

System For Determining Accuracy Of Matching A Subject Text Passage To A Reference Text Passage and Method Thereof

Technical Field

[0001] The present invention relates to a system for determining accuracy of matching a subject text passage to a reference text passage and a method thereof. For example, a system for determining accuracy of matching an answer script to a model answer script and a method thereof.

Background

[0002] As the role of teachers has been expanding, their workload has been increasing. Besides teaching and carrying out extra-curricular activities, the teachers have to mark assignments and examination papers of students. While this is an essential part of teaching, it is time consuming and repetitive. As a result, the teachers may suffer from fatigue and may not be able to provide comprehensive feedback to the students. Therefore, it would be beneficial if a solution is provided to off load some or all of the marking of the assignments and examination papers from the teachers so that the teachers are able to make better use of the time to prepare for upcoming lessons, supervise and interact with the students.

[0003] There have been systems provided to match a subject text passage, e.g. assignments and examination papers, to a reference text passage, e.g. model answers of the assignments and examination papers. However, such systems are restrictive and do not provide an accurate assessment of the students' answers. For example, some systems are only able to read multiple-choice answers which would not be able to handle essay type answers. Some systems are able to handle essay type answers; however, such systems do not provide accurate matching between the passages. Often, the systems are not able to identify the points in the answer and would not be able to provide accurate assessment of the answers.

[0004] Therefore, it is beneficial to provide a system that is able to more accurately assess and mark assignments and examination papers so that the teachers can be relieved of such tasks and focus more time on teaching the students.

Summary

[0005] According to various embodiments, a system for determining the accuracy of matching a subject text passage to a reference text passage is provided. The system includes a retrieving module configured to retrieve the reference text passage, a determining module configured to determine a plurality of sub-reference text passages from the reference text passage, a conversion module configured to convert the plurality of sub-reference text passages into a plurality of vector representations, a receiving module configured to receive the subject text passage, such that the conversion module is configured to convert the subject text into a vector representation, a processing module configured to compare each of the plurality of vector representations with the vector representation and generate an accuracy value for the comparison between each of the plurality of vector representations and the vector representation, such that the processing module is configured to determine an accuracy threshold value for determining the accuracy of each of the plurality of the vector representations and the vector representation, and assign an accuracy score for each accuracy value higher than the accuracy threshold value, such that the accuracy of the subject text passage to the reference text passage is based on the sum of the accuracy scores.

[0006] According to various embodiments, the determining module may be configured to insert a terminator at the end of each passage of the plurality of sub-reference text passages.

[0007] According to various embodiments, the system may further be configured to retrieve one or more key terms for each of the plurality of sub-reference text passages, such that the system may be configured to identify the one or more key terms in each of the plurality of sub-reference text passages, such that the accuracy score may be assigned when the one or more key terms are identified in the subject text passage.

[0008] According to various embodiments, the vector representation comprises a vector space model.

[0009] According to various embodiments, the processing module may be configured to display an accurate sub-reference text passage from the plurality of sub-reference text

passages, such that the accurate sub-reference text passage may be determined when the accuracy value of the comparison between the vector representation of the sub-reference text passage and the vector representation of the subject text passage is higher than or equal to the accuracy threshold value.

[0010] According to various embodiments, the processing module may be configured to display an inaccurate sub-reference text passage from the plurality of sub-reference text passages, such that the inaccurate sub-reference text passage may be determined when the accuracy value of the comparison between the vector representation of the sub-reference text passage and the vector representation of the subject text passage is lower than the accuracy threshold value.

[0011] According to various embodiments, a method for determining the accuracy of a subject text passage to a reference text passage is presented. The method includes retrieving the reference text passage from a database, determining a plurality of sub-reference text passages from the reference text passage, converting the plurality of sub-reference text passages into a plurality of vector representations, receiving the subject text passage, converting the subject text into a vector representation, comparing the plurality of vector representations with the vector representation, generating an accuracy value for the comparison between each of the plurality of vector representations and the vector representation, determining an accuracy threshold value for determining the accuracy of each of the plurality of the vector representations and the vector representation, and assigning an accuracy score for each accuracy value higher than the accuracy threshold value, such that the accuracy of the subject text passage to the reference text passage is based on the sum of the accuracy scores.

[0012] According to various embodiments, the method may further include inserting a terminator at the end of each passage of the plurality of sub-reference text passages.

[0013] According to various embodiments, the method may further include retrieving one or more key terms for each of the plurality of sub-reference text passages, such that the system may be configured to identify the one or more key terms in each of the plurality of sub-

reference text passages, such that the accuracy score may be assigned when the one or more key terms are identified in the subject text passage.

[0014] According to various embodiments, the vector representation may include a vector space model.

[0015] According to various embodiments, the method may further include displaying an accurate sub-reference text passage from the plurality of sub-reference text passages, such that the accurate sub-reference text passage may be determined when the accuracy value of the comparison between the vector representation of the sub-reference text passage and the vector representation of the subject text passage is higher than or equal to the accuracy threshold value.

[0016] According to various embodiments, the method may further include displaying an inaccurate sub-reference text passage from the plurality of sub-reference text passages, such that the inaccurate sub-reference text passage may be determined when the accuracy value of the comparison between the vector representation of the sub-reference text passage and the vector representation of the subject text passage is lower than the accuracy threshold value.

[0017] According to various embodiments, a computer-implemented method for determining the accuracy of a subject text passage to a reference text passage is presented, the method includes retrieving the reference text passage from a database, determining a plurality of sub-reference text passages from the reference text passage, converting the plurality of sub-reference text passages into a plurality of vector representations, receiving the subject text passage, converting the subject text into a vector representation, comparing the plurality of vector representations with the vector representation, generating an accuracy value for the comparison between each of the plurality of vector representations and the vector representation, determining an accuracy threshold value for determining the accuracy of each of the plurality of the vector representations and the vector representation, and assigning an accuracy score for each accuracy value higher than the accuracy threshold value, such that the accuracy of the subject text passage to the reference text passage may be based on the sum of the accuracy scores.

Brief Description of Drawings

[0018] Fig. 1 shows an exemplary embodiment of a system for determining the accuracy of matching a subject text passage to a reference text passage.

[0019] Fig. 2 shows an exemplary embodiment of the web server.

[0020] Fig. 3A shows an example of a set of questions displayed on a terminal for the teacher.

[0021] Fig. 3B shows an example of a reference text passage based on the set of questions.

[0022] Fig. 3C shows an example of a student's user interface.

[0023] Fig. 4 shows an exemplary flowchart of a method for determining the accuracy of the subject text passage to the reference text passage.

[0024] Fig. 5A shows an example of the reference text passage.

[0025] Fig. 5B shows an example of accurate sub-reference text passages of the plurality of reference text passages being displayed on the terminal.

[0026] Fig. 5C shows an example of inaccurate sub-reference text passages of the reference text passages being displayed on the terminal.

[0027] Fig. 5D shows an example of a student's assignment record page.

[0028] Fig. 5E shows an example of a feedback page.

[0029] Fig. 6A shows an example of a marking scheme for generating the total score.

[0030] Fig. 6B shows an example of a marking rules for generating the total score.

[0031] Fig. 7 shows an example of the feedback page.

[0032] Fig. 8 shows an exemplary flowchart of a method determining the accuracy of matching a subject text passage to a reference text passage.

Detailed Description

[0033] Fig. 1 shows an exemplary embodiment of a system 100 for determining the accuracy of matching a subject text passage to a reference text passage. System 100 may include a data server 110 configured to host the database of the system 100, a web server 120 connected to the data server 110 via a network 130 and configured to host back-end processing facilities of the system 100 and one or more terminals 140T,140S connected to data server 110 and the web server 120 via the network 130 and configured to host front end processing facilities of the system 100. Data server 110 and web server 120 may be a single server. Each of the one or more terminals 140 may be a desktop computer, a mobile device with a screen, e.g. a laptop, a mobile phone.

[0034] Fig. 2 shows an exemplary embodiment of the web server 120. Web server 120 includes a retrieving module 122 configured to retrieve the reference text passage, a determining module 124 configured to determine a plurality of sub-reference text passages from the reference text passage, a conversion module 126 configured to convert the plurality of sub-reference text passages into a plurality of vector representations, a receiving module 128 configured to receive the subject text passage, wherein the conversion module 126 is configured to convert the subject text passage into a vector representation, a processing module 129 configured to compare the plurality of vector representations with the vector representation and generate an accuracy value for the comparison between each of the plurality of vector representations and the vector representation, such that the processing module 129 is configured to determine an accuracy threshold value for determining the accuracy of each of the plurality of the vector representations and the vector representation,

and assign an accuracy score for each accuracy value higher than the accuracy threshold value, such that the accuracy of the subject text passage to the reference text passage is based on the sum of the accuracy scores. Subject text passage may be an answer script, e.g. type-written paragraphs. Reference text passage may include a model answer script, e.g. type-written paragraphs. Reference text passage may be stored in the data server 110 and retrieved by the web server 120.

[0035] Fig. 3A shows an example of a set of questions 302 displayed on a terminal 140 for the teacher, i.e. teacher's terminal 140T. System 100 may retrieve the set of questions 302 from the data server 110 and display the set of questions 302 on the terminal's terminal 140T. Alternatively, the system 100 may receive the set of questions 302 from the teacher via the teacher's terminal 140T and store the set of questions 302 in the data server 110.

[0036] Fig. 3B shows an example of a reference text passage 304, e.g. a set of model answers, based on the set of questions 302. System 100 may receive the reference text passage 304 from the teacher's terminal 140T when the reference text passage 304 are inputted by the teacher. Reference text passage 304 may be stored in the data server 110. As shown in Fig. 3B, the reference text passage 304 may include the main points of the set of model answers. Reference text passage 304 may be segmented into a plurality of sub-reference text passages such that each of the plurality of paragraphs may include a main point of the set of model answers. For example, the set of model answers may be segregated into a plurality of paragraphs, each having a main point of the set of model answers. In addition, the teacher may identify key terms in each of the plurality of sub-reference text passages. System 100 may receive the key terms for each of the plurality of sub-reference text passages from the teacher's terminal and store the key terms in the data server 110.

[0037] Fig. 3C shows an example of a student's user interface. A student may log into the system 100 and attempt the set of questions 302. The student may select the set of questions 302 in the user interface displayed on the terminal 140 for the student, i.e. student's terminal 140S, for the student to answer. Upon display of the set of questions 302, the student may input the subject text passage, i.e. his or her set of answers, into the terminal. Once

completed, the system 100 may receive the subject text passage and store it in the data server 110.

[0038] Fig. 4 shows an exemplary flowchart of a method 400 for determining the accuracy of the subject text passage to the reference text passage 304. Method 400 may be a computer implemented method. To determine the accuracy of the match between the subject text passage and the reference text passage 304, the reference text passage 304 is retrieved from a database in the data server 110 in block 410. A plurality of sub-reference text passages is determined from the reference text passage 304 in block 420. As shown above, the reference text passage 304 may be segmented into a plurality of sub-reference text passage, i.e. the plurality of paragraphs. The plurality of sub-reference text passages is converted into a plurality of vector representations in block 430. Subject text passage is received at block 440. Subject text passage is converted into a vector representation in block 450. Subject text passage, i.e. the set of answers, may be retrieved from the data server 110. Plurality of vector representations are compared with the vector representation in block 460 and an accuracy value is generated for the comparison between each of the plurality of vector representations and the vector representation in block 470. An accuracy threshold value is determined for determining the accuracy of each of the plurality of the vector representations and the vector representation in block 480. An accuracy score is assigned for each accuracy value higher than the accuracy threshold value in block 490, such that the accuracy of the subject text passage to the reference text passage 304 is based on the sum of the accuracy scores. Based on the accuracy scores, the teacher is able to assess how close the student's answer is to the reference text passage 304. Vector representation may be a vector space model or term vector model that is an algebraic model for representing the text, passages, etc.

[0039] Fig. 5A shows an example of the reference text passage 304. Reference text passage 304 may include the set of model answers which can be broken down into a plurality of main points. The plurality of main points may be numbered or serialized. Accordingly, the system 100 may serialize the plurality of sub-reference text passages by insert a serial number at the beginning of each passage of the plurality of sub-reference text passages. System 100 may be configured to insert a terminator 502 at the end of each passage of the plurality of sub-reference text passages 304 to denote the end of a main point or sub-reference text passage.

For example, as shown in Fig. 5A, each of the plurality of sub-reference text passage may be serially numbered and the terminator 502, i.e. an [Endpoint], may be inserted at the end thereof to denote the end of the sub-reference text passage. System 100, using the conversion module 126, may be configured to convert the plurality of sub-reference text passages into the plurality of vector representations. After conversion, based on the terminator, the system 100, using the determining module 124, may be able to identify or determine the plurality of sub-reference text passages of the reference text passage 304. As mentioned, each of the plurality of sub-reference text passages may be converted into a vector representation, e.g. a vector space model.

[0040] To determine the accuracy of the student's set of answers, the system 100 may, using the receiving module 128, receive the subject text passage from the student's terminal 140S. Alternatively, the system 100 may retrieve the subject text passage from the data server 110 if the subject text passage has been stored in the data server 110. System 100 may, using the conversion module 126, convert the subject text passage into a vector representation, e.g. a vector space model. System 100 may, using the processing module 129, compare the plurality of vector representations of the reference text passage 304 with the vector representation of the subject text passage to generate an accuracy value. System 100 may determine an accuracy threshold value for determining the accuracy, or how close the subject text passage is to the reference text passage 304. Accuracy threshold value may be obtained from the teacher. System 100 may receive the accuracy threshold value from the teacher terminal 140T and store the accuracy threshold value in the data server 110. Accuracy threshold value may range from 0 to 1. For example, accuracy threshold value may be 0.5. If the teacher wishes to increase the accuracy level, the accuracy threshold value may be 0.6, 0.7, 0.75, etc.

[0041] System 100 may compare the vector representation of each of the plurality of sub-reference text passages with the vector representation of the reference text passage 304 and generate an accuracy value for each comparison between the vector representation of the compared sub-reference text passage and the vector representation of the reference text passage 304. System 100 may compare the accuracy value with the accuracy threshold value and assign an accuracy status if the accuracy value is higher than or equal to the accuracy threshold value.

[0042] System 100 may be configured to receive one or more key terms from the teacher via the teacher's terminal. One or more key terms, e.g. key word, key phrases, may be identified by the teacher for each of the plurality of sub-reference text passages to ensure that the one or more key terms are identified in the subject text passage during the comparison. When comparing the plurality of vector representations of the plurality of sub-reference text passages with the vector representation of the subject text passage, the system 100 may be configured to identify the one or more key terms for each of the plurality of sub-reference text passages in the subject text passage. System 100 may assign the accuracy score or an accurate status only when the one or more key terms are found in the subject text passage. In the event that the accuracy value is higher than the accuracy threshold value during the comparison between one of the plurality of vector representations of the plurality of sub-reference text passages and the vector representation of the subject text passage but the one or more key terms are not found in the relevant sub-reference text passage, the system 100 would not assign an accuracy score or an accuracy status for the relevant sub-reference text passage.

[0043] Fig. 5B shows an example of accurate sub-reference text passages 304AS of the plurality of sub-reference text passages 304S being displayed on the terminal 140, e.g. the student terminal 140S. System 100 may be configured to provide a feedback for the set of answers to the student. System 100 may display the accurate sub-reference text passages 304AS on the student's terminal 140S to show the student the portion of the set of answers that have been answered correctly or accurately, i.e. matches the set of model answers or when it has an accurate status. Accurate sub-reference text passages 304AS may include the one or more of the plurality of paragraphs of the set of model answers that have accuracy values that are higher than or equal to the accuracy threshold value when the plurality of vector representations are compared to the vector representation. Accurate sub-reference text passages 304AS may be determined when the accuracy value of the comparison between the vector representation of the sub-reference text passage and the vector representation of the subject text passage is higher than or equal to the accuracy threshold value.

[0044] System may display an overlap scale 305 to show the degree of overlap in the language in the subject text passage, i.e. used by the student in the set of answers, compared to the language in the reference text passage, i.e. used by the teacher in the set of model

answers. Overlap scale 305 may be banded, e.g. Band 1 (lowest) to Band 10 (highest), to indicate the accuracy of the subject text passage to the reference text passage. Language is an important component in determining the accuracy of the subject text passage to the reference text passage.

[0045] Fig. 5C shows an example of inaccurate sub-reference text passages 304AI of the plurality of sub-reference text passages 304S being displayed on the terminal 140, e.g. the student terminal 140S. Inaccurate sub-reference text passages 304AI may include the one or more of the plurality of paragraphs of the set of model answers that have accuracy values that are lower than the accuracy threshold value when the plurality of vector representations are compared to the vector representation. Inaccurate sub-reference text passages 304AI may be determined when the accuracy value of the comparison between the vector representation of the sub-reference text passage and the vector representation of the subject text passage is lower than the accuracy threshold value. System 100 may display the inaccurate sub-reference text passages 304AI on the student's terminal 140S to show the student the portion of the set of answers that have been omitted or answered incorrectly or inaccurately, i.e. does not match the set of model answers or does not have an accurate status. In this way, the student is able to learn instantly the main points that were not included in his or her set of answers. Set of accurate sub-reference text passages 304AS may be distinguished from the set of inaccurate sub-reference text passages 304AI. Set of accurate sub-reference text passages 304AS may be coloured differently and contrastingly from the set of inaccurate sub-reference text passages 304AI. For example, the set of accurate sub-reference text passages 304AS may be displayed in green and the set of inaccurate sub-reference text passages 304AI may be displayed in red. In this way, the student may quickly identify the inaccurate sub-reference text passages 304AI. As shown, the system 100 may be configured to provide a point-by-point feedback to the student. For example, the system 100 may display the relevant accurate sub-reference text passage 304AS or inaccurate sub-reference text passage 304AI adjacent the respective portion of subject text passage.

[0046] Fig. 5D shows an example of a student's assignment record page 510. The assignment record page 510 may be displayed on the student's terminal. The assignment record page 510 shows the assignments attempted by the student and the respective total score. The student,

upon receiving the total score, may wish to view the feedback from the teacher. The assignment record page 510 may include a feedback button for each of the assignments. The student may activate the feedback button to display a feedback page, e.g. clicking the feedback button. System 100 may receive a feedback activation signal to activate a feedback page. Upon receiving the feedback signal, the system 100 may retrieve the feedback page 510 from the web server 120 and display the feedback page 510 on the student terminal 140S.

[0047] Fig. 5E shows an example of a feedback page 520. Student's terminal 140S may display the feedback page 510 which may include the set of questions 302, the reference text passage 304, i.e. the set of model answers, and the subject text passage, i.e. the set of answers. As shown in Fig. 5E, the set of questions 302 may be displayed in a first column 520A, the set of answers may be displayed in a second column 520B and the set of model answers may be arranged in a third column 520C. Plurality of sub-reference text passage 304S, i.e. the set of model answers, may be arranged in the order of the set of answers to show the student a comparison between the subject text passage, i.e. the set of answers, by the student and the reference text passage 304, i.e. the set of model answer. Further, the total score may be displayed in a fourth column 520D to show the total marks that the student's set of answer has achieved, a teacher's feedback may be displayed in a fifth column 520E, and an answer's explanation 520A may be displayed in a sixth column 520F.

[0048] Fig. 6A shows an example of a marking scheme 630 for generating the total score. System 100 may include a marking module configured to generate the total score for the subject text passage. Based on the number of sub-reference text passages in the plurality of sub-reference text passages, the marking module may be configured to generate an equivalent number of marking schemes. Referring to Fig. 6A, an example of a marking scheme for four questions is provided. For a set of 4 questions, 4 marking schemes are generated. Each marking scheme is generated for each number of marks, e.g. one marking scheme for '1' mark, one marking scheme for '2' marks, etc. For a set of 4 questions, there may be 4 paragraphs in the set of model answers, each having a paragraph-number and the terminator. If the subject text passage, i.e. the student's set of answers matches the reference text passage, i.e. the set of model answers, completely, the student will be awarded 4 marks. Accordingly, if the set of answers matches only 3 of the paragraphs of the set of model

answers, 3 marks will be awarded, so on and so forth. The marks allocated for each marking scheme may be assigned by the teacher. For example, 2 marks may be allocated for each question. Hence, the mark for each marking scheme may be 8, 6, 4, 2 instead of 4, 3, 2, 1.

[0049] Fig. 6B shows an example of a marking rules 632 for generating the total score. For each marking scheme, the system 100, using the marking module, may generate a number of marking rules that is equivalent to the number of combinations of matched answers to obtain the marks allocated. For example, for the marking scheme for 4 marks, there is only 1 marking rule generated as there is only 1 combination that obtains 4 marks. For the marking scheme for 3 marks, there are 4 marking rules as there are 4 combination that obtains 3 marks. For the marking scheme for 2 marks, there are 6 combinations that obtains 2 marks. For the marking scheme for 1 mark, there are 4 combinations that obtains 1 mark. System 100 may match the serial numbers of the set of model answers matched with the marking rules and assign the marks that corresponds to the marking rule matched. For example, if the student has a set of answers that matches only questions 1 and 3 of the set of questions 302, the system 100 may identify the marking rule with “P1,P3” and assign the corresponding mark “2” to the student. If the student’s set of answers matches only question 4, the system 100 may identify the marking rule “P4” and assign the corresponding mark “1” to the student. As shown, a marking scheme for any number of questions may be generated accordingly, e.g. 10 questions. The marks generated may be stored as the total score. Marking scheme 630 and the marking rule 632 may provide a straight forward, easy and possibly a resource friendly method for generating the total score. Marking module, marking scheme and marking rules may be stored in the data server 110 or web server 120.

[0050] Fig. 7 shows an example of the feedback page 720. System 100 may be configured to receive a request for reassessing the subject text passage. System 100 may display a request button 722 configured to receive the request from the student. If the student wishes to make a request to reassess the subject text passage, the student may activate the request button, e.g. clicking the request button. Upon receipt of the request, the system 100 may be configured to transmit the request to the teacher’s terminal. At the same time, the system 100 may be configured to the subject text passage to the teacher’s terminal 140T for the teacher’s reference. System 100 may transmit the reference text passage 304 to the teacher’s terminal 140T. System 100 may transmit the relevant passage of the subject text passage and the

relevant passage in the plurality of sub-reference text passage 304S to the teacher's terminal 140T for the teacher's easy reference. System 100 may be configured to display the subject text passage and the reference text passage 304 on the teacher's terminal 140T. System 100 may be configured to display the relevant passage of the subject text passage and the relevant passage in the plurality of sub-reference text passage 304S on the teacher's terminal 140T. System 100 may be configured to receive a reassessment input from the teacher's terminal 140T after the teacher has reassessed the subject text passage. Reassessment input may be binary, e.g. positive or negative. If the reassessment input is positive, i.e. the teacher is of the opinion that the student's set of answers is close to the set of model answer, the system 100 may re-generate the total score, via the marking module. If the reassessment input is negative, no further action is required. System 100 may be configured to assign another set of questions 302 to the student's terminal 140S if the total score is below a passing threshold score determined by the teacher.

[0051] Fig. 8 shows an exemplary flowchart 800 of a method determining the accuracy of matching a subject text passage to a reference text passage 304. Flowchart 800 commences with the system 100 receiving the subject text passage at 802 from the student terminal. Upon receiving the subject text passage at 802, the system 100 may convert the subject text passage to the vector representation at 804. Meanwhile, the system 100 may receive or retrieve the reference text passage 304 at 806. System 100 may determine the plurality of sub-reference text passages at 808. System 100 may receive and determine one or more key words for each of the plurality of sub-reference text passages at 808. System 100 may insert a terminator at the end of each of the passage of the plurality of sub-reference text passages at 810. Thereafter, the system 100 may convert the plurality of sub-reference text passages to the plurality of vector representation at 804. Once both the conversion is completed, the system 100 may compare each of the plurality of vector representations with the vector representation at 812. With each comparison, the system 100 may generate an accuracy score and compare the accuracy score with the accuracy threshold score at 814. If the accuracy score is higher than the accuracy threshold score, the passage of the plurality of sub-reference passage matches the subject text passage and an accurate status is generated. System 100 may compute and generate the total score at 816 and the total score may be generated and may be stored in the data server 110 or displayed at a terminal 140 at 818. System 100 may provide a feedback, e.g. a point-by-point feedback at 820. Feedback may be generated and stored in the

data server 110 and may be displayed on the terminals 140 at 822. System 100 may receive a request to reassess the subject text passage during the display of the feedback. Once the feedback is completed, depending on the reassessment of the subject text passage, the system 100 may generate the total score at 814. Hence, the flowchart 800 ends. If the accuracy value is lower than the accuracy threshold value, i.e. the plurality of sub-reference passage do not match the subject text passage and an accurate status is not generated, the system 100 may be configured to assign a new set of questions 302 to the student. If the system 100 assigns a new set of questions 302 to the student, the student may provide a set of answers, i.e. the subject text passage, to the system 100 at 802. If the system 100 does not assign a new set of questions, a nil score or the total score may be generated.

[0052] A skilled person would appreciate that the features described in one example may not be restricted to that example and may be combined with any one of the other examples.

[0053] The present invention relates to a system for determining the accuracy of matching a subject text passage to a reference text passage and a method thereof generally as herein described, with reference to and/or illustrated in the accompanying drawings.

Claim

1. A system for determining the accuracy of matching a subject text passage to a reference text passage, the system comprising,
 - a retrieving module configured to retrieve the reference text passage,
 - a determining module configured to determine a plurality of sub-reference text passages from the reference text passage,
 - a conversion module configured to convert the plurality of sub-reference text passages into a plurality of vector representations,
 - a receiving module configured to receive the subject text passage, wherein the conversion module is configured to convert the subject text into a vector representation,
 - a processing module configured to compare each of the plurality of vector representations with the vector representation and generate an accuracy value for the comparison between each of the plurality of vector representations and the vector representation,
 - wherein the processing module is configured to determine an accuracy threshold value for determining the accuracy of each of the plurality of the vector representations and the vector representation, and
 - assign an accuracy score for each accuracy value higher than the accuracy threshold value, wherein the accuracy of the subject text passage to the reference text passage is based on the sum of the accuracy scores.
2. The system according to claim 1, wherein the determining module is configured to insert a terminator at the end of each passage of the plurality of sub-reference text passages.
3. The system according to claim 1 or 2, further configured to retrieve one or more key terms for each of the plurality of sub-reference text passages, wherein the system is configured to identify the one or more key terms in each of the plurality of sub-reference text passages, wherein the accuracy score is assigned when the one or more key terms are identified in the subject text passage.
4. The system according to any one of claims 1 to 3, wherein the vector representation comprises a vector space model.

5. The system according to any one of claims 1 to 4, wherein the processing module is configured to display an accurate sub-reference text passage from the plurality of sub-reference text passages, wherein the accurate sub-reference text passage is determined when the accuracy value of the comparison between the vector representation of the sub-reference text passage and the vector representation of the subject text passage is higher than or equal to the accuracy threshold value.

6. The system according to any one of claims 1 to 5, wherein the processing module is configured to display an inaccurate sub-reference text passage from the plurality of sub-reference text passages, wherein the inaccurate sub-reference text passage is determined when the accuracy value of the comparison between the vector representation of the sub-reference text passage and the vector representation of the subject text passage is lower than the accuracy threshold value.

7. A method for determining the accuracy of a subject text passage to a reference text passage, the method comprising:

- retrieving the reference text passage from a database,
- determining a plurality of sub-reference text passages from the reference text passage,
- converting the plurality of sub-reference text passages into a plurality of vector representations,
- receiving the subject text passage,
- converting the subject text into a vector representation,
- comparing the plurality of vector representations with the vector representation,
- generating an accuracy value for the comparison between each of the plurality of vector representations and the vector representation,
- determining an accuracy threshold value for determining the accuracy of each of the plurality of the vector representations and the vector representation, and
- assigning an accuracy score for each accuracy value higher than the accuracy threshold value, wherein the accuracy of the subject text passage to the reference text passage is based on the sum of the accuracy scores.

8. The method according to claim 7, further comprising inserting a terminator at the end of each passage of the plurality of sub-reference text passages.

9. The method according to claim 7 or 8, further comprising retrieving one or more key terms for each of the plurality of sub-reference text passages, wherein the system is configured to identify the one or more key terms in each of the plurality of sub-reference text passages, wherein the accuracy score is assigned when the one or more key terms are identified in the subject text passage.

10. The method according to any one of claims 7 to 9, wherein the vector representation comprises a vector space model.

11. The method according to any one of claims 7 to 10, further comprising displaying an accurate sub-reference text passage from the plurality of sub-reference text passages, wherein the accurate sub-reference text passage is determined when the accuracy value of the comparison between the vector representation of the sub-reference text passage and the vector representation of the subject text passage is higher than or equal to the accuracy threshold value.

12. The method according to any one of claims 7 to 11, further comprising displaying an inaccurate sub-reference text passage from the plurality of sub-reference text passages, wherein the inaccurate sub-reference text passage is determined when the accuracy value of the comparison between the vector representation of the sub-reference text passage and the vector representation of the subject text passage is lower than the accuracy threshold value.

13. A computer-implemented method for determining the accuracy of a subject text passage to a reference text passage, the method comprising:

- retrieving the reference text passage from a database,
- determining a plurality of sub-reference text passages from the reference text passage,
- converting the plurality of sub-reference text passages into a plurality of vector representations,
- receiving the subject text passage,
- converting the subject text into a vector representation,

comparing the plurality of vector representations with the vector representation,
generating an accuracy value for the comparison between each of the plurality of
vector representations and the vector representation,
determining an accuracy threshold value for determining the accuracy of each of the
plurality of the vector representations and the vector representation, and
assigning an accuracy score for each accuracy value higher than the accuracy
threshold value, wherein the accuracy of the subject text passage to the reference text passage
is based on the sum of the accuracy scores.