Comprehension Through Self-Explanation, Enhanced Discussion and Inquiry Generation

**Clustering Student Responses**

*Clustering provides teachers with a capability to lead discussions based on the students’ responses in groups of belief.*

**k-means clustering**

Iterate 10 times unless convergence, then iterate through each response feature vector and assign each feature vector to the nearest centroid.

At the conclusion, adjust the centroid of each cluster.

**Pseudocode:**

while i < 10 or Converge:
  for J ∈ Response Feature Vector:
    Assign Closest Centroid(j)
  for K ∈ Centroid
    Adjust Centroid

**Vocabulary for Students**

- Extract all the content words from all RA₁,...,RAₙ
  List W = {RA₁, RA₂, ..., RAₙ}
  for i ∈ listW
    Synonym(i)
    Antonym(i)

- As students are responding to a specific question, append to List W the most frequently used words

- List W has a max of 5 x Number of Content Words in the current reference answer.

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