CLAIMS

What is claimed is:

1. A curriculum optimisation method, comprising at least:

collecting lecture information, wherein the lecture information comprises a lecture video;

performing knowledge point recognition on the lecture video to obtain knowledge point information;

segmenting the lecture video according to the knowledge point information;

evaluating the lecture video segmented to obtain an optimum video of each of knowledge points; and

making courseware according to structural information corresponding to the optimum video of each of the knowledge points, to obtain optimized courseware;

wherein in a case where more than two recognition manners are used to perform the knowledge point recognition, the segmenting the lecture video according to the knowledge point information, comprises:

clustering at least two sets of knowledge point information, corresponding to the lecture video, obtained through each of the recognition manners, according to knowledge points, wherein each of the knowledge points corresponds to more than two pieces of knowledge point information;

calculating credible scores for the more than two pieces of knowledge point information of each of the knowledge points respectively;

ranking the more than two credible scores calculated for each of the knowledge points, wherein the knowledge point information with a highest score is knowledge point segmentation information of the knowledge point;

forming a set of knowledge point segmentation information corresponding to the lecture video, according to the knowledge point segmentation information of each of the knowledge points; and

segmenting the lecture video according to the set of knowledge point segmentation information.

2. The method of claim 1, wherein the performing the knowledge point recognition on the lecture video, comprises:

performing the knowledge point recognition by using at least one recognition manner, wherein in a case where more than two recognition manners are used, weights of each recognition manner are different.

3. The method of claim 1 or 2, wherein the performing the knowledge point recognition on the lecture video, comprises:

performing knowledge point recognition by using at least one of OCR text recognition, video scene recognition, and voice recognition.

4. The method of any one of claims 1 to 3, wherein the knowledge point information comprises: a knowledge point, a video start time of the knowledge point, a video end time of the knowledge point, and a confidence level.

5. The method of any one of claims 1 to 4, wherein the lecture information further comprises real-time usage information, and

before the knowledge point recognition is performed on the lecture video, frames of the lecture video are sampled or a video voice sequence is extracted from the lecture video first, wherein timings of the sampling or extracting the video voice sequence are based on the real-time usage information.

~~6. The method of any one of claims 1 to 5, wherein the segmenting the lecture video according to the knowledge point information, comprises:~~

~~segmenting the knowledge point information to obtain knowledge point segmentation information; and~~

~~segmenting the lecture video according to the knowledge point segmentation information.~~

~~7. The method of claim 6, wherein in a case where more than two recognition manners are used to perform the knowledge point recognition, the segmenting the knowledge point information to obtain the knowledge point segmentation information, comprises:~~

~~clustering at least two sets of knowledge point information, corresponding to the lecture video, obtained through each of the recognition manners, according to knowledge points, wherein each of the knowledge points corresponds to more than two pieces of knowledge point information;~~

~~calculating credible scores for the more than two pieces of knowledge point information of each of the knowledge points respectively;~~

~~ranking the more than two credible scores calculated for each of the knowledge points, wherein the knowledge point information with a highest score is knowledge point segmentation information of the knowledge point; and~~

~~forming a set of knowledge point segmentation information corresponding to the lecture video, according to the knowledge point segmentation information of each of the knowledge points.~~

~~8~~6. The method of claim ~~7~~1, wherein after forming the set of knowledge point segmentation information corresponding to the lecture video, according to the knowledge point segmentation information of each of the knowledge points, the method further comprises:

performing time-axis verification on the set of knowledge point segmentation information.

~~9~~7. The method of claim ~~7~~ 1 or ~~8~~6, wherein the credible score is calculated by:

credible score = weight of recognition manner* confidence level of knowledge point information.

~~10~~8. The method of claim ~~6~~1, wherein ~~the segmenting the knowledge point information to obtain the knowledge point segmentation information, comprises:not segmenting the knowledge point information~~ in a case where only one recognition manner is used to perform the knowledge point recognition, ~~wherein~~ the knowledge point information obtained by using the only one recognition manner is used as the knowledge point segmentation information for segmenting the lecture video.

~~11~~9. The method of any one of claims 1 to ~~10~~8, wherein the structural information comprises: a video ID, a knowledge point, a video duration, the number of pages of the courseware, and a credible score.

~~12~~10. The method of any one of claims 1 to ~~11~~9, wherein the evaluating the lecture video segmented to obtain the optimum video of each of the knowledge points, comprises:

providing a video clip access platform for user access;

accessing, by the user, a video search recommendation system to search for a relevant knowledge point;

scoring, by the user, videos; and

integrating scores given by the user to obtain the optimum video of each of the knowledge points.

~~13~~11. A curriculum optimisation apparatus, comprising:

a lecture information collection unit, configured for collecting lecture information, wherein the lecture information comprises a lecture video;

a knowledge point recognition unit, configured for performing knowledge point recognition on the lecture video to obtain knowledge point information;

a video segmentation unit, configured for segmenting the lecture video according to the knowledge point information;

an evaluation unit, configured for evaluating the lecture video segmented to obtain an optimum video of each of knowledge points; and

an optimisation unit, configured for making courseware according to structural information corresponding to the optimum video of each of the knowledge points, to obtain optimized courseware;

wherein in a case where more than two recognition manners are used to perform the knowledge point recognition, the video segmentation unit is further configured for:

clustering at least two sets of knowledge point information, corresponding to the lecture video, obtained through each of the recognition manners, according to knowledge points, wherein each of the knowledge points corresponds to more than two pieces of knowledge point information;

calculating credible scores for the more than two pieces of knowledge point information of each of the knowledge points respectively;

ranking the more than two credible scores calculated for each of the knowledge points, wherein the knowledge point information with a highest score is knowledge point segmentation information of the knowledge point;

forming a set of knowledge point segmentation information corresponding to the lecture video, according to the knowledge point segmentation information of each of the knowledge points; and

segmenting the lecture video according to the set of knowledge point segmentation information.

~~14~~12. A curriculum optimisation system, comprising a memory and a processor, wherein the memory stores instructions, and the processor is configured for, according to the instructions stored in the memory, performing operations of:

collecting lecture information, wherein the lecture information comprises a lecture video;

performing knowledge point recognition on the lecture video to obtain knowledge point information;

segmenting the lecture video according to the knowledge point information;

evaluating the lecture video segmented to obtain an optimum video of each of knowledge points; and

making courseware according to structural information corresponding to the optimum video of each of the knowledge points, to obtain optimized courseware;

wherein in a case where more than two recognition manners are used to perform the knowledge point recognition, the segmenting the lecture video according to the knowledge point information, comprises:

clustering at least two sets of knowledge point information, corresponding to the lecture video, obtained through each of the recognition manners, according to knowledge points, wherein each of the knowledge points corresponds to more than two pieces of knowledge point information;

calculating credible scores for the more than two pieces of knowledge point information of each of the knowledge points respectively;

ranking the more than two credible scores calculated for each of the knowledge points, wherein the knowledge point information with a highest score is knowledge point segmentation information of the knowledge point;

forming a set of knowledge point segmentation information corresponding to the lecture video, according to the knowledge point segmentation information of each of the knowledge points; and

segmenting the lecture video according to the set of knowledge point segmentation information.