Educational treasures in Radiology:

A free online program for Radiology Boards preparation

Roland Talanow[1,2*]

1. Lexington Diagnostic Center, Lexington, KY, USA

2. EduRad, Lexington, KY, USA

* **Correspondence:** *Roland Talanow, MD, PhD, Lexington Diagnostic Center, 1725 Harrodsburg Road, 40504 Lexington, KY, USA (roland@talanow.net)*

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ABSTRACT

Purpose: An objective tool is desired, which optimally prepares for Radiology boards examination. Such program should prepare examinees with pertinent radiological contents and simulations as expected in the real examination.

Background: Many countries require written boards examinations for Radiology certification eligibility. No objective measure exists to tell if the examinee is ready to pass the exam or not. Time pressure and computer environment might be unfamiliar to examinees. Traditional preparation lectures don't simulate the "real" Radiology exam because they don't provide the special environment with multiple choice questions and timing.

Materials and Methods: This online program consists of 4 parts. The entry section allows to create questions with additional fields for comprehensive information. Sections include Pediatrics/Mammography/GI/IR/Nucs/Thoracic/Musculoskeletal/GU/Neuro/Ultrasound/Cardiac /OB/GYN and Miscellaneous. Experienced radiologists and educators evaluate and release/delete these entries in the administrator section. In the exam section users can create (un)timed customized exams for individual needs and learning pace. Exams can either include all sections or only specific sections to gear learning towards areas with weaker performance. Comprehensive statistics unveil the user's strengths and weaknesses to help focussing on "weak" areas. In the search section a comprehensive search and review can be performed by searching the entire database for keywords/topics or only searching within specific sections.

Conclusion: www.RadiologyBoards.org is a new working concept of Radiology boards preparation to detect and improve the examinee's weaknesses and finally to increase the examinee's confidence level for the final exam. It is beneficial for Radiology residents and also board certified radiologists to refresh/maintain radiological knowledge.

TECHNICAL/IT & INNOVATIVE

EDUCATIONAL TREASURES IN RADIOLOGY

In this new series "Educational treasures in Radiology" we introduce the Radiology community to interesting and useful educational resources which can be found on the Internet. The World Wide Web (WWW) offers a plenitude of educational tools, programs and other resources. It becomes more difficult for the individual user to find the "best" resources and to separate the good from the less helpful ones. In each article of this series we present a selected online resource, which we think should be made aware to the Radiology community.

This article focuses on *Radiology Boards*, a free online program for Radiology Boards preparation.

Many countries require written boards examinations for Radiology certification eligibility and increasingly change their Radiology Boards exams to computerized and standardized exams. In example, the American Board of Radiology [1] decided to move its Diagnostic Radiology examination completely to computer based [2]. The first Core Examination will be given the first week of October 2013 and the first Certifying Examination will be given in the fall of 2015 [3].

Currently, no objective measure exists to tell if the examinee is ready to pass the exam or not. Time pressure and computer environment might be unfamiliar to examinees and traditional preparation lectures don't simulate the "real" Radiology exam because they don't provide the special environment with multiple choice questions and timing. Therefore, an objective tool is desired, which optimally prepares for Radiology boards examination. Such program should prepare examinees with pertinent radiological contents and simulations as expected in the real examination.

This online program offers over 7000 questions with comprehensive information and explanations for the following sections:
Clinical sections:

- Pediatrics
- Mammography
- GI
- IR
- Nucs
- Thoracic
- Musculoskeletal
- GU
- Neuro
- Ultrasound
- Cardiac
- OB/GYN
- Miscellaneous

Physics related sections:

- General Radiography
- Mammography
- Fluoroscopy/Fluorography
- Digital X-ray Imaging
- Computed Tomography
- Nuclear Radiology
- Ultrasound
- Magnetic Resonance
- Radiation Safety/Protection
- Radiation Biology/Effects
- NRC - related materials

In the exam section the user may create a new Mock exam, review all previous exams, review scores and statistics or continue a paused exam (Figure 1).

The user may design individual exams by defining:

- number of questions
- timed or untimed exam
- repeat questions allowed or not
- covering all sections or only selected (to focus on weaker areas)

The exam

Users can create (un)timed customized exams for individual needs and learning pace. Exams can either include all sections or only specific sections to gear learning towards areas with weaker performance.

As in a real exam scenario, the user may check the most appropriate answer choice(s) and click on "Next question" to proceed. If the user thinks this question is noteworthy it may be marked for later review. A quick access menu provides a list of each question in this particular exam for quick access (Figure 2). It is also a reminder for which questions have not been answered yet and which questions have been marked. The mark feature not only allows tracking the question within the exam but also after the exam has finished. After finishing an exam, the review mode allows to go through every question and the results. In addition, a comprehensive explanation is also provided for each question (Figure 3).

Analytics and learning curve

Comprehensive statistics unveil the user's strengths and weaknesses to help focusing on "weak" areas.
These statistics determine the learning curve of the user and demonstrate numeric statistics of the overall performance (Figure 4) as well as graphic statistics of performance for individual sections (Figure 5). A status report provides an overview of how many questions are available for each section.

Search area

The search area allows searching the entire database in a broad/general fashion or within specific categories. The search can be narrowed down by only searching within sections, questions, answers, explanations, diagnoses, keywords etc. (Figure 6).

Category and question overview

Every question is listed and may be reviewed by clicking on "Read question". In addition the respective section is displayed and can be also accessed (Figure 7).

Question review mode

By clicking on the appropriate tabs the user may read the question, answer, explanation, literature references and links to similar topics and help by a Radiology specific search engine to find additional peer reviewed information on the Internet (Figure 8).

Community integration

Radiology Boards has been implemented into Radiolopolis [5,6], an international Radiology community for education, research and clinical practice and users may share and use the contents and features also within this educational Radiology network (Figure 9). Radiolopolis members are automatically associated with a *Radiology Boards* account. Radiology Boards provides educational features within the "activity stream" on Radiolopolis such as "Teaching points" and "Questions of the day" (Figure 10).

In conclusion, *Radiology Boards* is a new working concept of Radiology boards preparation to detect and improve the examinee's weaknesses and finally to increase the examinee's confidence level for the final exam.
It is beneficial for Radiology residents and also board certified radiologists to refresh/maintain radiological knowledge.

Do you have a potential topic for "Educational treasures in Radiology"? Then please contact journals@edurad.org.

FIGURES

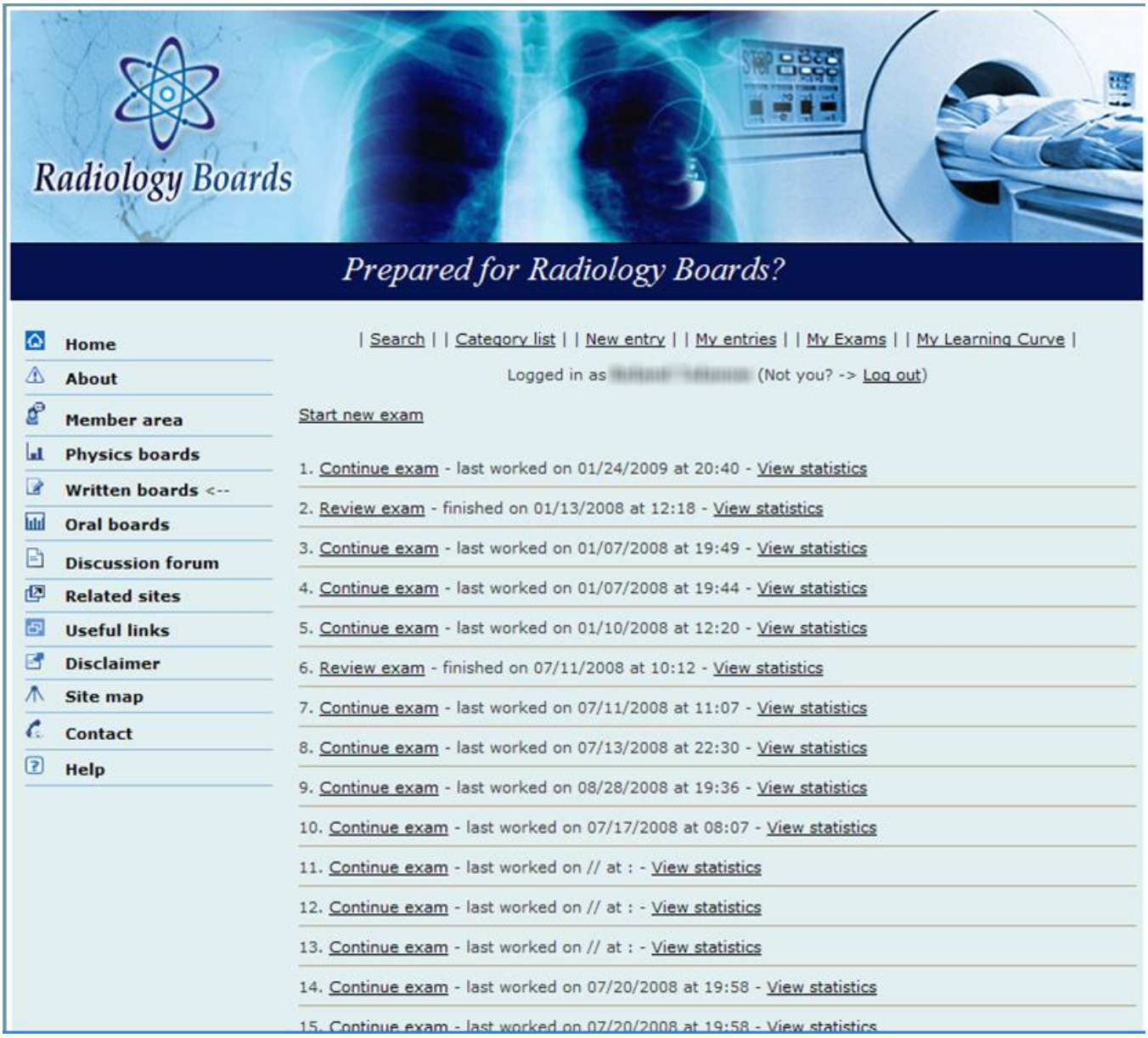

Figure 1: In the exam section the user may create a new Mock exam, review all previous exams, review scores and statistics or continue a paused exam.

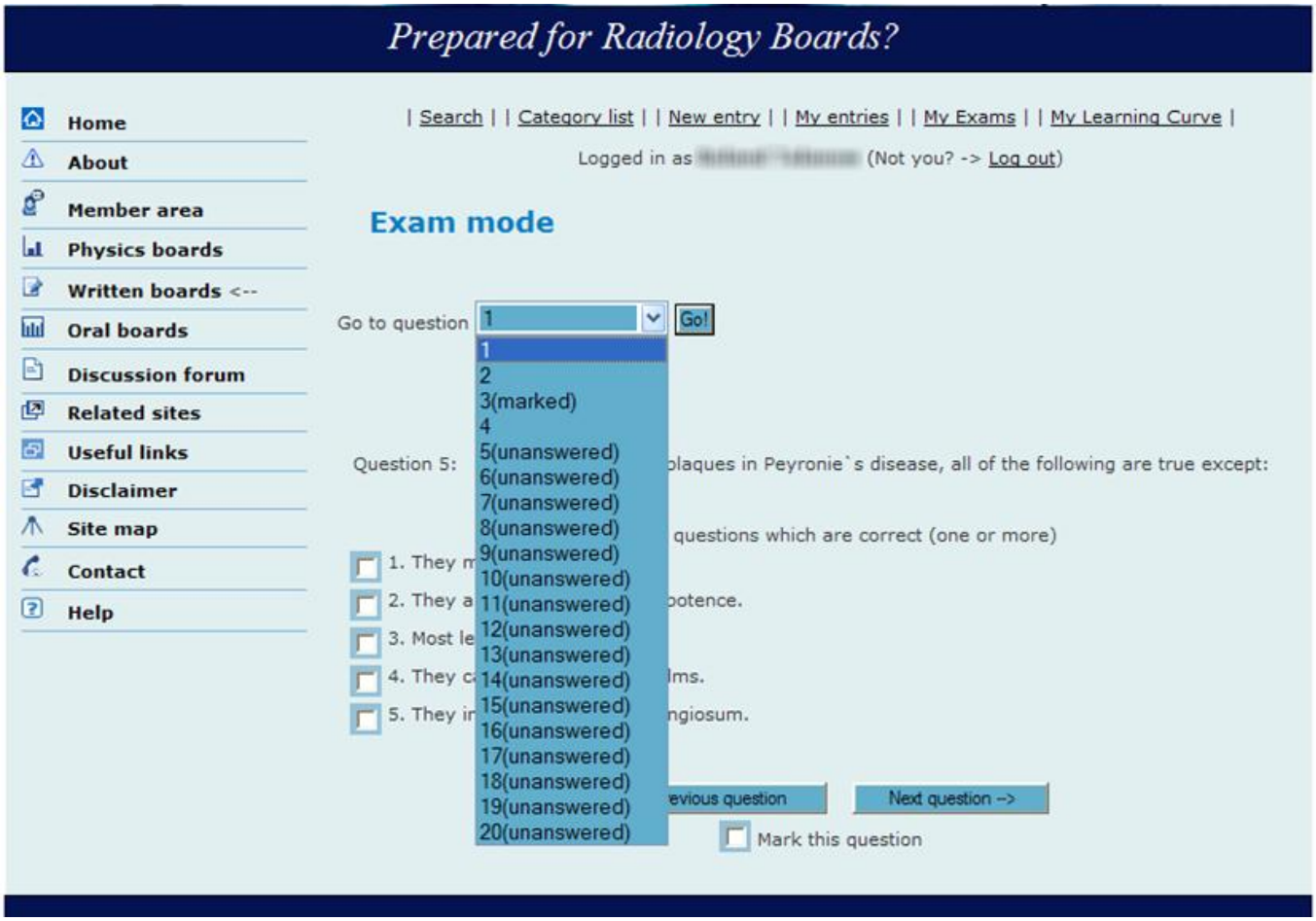

Figure 2: As in a real exam scenario, the user may check the most appropriate answer choice(s) and click on "Next question" to proceed. If the user thinks this question is noteworthy it may be marked for later review. A quick access menu provides a list of each question in this particular exam for quick access. It is also a reminder for which questions have not been answered yet and which questions have been marked. The mark feature not only allows tracking the question within the exam but also after the exam has finished.

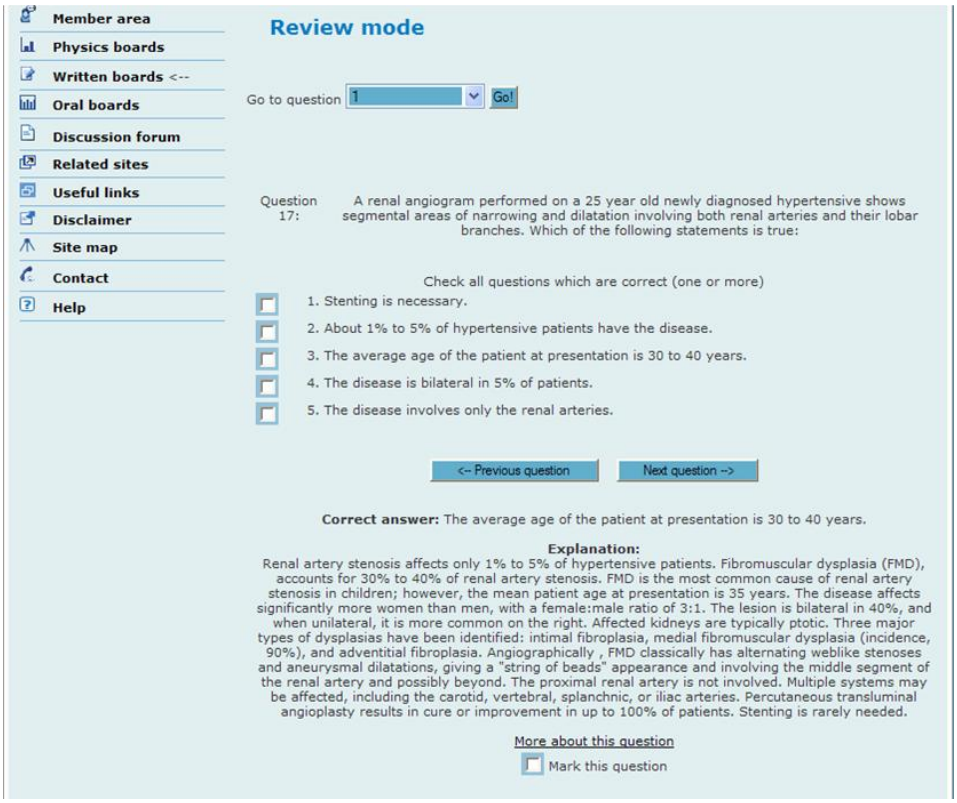

Figure 3: After finishing an exam, the review mode allows to go through every question and the results. In addition, a comprehensive explanation is also provided for each question.

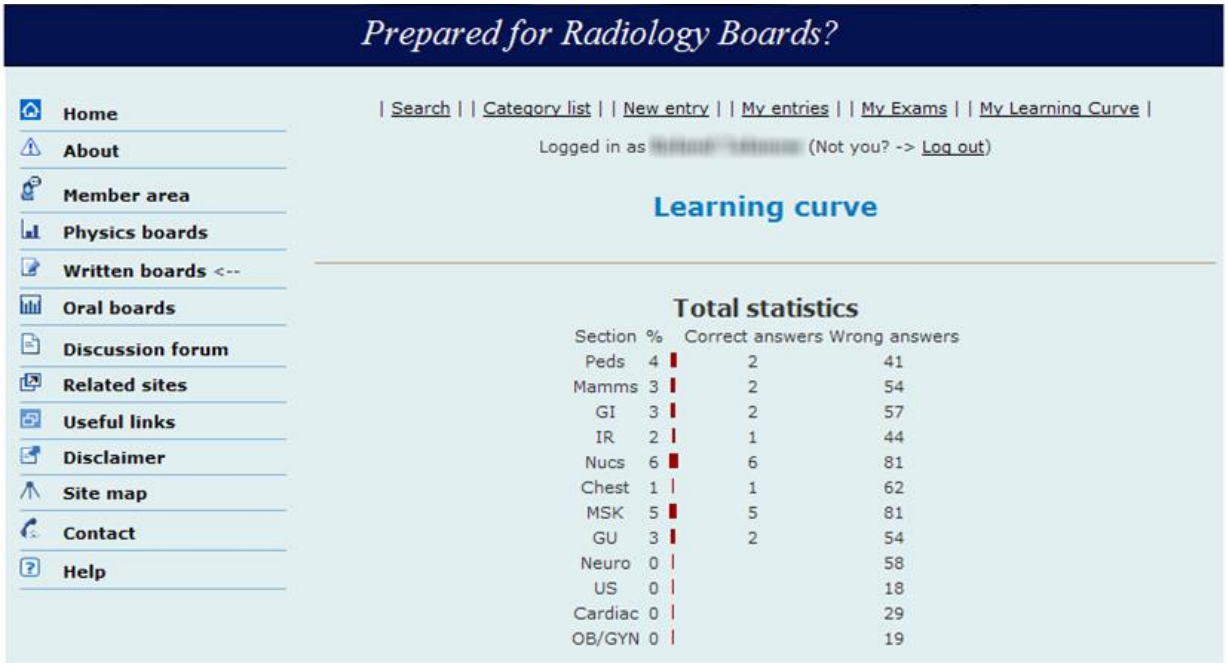

Figure 4: Comprehensive statistics unveil the user's strengths and weaknesses to help focusing on "weak" areas. These statistics determine the learning curve of the user and demonstrate numeric statistics of the overall performance.

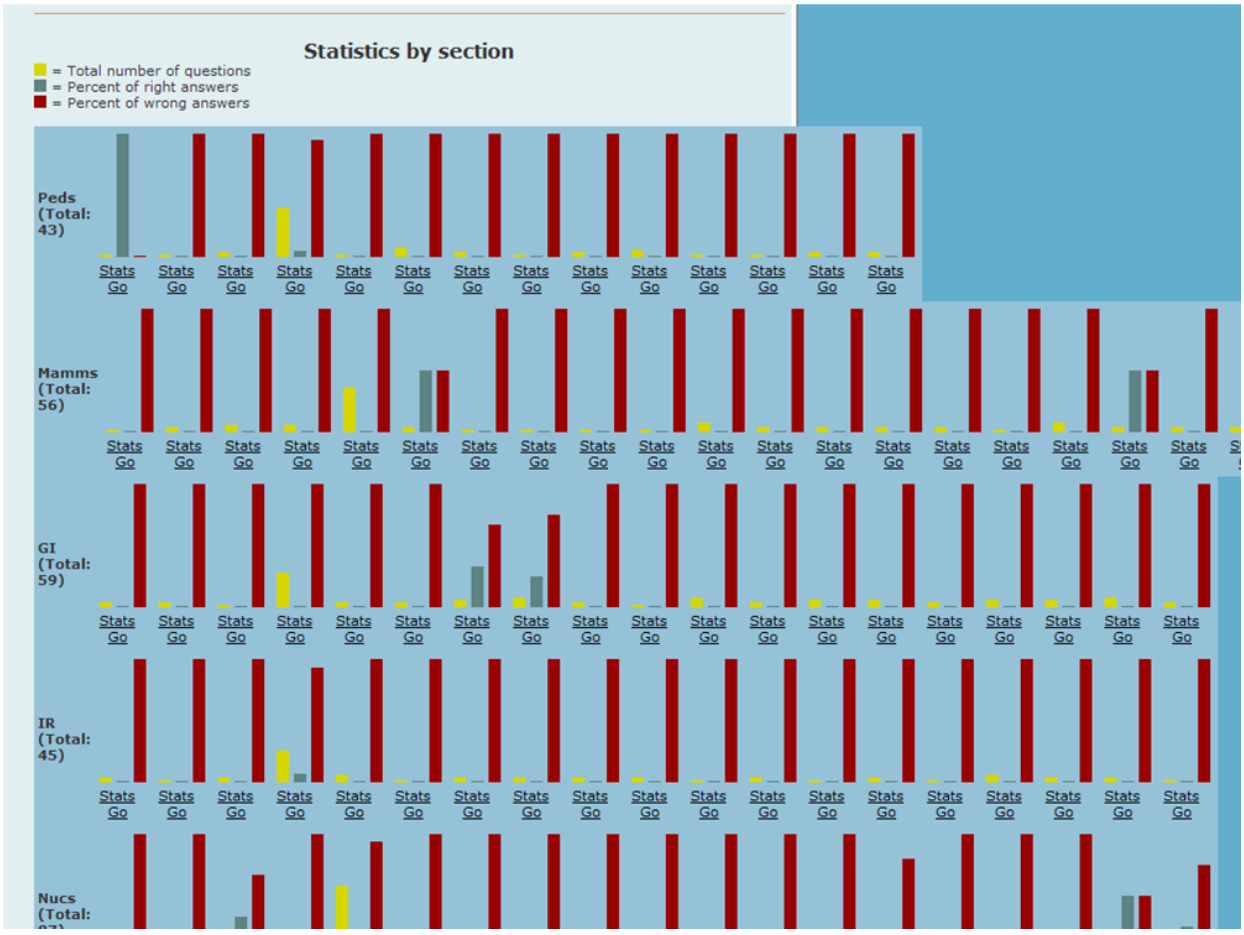

Figure 5: Comprehensive statistics unveil the user's strengths and weaknesses to help focusing on "weak" areas. These statistics determine the learning curve of the user and demonstrate graphic statistics of performance for individual sections.

Figure 6: The search area allows searching the entire database in a broad/general fashion or within specific categories. The search can be narrowed down by only searching within sections, questions, answers, explanations, diagnoses, keywords etc.

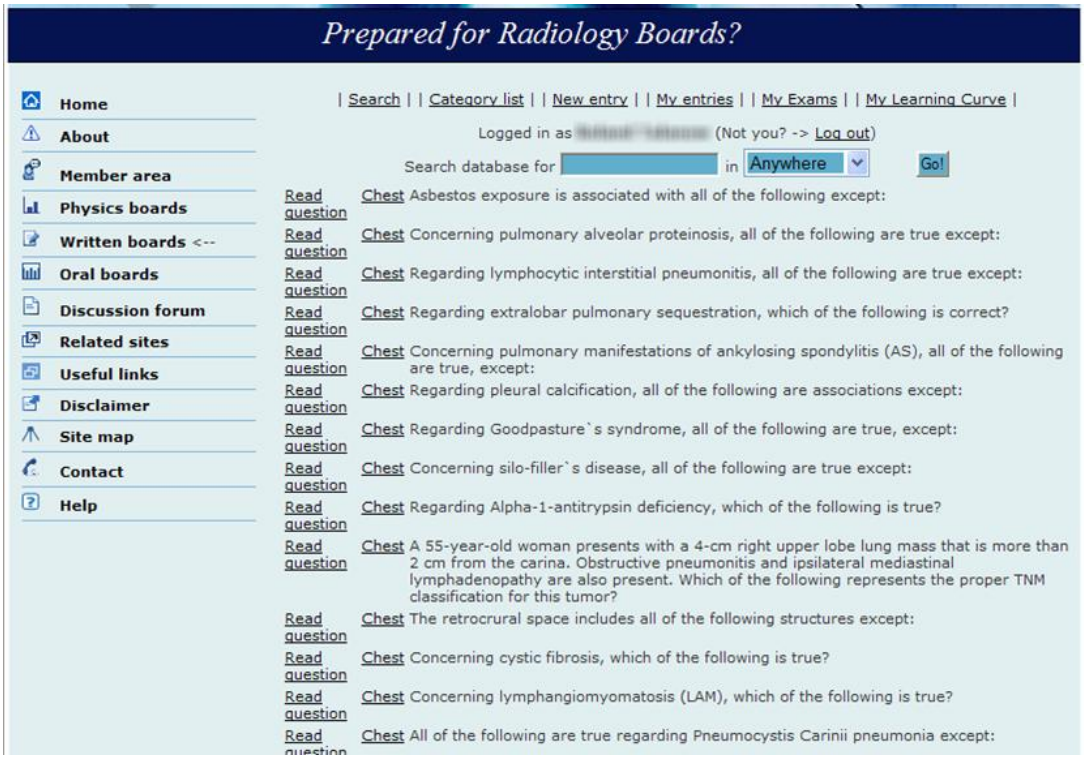

Figure 7: Every question is listed and may be reviewed by clicking on "Read question". In addition the respective section is displayed and can be also accessed.

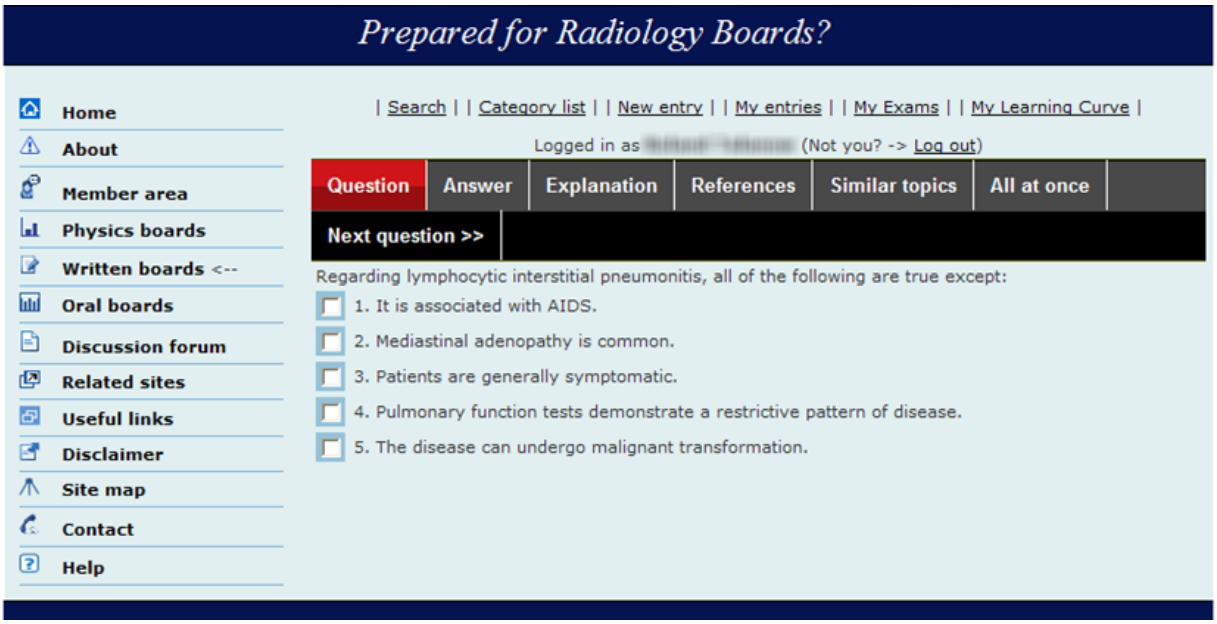

Figure 8: Question review mode - By clicking on the appropriate tabs the user may read the question, answer, explanation, literature references and links to similar topics and help by a Radiology specific search engine to find additional peer reviewed information on the Internet.

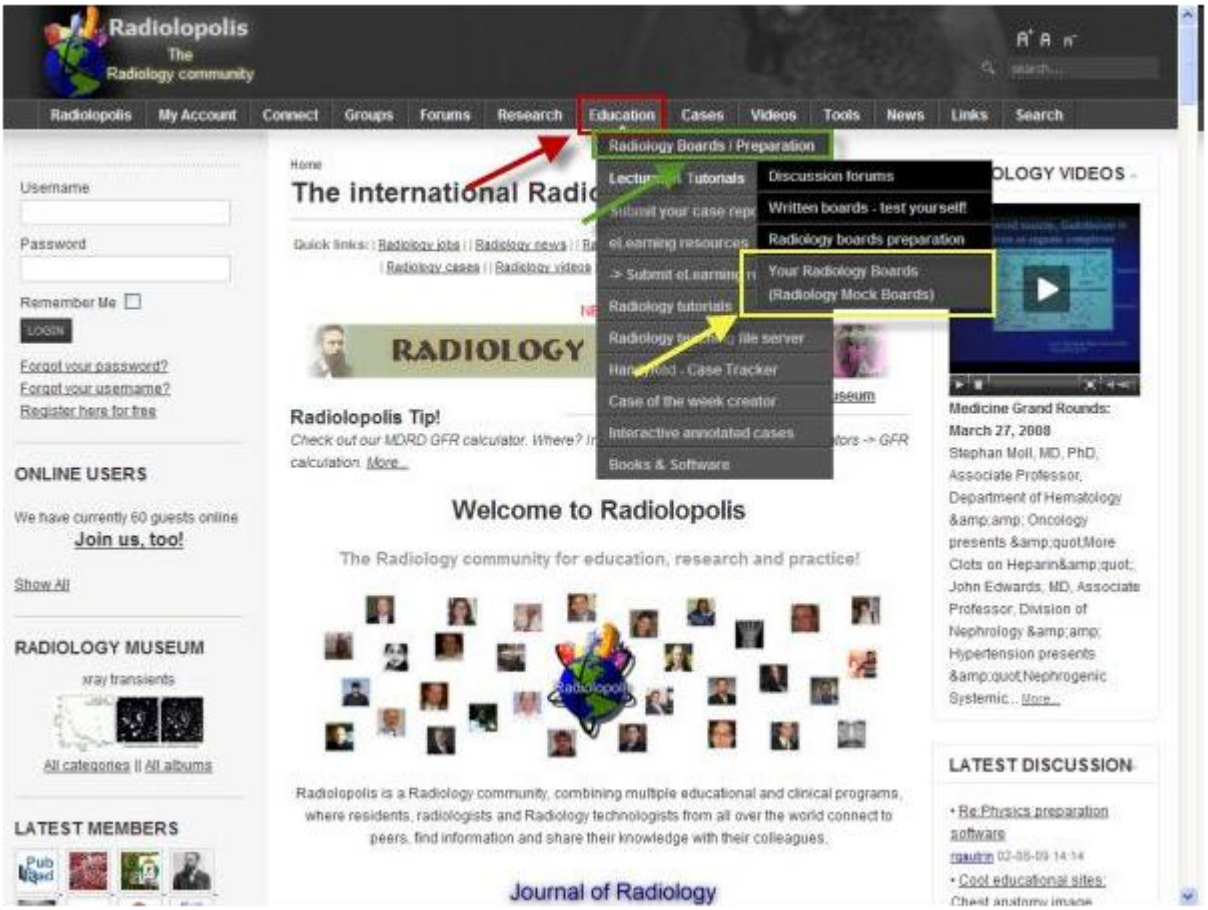

Figure 9: Community integration - Radiology Boards has been implemented into Radiolopolis, an international Radiology community for education, research and clinical practice and users may share and use the contents and features also within this educational Radiology network. Radiolopolis members are automatically associated with a Radiology Boards account.

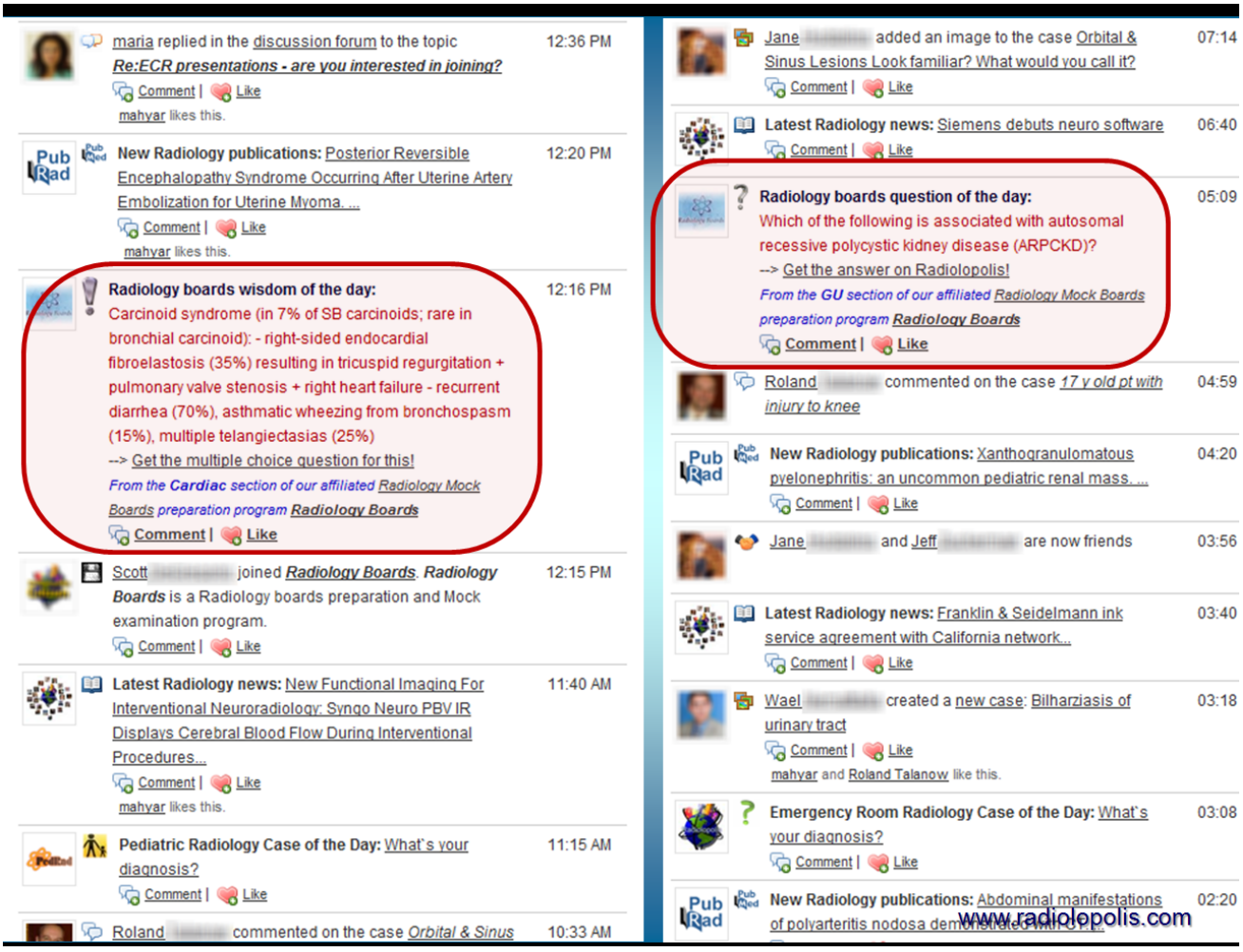

Figure 10: Community integration - Radiology Boards has been implemented into Radiolopolis, an international Radiology community for education, research and clinical practice and users may share and use the contents and features also within this educational Radiology network. Radiology Boards provides educational features within the "activity stream" on Radiolopolis such as "Teaching points" and "Questions of the day".

REFERENCES

1. The American Board of Radiology. http://www.theabr.org. Last accessed on 02/10/2011

2. Diagnostic Radiology CORE Examination Study Guide 2011. http://www.theabr.org/forms/CORE%20Exam%20Study%20Guide_FINAL.pdf. Last accessed on 02/10/2011

3. The Exam of the Future: FAQs. http://www.theabr.org/present/faq_ic_v2.pdf. Last accessed on 02/10/2011

4. Talanow R. Prepared for Radiology Boards? A New Concept for Radiology Exam Preparation. AJR 2010; 194:A137-A154

5. Radiolopolis - the professional Radiology network for education, research and clinical practice. URL: http://www.radiolopolis.com - last accessed: 02/10/2011

6. Talanow R, Giesel F. Educational treasures in Radiology: Radiolopolis – an international Radiology community. Radiology Case. 2009 Aug;3(9):34-36.

KEYWORDS

Radiology boards; Radiology exam; exam preparation; Radiology examination

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