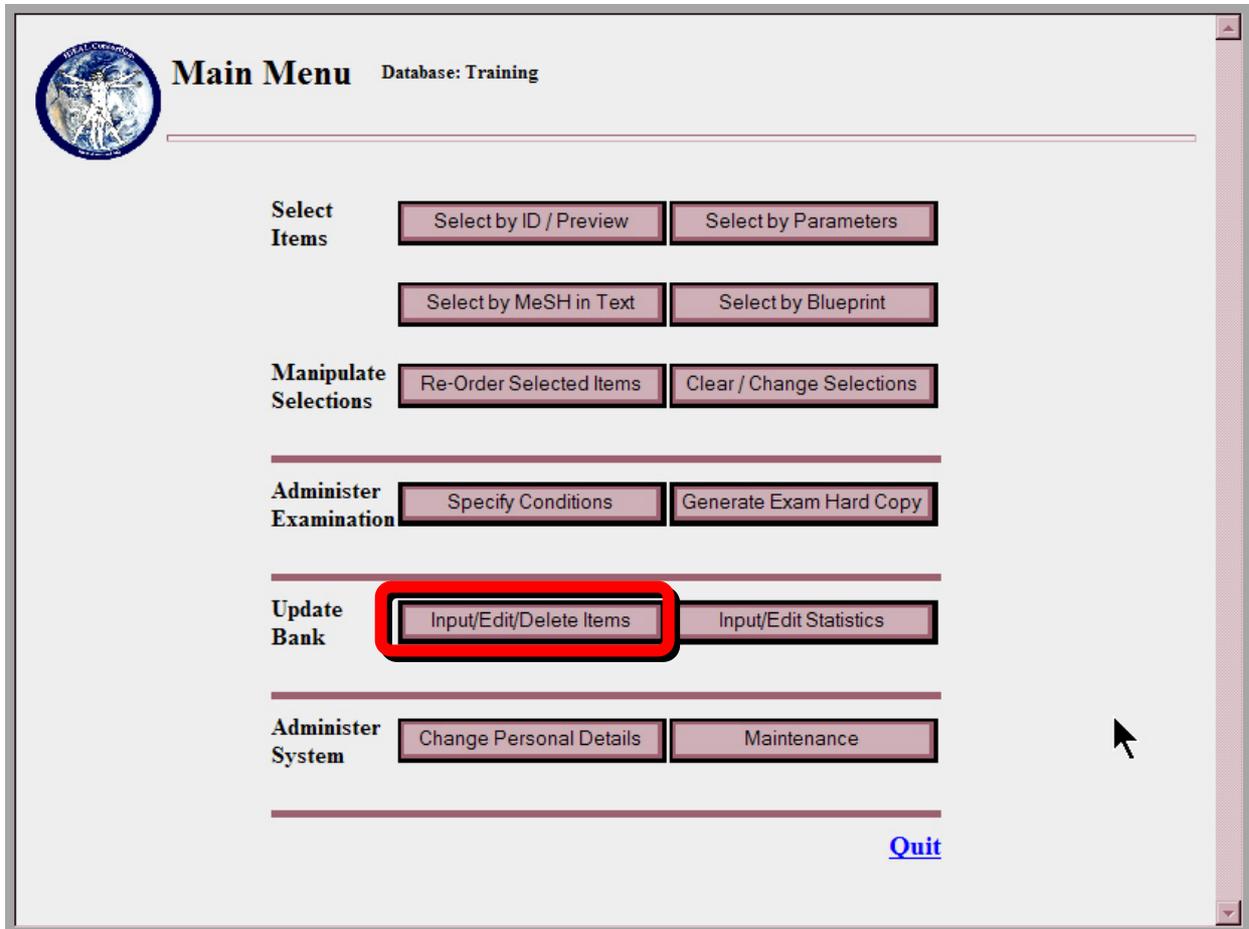
Password : ●●●●●●

**New Account Registration**

Password :

If you log in successfully, the main menu page will open (see illustration below).

3. Click the button 'Input/Edit/Delete Items'



The 'Input/Edit Item' page will be displayed.

4. Click the Button 'Use R-type Wizard'. (This button will only be displayed if the Intranet R-type Wizard has been installed on the server in which IDEAL Intranet is also installed).

**Input/Edit Item**

**Input Items:**

Item Type

X type: True/False  
X type: Multiple  
A type: 3-5 options  
K type  
A type: > 5 options  
Multi.Resp. - Pick n (A type)  
R type (Extended Matching)  
Multi.Resp. - Pick n (R type)  
Short Answer  
Modified Essay  
OSCE  
OSPE

**Edit Items:**

Item's ID in Bank

Item's Local ID

The Chinese University of Hong Kong

**Components:**

Input/Edit Vignette Only

Input/Edit Options Only

No. of Options 5 E

**Delete/UnDelete:**

Delete/UnDelete Items/Components

Back To Main Menu

5. The following R-type wizard page will be displayed.

**R Type Wizard - Input R-Type Item(s)**

Input R-Type Item(s) Input/Edit Options Add/Edit Classifier

Discipline/Panel: --

Topic: --

Theme: --

## Chapter 3

### Using the Wizard to Compose Items

#### 3.1 Creating an R-type item

To create an R-type item using the Intranet Wizard, follow these steps.

First, click the button 'Input R-type Item(s)'.

The screenshot shows the 'R Type Wizard - Input R-Type Item(s)' interface. At the top left is a logo. The title is 'R Type Wizard - Input R-Type Item(s)'. Below the title are three buttons: 'Input R-Type Item(s)' (highlighted with a red box), 'Input/Edit Options', and 'Add/Edit Classifier'. Below these are three dropdown menus for 'Discipline/Panel:', 'Topic:', and 'Theme:'. Below these is an 'Option ID:' field with a 'Load Option ID' button and a 'max: 269' label. To the right of the 'Option ID' field is a table with columns 'Height' and 'Width', and rows 'A', 'B', 'C', 'D', and 'E'. Below the table is a 'Lead-In:' section with a 'Lead-In Template' button and a text area. To the right of the text area are buttons for 'Format', 'SuperScript', 'Paste', 'Import File', 'Cut', 'Reset Format', 'Subscript', 'Copy', 'Undo', and 'Clear'. Below the 'Lead-In' section is a 'Scenario:' section with 'Add Scenario', '<', '>', 'Remove Scenario', and '1 of 1' buttons. At the bottom is an 'Answer:' section with a text area and buttons for 'Format', 'SuperScript', 'Paste', 'Import File', 'Cut', 'Reset Format', 'Subscript', 'Copy', 'Undo', and 'Clear'.

The dimmed button (illustrated above) indicates that the Input R-type Item(s) page is already being displayed.

Next to Discipline/Panel<sup>3</sup>, select from the drop down menu, a relevant discipline or system (e.g., Paediatrics). Similarly, select a Topic (e.g., Fever) and a Theme (e.g., Rash) from their respective drop down lists.

As you select a particular theme, a list of relevant options will appear in the 'Options' text box (located immediately below). This list of options will have an associated ID. The illustrated example has 270 as its ID.

**R Type Wizard - Input R-Type Item(s)**

Input R-Type Item(s)    Input/Edit Options    Add/Edit Classifier

Discipline/Panel: Paediatrics  
 Topic: Fever  
 Theme: Rash

Option ID: 270  
 Load Option ID  
 270  
 max: 270

	Height + -	Width + -
	Theme: Rash	
A	Hand foot mouth disease	
B	Infectious mononucleosis	
C	Kawasaki	
D	Measles	
E	Meningococcal septicaemia	
F	Roseola infantum	
G	Rubella	
H	Scarlet fever	
I	Slapped cheek disease	
J	Varicella-zoster	

Lead-In: Lead-In Template

Scenario: Add Scenario < > Remove Scenario 1 of 1

Answer: A B C D

<sup>3</sup> The term panel refers to system, module or any other term that a school may use, in lieu of discipline, as the organizational unit for delivering its curriculum

If the wizard has multiple option sets for a particular discipline, topic and theme configuration, a relevant list of IDs will be previewed. By clicking on these IDs one at a time, the various sets of options will be displayed. Select the option set which is more relevant for one's assessment intended.

Discipline/Panel:

Topic:

Theme:

Option ID: 90

Load Option ID

90

max: 271

Showing option set:

- 90
- 91

	Height + -	Width + -
	Theme: Causes of ascites	
A	Budd-Chiari syndrome	
B	Carcinoma	
C	Cardiac failure	
D	Cirrhosis	
E	Constrictive pericarditis	
F	Meigs` syndrome	
G	Myxoedema	
H	Nephrotic syndrome	
I	Ovarian overstimulation syndrome	
J	Pancreatitis	
K	Tuberculosis peritonitis	

The next step is to identify a suitable lead-in question.

Click the button 'Lead-In Template' and select a relevant question from the available list stored in the wizard. Appropriate lead-in questions for both basic and clinical science are provided. Click the button 'Select', the lead-in text will be copied to open text box located to the immediate right of the template button and the label 'Lead-In:' If an appropriate question is not presently listed, click the button 'Cancel' and compose the question by typing in the 'Lead-in' open text box.

Load Option ID  
270  
max: 271

A	Hand foot mouth disease
B	Infectious mononucleosis
C	Kawasaki
D	Measles
E	Meningococcal septicaemia
F	Roseola infantum
G	Rubella
H	Scarlet fever
I	Slapped cheek disease
J	Varicella-zoster

Height + - Width + - Format SuperScript Paste Import File Cut  
Reset Format Subscript Copy Undo Clear

**Lead-In:**  
Lead-In Template

Lead-In:  
Lead-In Template

**LeadIn Template (select from the following):**

- For each of the following [1/2/ . . /n] patients,
- In each of the following [1/2/ . . /n] scenarios,
- exposure to which [toxic agent] is the most likely the cause?
- what is the most likely diagnosis?
- with [a chief complaint], what is the most likely diagnosis?

Cancel Select

Lead-In:  
Lead-In Template

Height + - Width + - Format SuperScript Paste Import File Cut  
Reset Format Subscript Copy Undo Clear

For each patient, what is the most likely diagnosis?

In the second last open text box in the window, (under the label 'Scenario'), compose a relevant, appropriate scientific or clinical scenario. The user will have encountered numerous relevant and useful clinical cases or scientific problems during his/her own work experience. Draw on these experiences to develop a relevant short story.

This short story, (i.e., vignette) is typed into the open text box, or copied & pasted from MS NotePad, Excel or numerous other software programs *with the exception of MS Word*. An example vignette is illustrated below.

*Two yr-old boy is brought to clinic complaining of generalized rash & fever for 1 day. Rash initially appeared on face & trunk then spread to limbs. Intensity of rash in axilla & groin region has recently increased. Skin feels like sand-paper & there is also circumoral pallor. Throat is congested & examination is otherwise uneventful.*

The screenshot shows a software interface with three main sections: 'Lead-In', 'Scenario', and 'Answer'. The 'Lead-In' section has a text box containing the question: 'For each patient, what is the most likely diagnosis?'. The 'Scenario' section has a text box containing the vignette: 'Two yr-old boy is brought to clinic complaining of generalized rash & fever for 1 day. Rash initially appeared on face & trunk then spread to limbs. Intensity of rash in axilla & groin region has recently increased. Skin feels like sand-paper & there is also circumoral pallor. Throat is congested & examination is otherwise uneventful.' The 'Answer' section has a dropdown menu with options A, B, C, and D. A red rounded rectangle highlights the 'Scenario' text box and its associated toolbar.

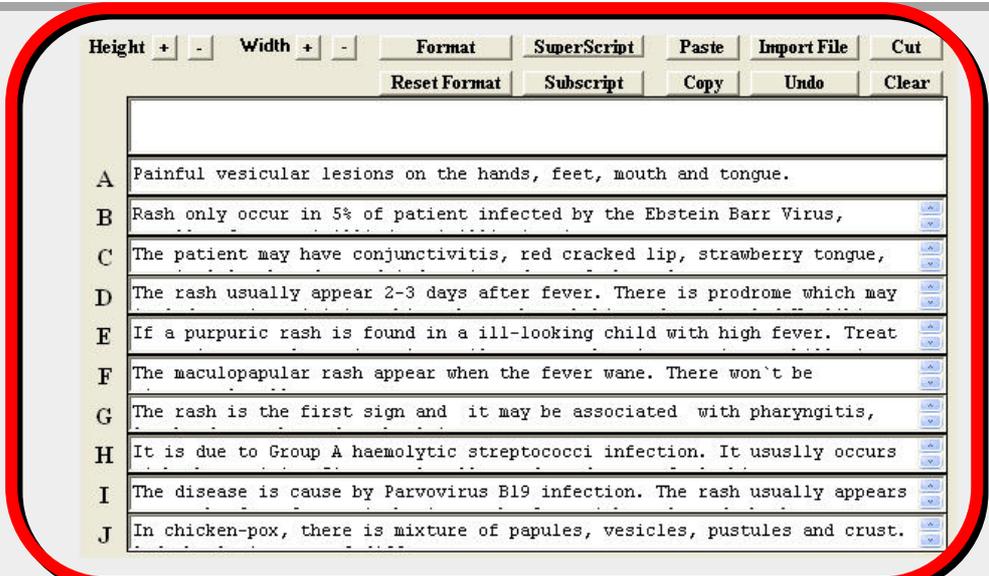
Specify the option that is the correct answer to the lead-in question for this scenario by selecting the relevant letter from the drop down list (see illustration).

This screenshot is similar to the previous one, but the 'Answer' dropdown menu is now open, showing options F, G, H, I, and J. Option H is highlighted with a blue background. A red rounded rectangle highlights the 'Answer' dropdown menu and its associated toolbar.

The item will be more educationally useful if relevant feedback is provided for candidates to read (or used by the instructor in discussions with the students) after the assessment has been taken and marked.

The feedback should include, when appropriate, information applicable to the vignette generally and feedback that is tailored for each option. A candidate can then be provided with the type of feedback that matches the vignette and the option that the candidate chose as an answer. Without this, the item will have limited use as a formative learning resource and will be less suitable for storing in the school's item bank.

Feedback:



	Height + -	Width + -	Format	SuperScript	Paste	Import File	Cut
			Reset Format	Subscript	Copy	Undo	Clear
A	Painful vesicular lesions on the hands, feet, mouth and tongue.						
B	Rash only occur in 5% of patient infected by the Ebstein Barr Virus, <a href="#">Copy</a>						
C	The patient may have conjunctivitis, red cracked lip, strawberry tongue, <a href="#">Copy</a>						
D	The rash usually appear 2-3 days after fever. There is prodrome which may <a href="#">Copy</a>						
E	If a purpuric rash is found in a ill-looking child with high fever. Treat <a href="#">Copy</a>						
F	The maculopapular rash appear when the fever wane. There won't be <a href="#">Copy</a>						
G	The rash is the first sign and it may be associated with pharyngitis, <a href="#">Copy</a>						
H	It is due to Group A haemolytic streptococci infection. It ususlly occurs <a href="#">Copy</a>						
I	The disease is cause by Parvovirus B19 infection. The rash usually appears <a href="#">Copy</a>						
J	In chicken-pox, there is mixture of papules, vesicles, pustules and crust. <a href="#">Copy</a>						

If you intend to create only one scenario for this particular R-type item, click the button 'Export to Word File' (refer to section 3.3 for more details). The item will be transferred to MS Word without saving it in the IDEAL bank; to save the item in IDEAL's formative item bank, refer to section 4.6 for details.

If, however, you want to create another vignette for this same option set, click the button 'Add Scenario' (see the outlined button at the top in the illustrated window). The first scenario will be kept, not lost, when the scenario text box clears so that you can type in a second scenario.

The screenshot displays the IDEAL software interface for creating a scenario. At the top, the 'Scenario:' section contains an 'Add Scenario' button (highlighted with a red box), navigation arrows, and a 'Remove Scenario' button. Below this is the 'Answer:' section, which includes a vertical list of letters F through J, with 'H' selected. The main text area contains a paragraph describing a clinical case: "Two yr-old boy is brought to clinic complaining of generalized rash & fever for 1 day. Rash initially appeared on face & trunk then spread to limbs. Intensity of rash in axilla & groin region has recently increased. Skin feels like sand-paper & there is also circumoral pallor. Throat is congested & examination is otherwise uneventful." Below the text area is the 'Feedback:' section, which contains a list of multiple-choice options labeled A through J. At the bottom of the interface, there are three buttons: 'Save Item and Continue Edit', 'Save Item and Start New Item', and 'Export to Word File' (highlighted with a blue box).

Assume that you want to add a second scenario. A scenario that is also applicable for the same illustrated option set is:

*Six yr-old girl, who has had cold & fever for 3 days, is sent home from school because she is feeling so poorly. Later in the same day she develops a maculopapular rash on her face & trunk. She does not want to get out of bed, preferring the bedroom curtains to be closed. On examination, there is grayish spot on the mucous membrane of her mouth.*

To incorporate this second vignette (i) click 'Add Scenario' (to store the first scenario and clear the text box), (ii) type the above text into the 'Scenario' open text box, and (iii) specify the correct answer for this second scenario.

The screenshot displays a software interface for managing clinical scenarios. It is divided into three main sections: Lead-In, Scenario, and Feedback.

- Lead-In:** Contains a text box with the text "For each patients, what is the most likely diagnosis?". Above it are controls for Height and Width, and a menu with options: Format, SuperScript, Paste, Import File, Cut, Reset Format, Subscript, Copy, Undo, Clear.
- Scenario:** Features an "Add Scenario" button (highlighted with a red box) and a "Remove Scenario" button. A counter shows "2 of 2" scenarios. Below the buttons is a text box containing the vignette text: "Six yr-old girl, who has had cold & fever for 3 days, is sent home from school because she is feeling so poorly. Later in the same day she develops a maculopapular rash on her face & trunk. She does not want to get out of bed, preferring the bedroom curtains to be closed. On examination, there is grayish spot on the mucous membrane of her mouth." Similar to the Lead-In section, it has Height/Width controls and a menu with Format, SuperScript, Paste, Import File, Cut, Reset Format, Subscript, Copy, Undo, Clear.
- Answer:** A vertical list of options A through E. Option D is selected.
- Feedback:** A list of ten feedback options (A-J) with associated text and small icons. The options are:
  - A Painful vesicular lesions on the hands, feet, mouth and tongue.
  - B Rash only occur in 5% of patient infected by the Ebstein Barr Virus,
  - C The patient may have conjunctivitis, red cracked lip, strawberry tongue,
  - D The rash usually appear 2-3 days after fever. There is prodrome which may
  - E If a purpuric rash is found in a ill-looking child with high fever. Treat
  - F The maculopapular rash appear when the fever wane. There won't be
  - G The rash is the first sign and it may be associated with pharyngitis,
  - H It is due to Group A haemolytic streptococci infection. It usually occurs
  - I The disease is cause by Parvovirus B19 infection. The rash usually appears
  - J In chicken-pox, there is mixture of papules, vesicles, pustules and crust.

(iv) If one's intention is to also enter a third scenario, click the button 'Add Scenario'. In a similar manner, the second scenario will be kept and the scenario box will clear so that you can type in the third vignette.

If, however, you are finished entering all the scenarios for this particular R-type item, do not click the 'Add Scenario' button and instead click the 'Export to Word File' button (refer to section 3.3 for more details). The item will be transferred to MS Word without saving it in the IDEAL bank (to save an item in IDEAL's formative item bank, refer to section 4.6 for details).

When the user clicks the 'Add Scenario' button, the sequential position for the scenario will be specified by the wizard (e.g., 2 of 2).

The feedback that you provided for the first scenario will be automatically included with all subsequent scenarios for this set of options. This feedback for a second and subsequent scenario may require modification as not all information is similarly applicable.

To modify the feedback, place the cursor in the 'Feedback' text box and type in the revisions for the general feedback as well as any of the tailored feedback for each option.

There is no technical limit to the number of vignettes that you may develop for a given option set.

For example, a third relevant scenario is illustrated below.

*One yr-old boy is admitted to the A&E department due to high fever & generalized rash. His mother claims that the boy was still playful a few hours ago & his condition has deteriorated very quickly. On examination, the rash is non-blanching , irregular in size, with a necrotic centre.*

As before, click 'Add Scenario', type the third scenario into the 'Scenario' open text box and then identify its correct answer. Click the 'Export to Word File' button if you intend to develop further but different R-type items (i.e., those for a different discipline, topic, theme and/or option set); the wizard will refresh and you can begin the process of selecting a new discipline/topic/theme and/or option set.

### 3.2 Editing a Draft Scenario

To modify any scenario, click '<' (i.e., back button) or '>' (i.e., forward button) and navigate to the appropriate section in the scenario & edit its text within the wizard.

Click the 'Remove Scenario' button if you wish to delete the entire scenario that is being currently displayed in the window.

The screenshot shows a software interface with the following elements:

- Scenario:** A text box containing the scenario text: "One yr-old boy is admitted to the A&E department due to high fever & generalized rash. His mother claims that the boy was still playful a few hours ago & his condition has deteriorated very quickly. On examination, the rash is non-blanching , irregular in size, with a necrotic centre." The "Remove Scenario" button is highlighted with a red box.
- Answer:** A list of options: C, D, E, F, G. Option E is selected.
- Buttons:** "Add Scenario", "<", ">", "Remove Scenario", "Height + -", "Width + -", "Format", "SuperScript", "Paste", "Import File", "Cut", "Reset Format", "Subscript", "Copy", "Undo", "Clear".

### 3.3 Transferring the R-Type Item(s) to MS Word

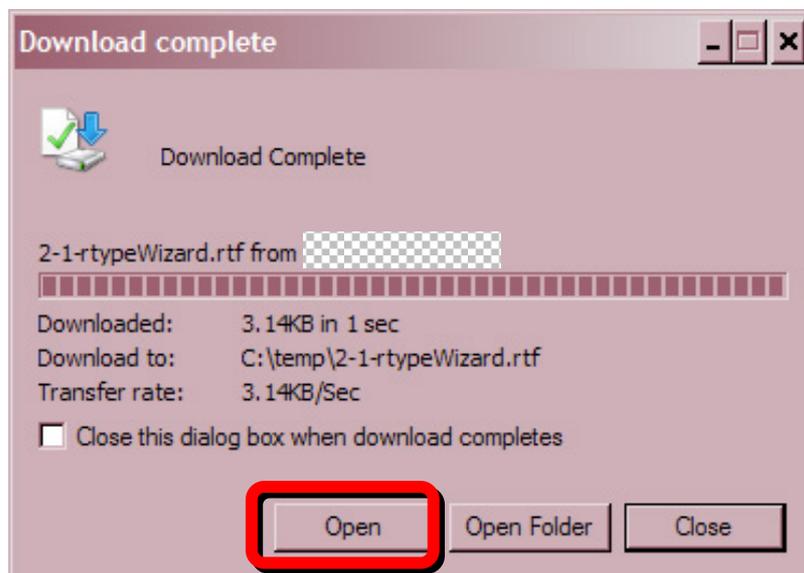
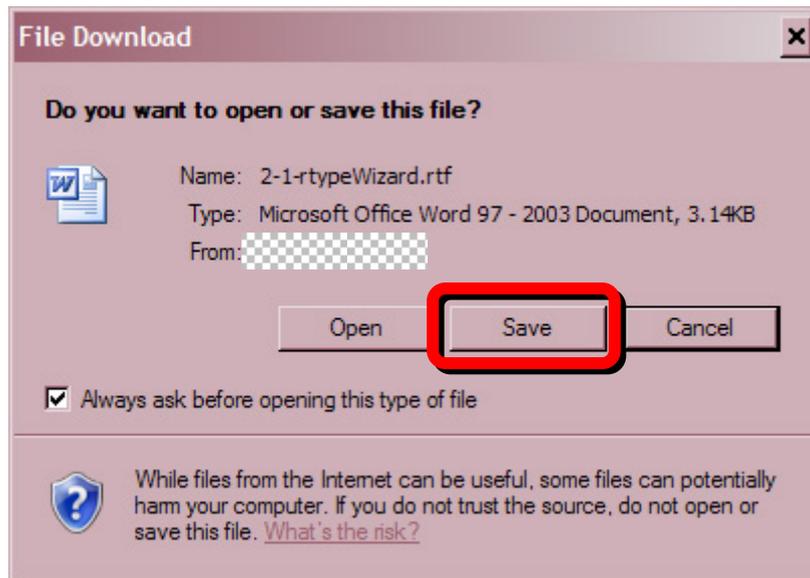
After one clicks the 'Export to Word File' button, the generated items will be displayed in a MS Word document without the item(s) being saved in IDEAL's formative item bank.

The screenshot shows the IDEAL R-Type Wizard interface. It is divided into two main sections: 'Answer:' and 'Feedback:'.  
The 'Answer:' section contains a list of options (C, D, E, F, G) with 'E' selected. Below the list is a text box containing the question: "One yr-old boy is admitted to the A&E department due to high fever & generalized rash. His mother claims that the boy was still playful a few hours ago & his condition has deteriorated very quickly. On examination, the rash is non-blanching , irregular in size, with a necrotic centre." Above and below this text box are formatting controls including 'Height', 'Width', 'Format', 'SuperScript', 'Paste', 'Import File', 'Cut', 'Reset Format', 'Subscript', 'Copy', 'Undo', and 'Clear'.  
The 'Feedback:' section contains a list of options (A through J) with their corresponding feedback text. Each option is followed by a small 'X' icon. Above and below this list are the same formatting controls as in the 'Answer:' section.  
At the bottom of the interface, there are three buttons: 'Save Item and Continue Edit', 'Save Item and Start New Item', and 'Export to Word File'. The 'Export to Word File' button is highlighted with a red rectangular border.

The download file page will appear. You may download only the items or also the items' Answers and Feedback. Right click the desired link & select 'Save Target As...' to download the relevant file.

The screenshot shows the IDEAL R Type Wizard interface. On the left, there is a logo for IDEAL (International Database for Assessment of Learning) and the title 'R Type Wizard'. Below the title are three buttons: 'Input R-Type Item(s)', 'Input/Edit Options', and 'Add/Edit Classifier'. Below these buttons are two links: '[RIGHT Click here to download the file \(rtf format\)](#)' and '[RIGHT Click here to download the file with Answers and Feedbacks \(rtf format\)](#)'. On the right side, a right-click context menu is open, showing options: 'Open', 'Open in New Window', 'Save Target As...', 'Print Target', 'Cut', 'Copy', 'Copy Shortcut', 'Paste', 'Add to Favorites...', and 'Properties'. The 'Save Target As...' option is highlighted in blue.

Click the button 'Save'. Then click 'Open' to view the downloaded file.



A MS Word file will appear. Note that its extension is .rtf and not the usual Word extension of \*.doc (or \*.docx if using Office 2007)

Click 'View' in Word's menu bar and select 'Print Layout'. The Word file will refresh displaying the correctly formatted R-type item(s). An example output is illustrated below.

Reference the following options for Questions: 1 - 3

Theme: Rash

- A. Hand foot mouth disease
- B. Infectious mononucleosis
- C. Kawasaki
- D. Measles
- E. Meningococcal septicaemia
- F. Roseola infantum
- G. Rubella
- H. Scarlet fever
- I. Slapped cheek disease
- J. Varicella-zoster

For each patients, what is the most likely diagnosis?

**Question: 1** Answer: H

Two yr-old boy is brought to clinic complaining of generalized rash & fever for 1 day. Rash initially appeared on face & trunk then spread to limbs. Intensity of rash in axilla & groin region has recently increased. Skin feels like sand-paper & there is also circumoral pallor. Throat is congested & examination is otherwise uneventful.

Feedback:

- A. Painful vesicular lesions on the hands, feet, mouth and tongue.
- B. Rash only occurs in 5% of patient infected by the Ebstein Barr Virus, usually after ampicillin/amoxicillin is given.
- C. The patient may have conjunctivitis, red cracked lip, strawberry tongue,

You can, if needed, edit, print and/or save this document using MS Word. To save the document in Word: click 'File' in Word's menu bar, then 'Save As' and assign a file name (or click on the MS symbol for Office 2007 in the upper left corner of the window and similarly save this document). You will normally use the extension \*.doc (or \*.docx Office 2007) rather than the extension .rtf.

## Chapter 4

### Increasing the Wizard's Capability

Users can add additional option sets or options within option sets. Users can also incorporate additional themes, topics and/or disciplines and systems. These additions increase the wizard's usefulness as an item writing aid.

#### 4.1 Adding an Option Set

If an appropriate set of options is not presently available in the wizard, compose the set and add it by following the steps described in this section.

1. Click the button 'Input/Edit Options'.

**R Type Wizard - Input/Edit Options**

Input R-Type Item(s) **Input/Edit Options** Add/Edit Classifier

Discipline/Panel: --  
Topic: --  
Theme: --

Save New Option Set Create New Option Set Reset Show Deleted Set Delete Set

Option ID: Load Option ID  
max: 269

Height + - Width + - # Options: 6  
Format SuperScript Paste Import File Cut  
Reset Format Subscript Copy Undo Clear

A  
B  
C  
D  
E  
F

Export All Option Set to Word File

[Back To Previous Page](#) [Back To Previous Menu](#)

2. Select from the respective drop down menus a relevant Discipline or System, a Topic and a Theme.

**R Type Wizard - Input/Edit Options**

Input R-Type Item(s)    Input/Edit Options    Add/Edit Classifier

**Discipline/Panel:** Paediatrics  
**Topic:** Signs  
**Theme:** Chest Pain

Save New Option Set    Create New Option Set    Reset    Show Deleted Set    Delete Set

Option ID:    Height + -    Width + -    Format    SuperScript    Paste    Import File    Cut  
# Options: 6    Reset Format    Subscript    Copy    Undo    Clear

A	
B	
C	
D	
E	
F	

Export All Option Set to Word File

3. Create a new set of options by typing in the open text boxes (highlighted in the following illustration). Specify, by selecting from the drop down list next to the label '# Options:', the correct number of options that will be composed for this set of options.

**R Type Wizard - Input/Edit Options**

Input R-Type Item(s) | Input/Edit Options | Add/Edit Classifier

Discipline/Panel: Paediatrics  
 Topic: Signs  
 Theme: Chest Pain

Save New Option Set | Create New Option Set | Reset | Show Deleted Set | Delete Set

Option ID:  Load Option ID   
 max: 270

Option ID	Text	Height	Width
		10	
		11	
		12	
A	Asthma	13	
		14	
B	Costochondriti	15	e Syndrome)
		16	
		17	
D			
E			
F			
G			
H			
I			
J			

Export All Option Set to Word File

Assume, for example, a new option set (for the Discipline of Paediatrics, with the Topic of 'Signs' and with the Theme of 'Chest Pain') was as follows.

Asthma  
Costochondritis (Tietze Syndrome)  
Conversion Disorder  
Esophagitis  
Foreign Body  
Myocarditis  
Muscle strain  
Pericarditis  
Pneumonia  
Pneumothorax  
Precordial Catch Syndrome  
Supraventricular Tachycardia

4. To have the Wizard store this new set of options, click the button 'Save New Option Set'.

Discipline/Panel: Paediatrics  
Topic: Signs  
Theme: Chest Pain

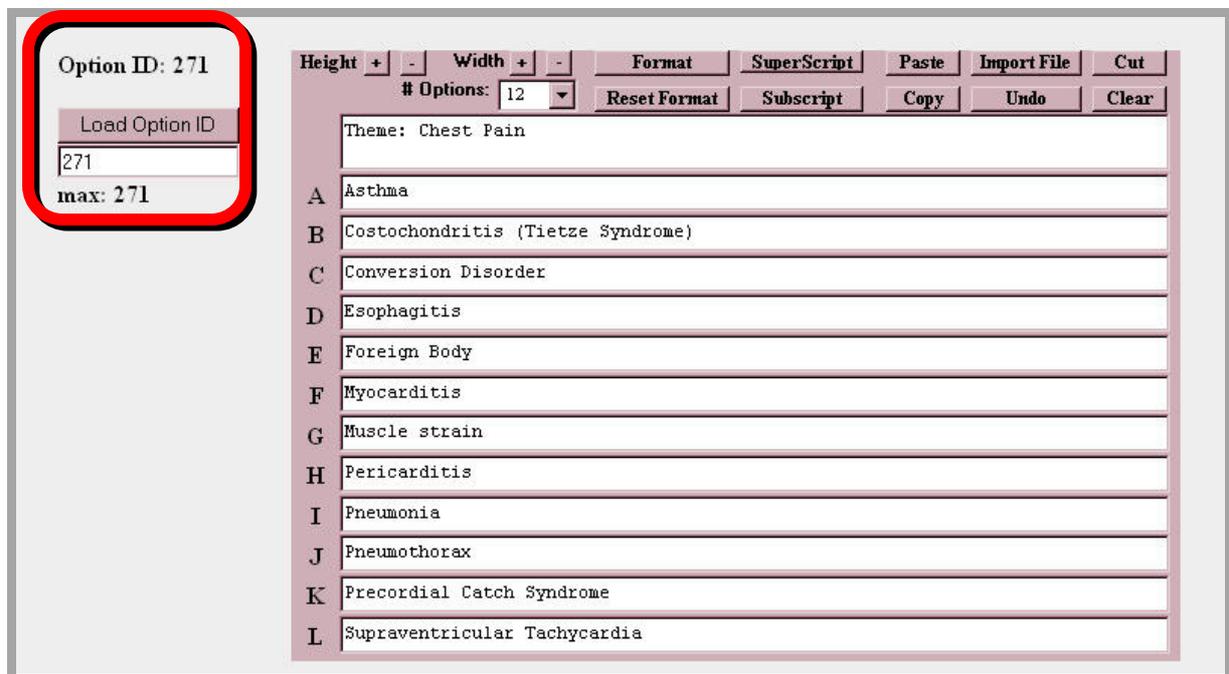
Save New Option Set | Create New Option Set | Reset | Show Deleted Set | Delete Set

Option ID: Load Option ID  
max: 270

Height	+	-	Width	+	-	Format	SuperScript	Paste	Import File	Cut
# Options: 10										
						Reset Format	Subscript	Copy	Undo	Clear
A										
B										
C										
D										
E										
F										
G										
H										
I										
J										

The set is automatically added to the Wizard's bank of option sets. The Wizard's total number of option sets will be appropriately increased.

In the illustrated example, the number 271 indicates the ordinal number 271 is the latest ID and represents the total number of option sets now stored by the Wizard.



5. A message will confirm that the new option set has been added



6. Click 'OK' to continue.

## 4.2 Adding an additional option to an existing set of options

If you only want to add one or more options to an existing option set, follow these steps.

1. Click the button 'Input/Edit Option'.
2. In the open text box under the button 'Load Option ID', enter the option set's ID. Then click the 'Load Option ID' button.

The relevant set of options will appear in the open text box immediately to the right.

**R Type Wizard - Input/Edit Options**

Input R-Type Item(s) **Input/Edit Options** Add/Edit Classifier

Discipline/Panel: Paediatrics  
Topic: Signs  
Theme: Chest Pain

Save Changes Create New Option Set Reset Show Deleted Set Delete Set

Option ID: 271  
Load Option ID  
271  
max: 271

Height + - Width + - # Options: 10  
Format SuperScript Paste Import File Cut  
Reset Format Subscript Copy Undo Clear

Theme: Chest Pain

A Asthma  
B Costochondritis (Tietze Syndrome)  
C Conversion Disorder  
D Esophagitis  
E Foreign Body  
F Myocarditis  
G Muscle strain  
H Pericarditis  
I Pneumonia  
J Pneumothorax

Export All Option Set to Word File

3. Select from the drop down list next to the label '# Options:' and specify the new total number of options that will be in the modified set of options.
4. Now type in your additional option(s) in the blank open text box(es).

Input R-Type Item(s)
Input/Edit Options
Add/Edit Classifier

---

**Discipline/Panel:**

**Topic:**

**Theme:**

Save Changes
Create New Option Set
Reset
Show Deleted Set
Delete Set

---

Option ID: 271

Load Option ID

max: 271

Height	Width	# Options:	Format	SuperScript	Paste	Import File	Cut
		12	Reset Format	Subscript	Copy	Undo	Clear
		13					
		14					
A		15					
B		16					
		17					
B		18					
		19					
C							
D							
E							
F							
G							
H							
I							
J							
K							
L							

5. Click the button 'Save Changes', the new options will be added to the option set and saved in the wizard.

Input R-Type Item(s)    Input/Edit Options    Add/Edit Classifier

---

Discipline/Panel: Paediatrics  
Topic: Signs  
Theme: Chest Pain

**Save Changes**    Create New Option Set    Reset    Show Deleted Set    Delete Set

---

Option ID: 271

Load Option ID  
271  
max: 271

Height	Width	Format	SuperScript	Paste	Import File	Cut
# Options: 12						
Reset Format    Subscript    Copy    Undo    Clear						
Theme: Chest Pain						
A	Asthma					
B	Costochondritis (Tietze Syndrome)					
C	Conversion Disorder					
D	Esophagitis					
E	Foreign Body					
F	Myocarditis					
G	Muscle strain					
H	Pericarditis					
I	Pneumonia					
J	Pneumothorax					
K	Precordial Catch Syndrome					
L	Supraventricular Tachycardia					

---

Export All Option Set to Word File

### 4.3 Editing an option within an existing set of options

1. To modify a particular option within an existing set of options, first retrieve the relevant option set by entering its ID (as described in the previous section 4.2).
2. To save this change, follow the steps for saving changes (as previously described in section 4.2).

The screenshot shows a web application interface for managing option sets. At the top, there are three tabs: "Input R-Type Item(s)", "Input/Edit Options", and "Add/Edit Classifier". Below these are three dropdown menus for "Discipline/Panel" (Medicine), "Topic" (Symptoms), and "Theme" (Cough). A row of buttons includes "Save Changes" (highlighted with a red box), "Create New Option Set", "Reset", "Show Deleted Set", and "Delete Set".

On the left, there is a section for "Option ID: 1" with a "Load Option ID" button, a text input field containing "1", and a "max: 273" label. The main editing area, highlighted with a large red rounded rectangle, contains a toolbar with buttons for "Height", "Width", "Format", "SuperScript", "Paste", "Import File", "Cut", "Reset Format", "Subscript", "Copy", "Undo", and "Clear". Below the toolbar is a list of options, each with a lettered label (A-K) and a text description:

- Theme: Cough
- A Angiotensin-converting enzyme (ACE) inhibitor medication
- B Asthma
- C Cardiac failure
- D Inhaled foreign body
- E Middle ear discease
- F Oesophageal reflux
- G Psychogenic
- H Pulmonary embolism
- I Sinusitis
- J Smoker's cough
- K Tuberculosis

At the bottom right, there is a button labeled "Export All Option Set to Word File".

#### 4.4 Removing an option from an existing option set

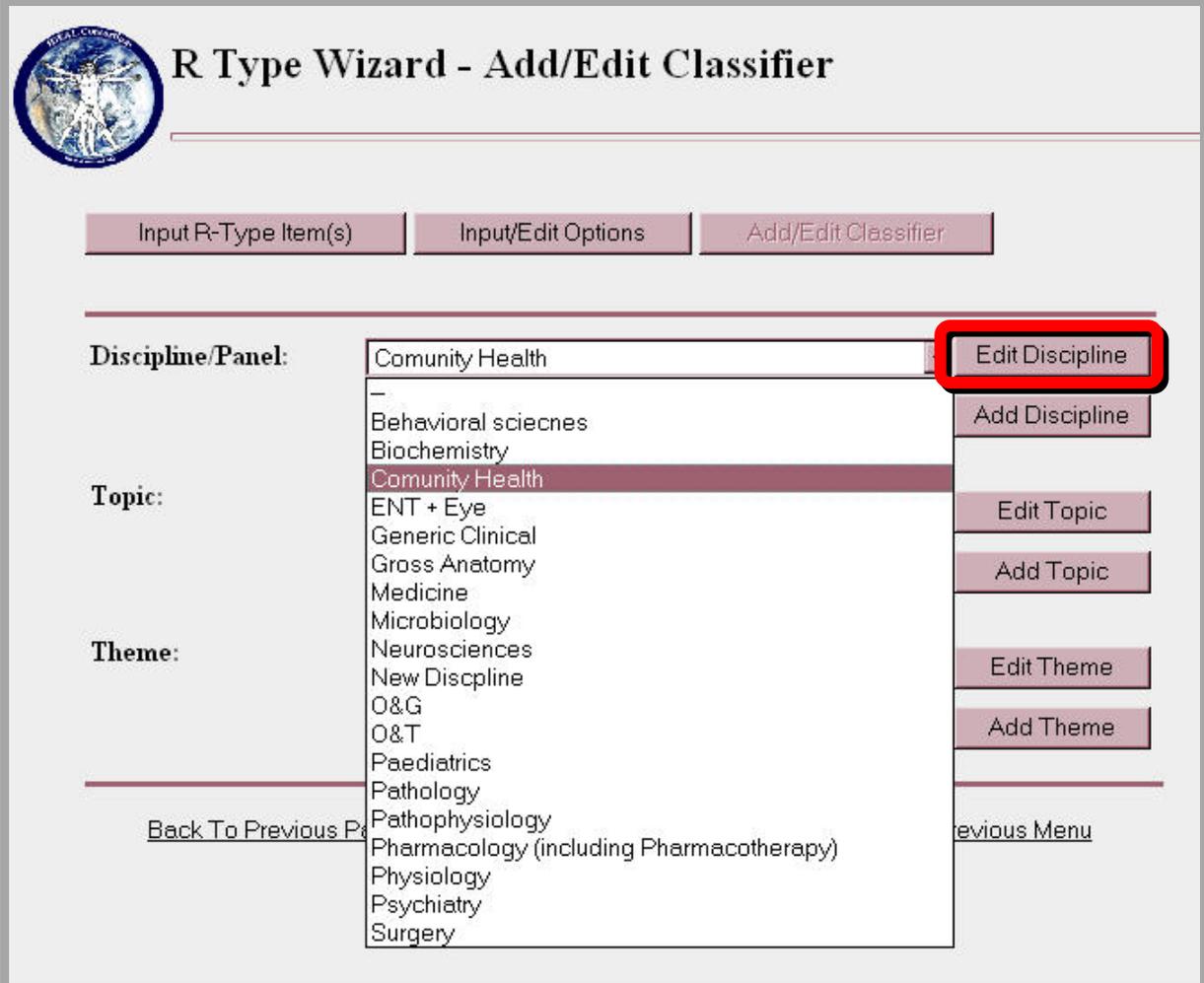
1. To remove an option from an existing option set, retrieve the set of options by identifying the ID for the option set (as described previously in section 4.2).
2. Delete the text for the particular option(s). In the drop down list next to the label '# Options:', specify the number of options after the deletion(s).
3. To save this change, follow the steps for saving changes (as previously described in section 4.2).

The screenshot shows a software interface for managing option sets. At the top, there are several buttons: 'Save Changes' (highlighted with a red box), 'Create New Option Set', 'Reset', 'Show Deleted Set', and 'Delete Set'. Below these buttons, the 'Option ID: 1' is displayed. A 'Load Option ID' button is present, with a text input field containing '1' and a 'max: 271' label. The main area contains a table with columns for 'Height', 'Width', 'Format', 'SuperScript', 'Paste', 'Import File', and 'Cut'. The table lists options A through J, with a dropdown menu for '# Options:' set to 11. Option K is highlighted with a red box. The table content is as follows:

	Height	Width	Format	SuperScript	Paste	Import File	Cut		
			# Options:	11	Reset Format	Subscript	Copy	Undo	Clear
			Throat: Cough	10					
				11					
				12					
A			Angiotensin-converting enzyme (ACE) inhibitor medication	13					
				14					
B			Asthma	15					
				16					
C			Cardiac failure	17					
D			Inhaled foreign body						
E			Middle ear disease						
F			Oesophageal reflux						
G			Psychogenic						
H			Pulmonary embolism						
I			Sinusitis						
J			Smoker's cough						
K									



3. To edit an existing discipline, select one of the listed disciplines or systems in the drop down list & click the button 'Edit Discipline'.



The image shows a software interface titled "R Type Wizard - Add/Edit Classifier". At the top left is a circular logo with a figure and the text "RACIAL Classification". Below the title are three tabs: "Input R-Type Item(s)", "Input/Edit Options", and "Add/Edit Classifier". The main area is divided into three sections: "Discipline/Panel", "Topic", and "Theme". Each section has a list of items and a corresponding button. The "Discipline/Panel" section has a dropdown menu with "Community Health" selected and a red box around the "Edit Discipline" button. The "Topic" section has a dropdown menu with "Community Health" selected and a button labeled "Edit Topic". The "Theme" section has a dropdown menu with "New Discipline" selected and a button labeled "Edit Theme". At the bottom, there are two buttons: "Back To Previous Page" and "Previous Menu".

Section	Item	Action Button
Discipline/Panel:	Community Health	Edit Discipline
	-	
	Behavioral sciences	Add Discipline
	Biochemistry	
Topic:	Community Health	Edit Topic
	ENT + Eye	
	Generic Clinical	Add Topic
	Gross Anatomy	
	Medicine	
	Microbiology	
Theme:	Neurosciences	Edit Theme
	New Discipline	Add Theme
	O&G	
	O&T	
	Paediatrics	
	Pathology	
	Pathophysiology	
	Pharmacology (including Pharmacotherapy)	
	Physiology	
	Psychiatry	
	Surgery	

4. Enter the modification in the open text box. Note that 'Save' & 'Cancel' buttons appear. Click the button 'Save' in order to save the modification. To cancel the change, click the button 'Cancel'.

The screenshot shows a form with three main sections: **Discipline/Panel:**, **Topic:**, and **Theme:**. The **Discipline/Panel:** section has a text input field containing "Community Health", which is highlighted with a red border. To its right are "Save" and "Cancel" buttons. Below this is an empty text input field with an "Add Discipline" button. The **Topic:** section has a dropdown menu with a hyphen "-", an "Edit Topic" button, and an empty text input field with an "Add Topic" button. The **Theme:** section has a dropdown menu with a hyphen "-", an "Edit Theme" button, and an empty text input field with an "Add Theme" button.

5. Follow a similar process to add new or to edit Topics and/or Themes.

Note that after any option (or discipline or system, topic and/or theme) has been saved, that entry cannot be subsequently deleted. However, as already described, any entry which has been saved can be edited (modified).

## 4.6 Saving items in IDEAL's Formative Item Bank

Items created with the Intranet Wizard can be added to IDEAL non-restricted item bank (provided the item bank is being kept on the same server as the Wizard).

To enter an item into IDEAL's formative, non-restricted item bank, click either button 'Save Item and Continue Edit' (i.e., save item to IDEAL's formative item bank & continue editing on the same item) or 'Save Item and Start New Item' (i.e., save item to IDEAL's formative item bank & start creating a new item).

The screenshot displays the IDEAL Formative Item Bank interface. At the top, the 'Scenario' section includes 'Add Scenario', navigation arrows, 'Remove Scenario', and '1 of 1'. Below this is the 'Answer' section, which features a vertical list of letters F through J, with 'H' selected. To the right of the list is a text area containing a clinical vignette: 'Two yr-old boy is brought to clinic complaining of generalized rash & fever for 1 day. Rash initially appeared on face & trunk then spread to limbs. Intensity of rash in axilla & groin region has recently increased. Skin feels like sand-paper & there is also circumoral pallor. Throat is congested & examination is otherwise uneventful.' Above the text area is a toolbar with buttons for 'Height', 'Width', 'Format', 'SuperScript', 'Paste', 'Import File', 'Cut', 'Reset Format', 'Subscript', 'Copy', 'Undo', and 'Clear'. Below the answer section is the 'Feedback' section, which contains a list of multiple-choice options labeled A through J. Each option is in a separate text box with a dropdown arrow on the right. The options are: A: 'Painful vesicular lesions on the hands, feet, mouth and tongue.'; B: 'Rash only occur in 5% of patient infected by the Ebstein Barr Virus,'; C: 'The patient may have conjunctivitis, red cracked lip, strawberry tongue,'; D: 'The rash usually appear 2-3 days after fever. There is prodrome which may'; E: 'If a purpuric rash is found in a ill-looking child with high fever. Treat'; F: 'The maculopapular rash appear when the fever wane. There won't be'; G: 'The rash is the first sign and it may be associated with pharyngitis,'; H: 'It is due to Group A haemolytic streptococci infection. It usully occurs'; I: 'The disease is cause by Parvovirus B19 infection. The rash usually appears'; J: 'In chicken-pox, there is mixture of papules, vesicles, pustules and crust.' At the bottom of the interface, there are three buttons: 'Save Item and Continue Edit', 'Save Item and Start New Item', and 'Export to Word File'. The first two buttons are highlighted with a red rectangular box. At the very bottom, there are two links: 'Back To Previous Page' and 'Back To Previous Menu'.

A message will confirm that the item was saved in IDEAL's non-restricted item bank with its item ID displayed (in this example, the ID was 158).



Click 'OK' to continue.

## 4.7 Reviewing All Stored Option Sets

The user can examine all the option sets that are presently stored in the wizard. In order to do this, follow these steps.

1. Click the button 'Input/Edit Option'.
2. Click the 'Export All Option Set to Word File' button.

**R Type Wizard - Input/Edit Options**

Input R-Type Item(s) **Input/Edit Options** Add/Edit Classifier

Discipline/Panel: --  
Topic: --  
Theme: --

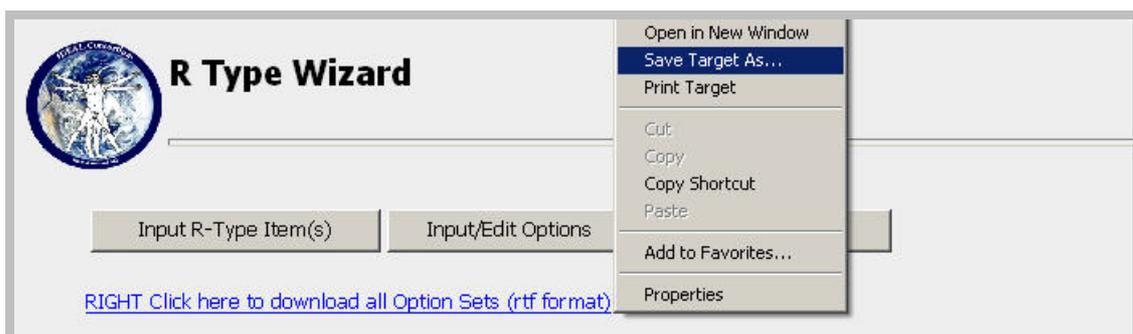
Save New Option Set Create New Option Set Reset Show Deleted Set Delete Set

Option ID: Load Option ID  
max: 273

	Height + -	Width + -	Format	SuperScript	Paste	Import File	Cut
# Options:	6		Reset Format	Subscript	Copy	Undo	Clear
A							
B							
C							
D							
E							
F							

**Export All Option Set to Word File**

The download file page will appear. You may download the file by right clicking the link & select 'Save Target As...' to download the file. Note that its extension is .rtf.





Faculty of Medicine  
The Chinese University of Hong Kong