

ノースカロライナ州立大学における 遠隔教育の実践と 次世代オンライン教育システムの開発 (2)

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遠隔授業支援ツール @ COVID-19

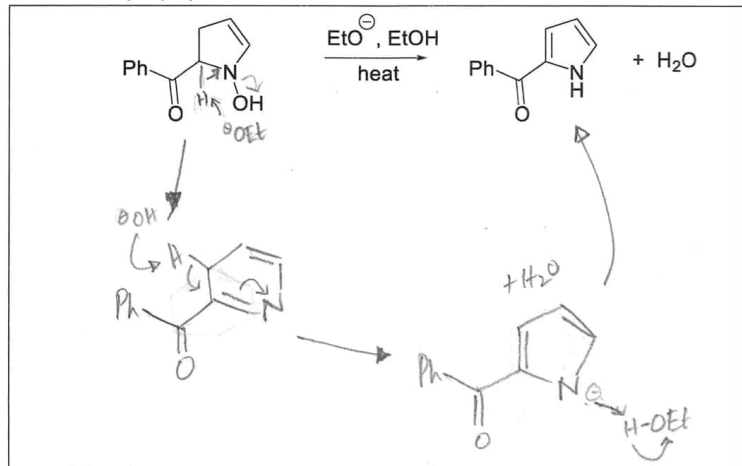
- 授業配信
 - Zoom / Google Hangouts
 - MyMediaSite
- アクティビティ (学生)
 - TopHat (宿題、クイズ)
 - Google Forms / Moodle Quizzes
 - Slack
 - Zoom Breakout Rooms
- プレゼンテーション
 - Zoom / Google Meet / YouTube
- 共同学習・共同作業
 - Slack / GSuite
 - Google Hangouts / Zoom
 - GitHub
- テスト
 - 持ち帰り型 Moodle Tools
 - GradeScope
- 不正防止
 - Moss / TurnItIn

GradeScope: オンライン・テスト・ツール

ルーブリックの作成および関連づけ

手書き回答の認識およびグループ分け

6.D. The cyclized intermediate then undergoes an E1CB mechanism and a tautomerization to yield the final pyrrole product. Show the mechanism below. (10 pts)



TOTAL POINTS
5.0 / 10.0 pts

- 1 **+10.0**
Correct: make enolate, kick out hydroxide (e1cb), make enamine anion, neutralize.
- 2 **+2.5**
Partial: make enolate
- 3 **+2.5**
Partial: kick out hydroxide (like e1cb)
- 4 **+2.5**
Partial: make enamine anion
- 5 **+2.5**
Partial: neutralize nitrogen
- 6 **+0.0**
Incorrect
- 7 **-5.0**
Penalty: positively charged intermediate

Grading by Group

GROUP 1

$$\frac{1}{2}x^2 + C$$

$$\frac{1}{2}x^2 + C$$

$$\frac{1}{2}x^2 + C$$

$$\frac{1}{2}x^2 + C'$$

Question 1

4/8 Graded

TOTAL POINTS
3.0 / 3.0 pt

- 1 **-0.0**
Correct
- 2 **-1.0**
Missing cor
- 3 **-1.0**
Missing fac
- 4 **-3.0**
Blank

Moss / TurnItIn: カンニング検出ツール

student/student11.py (14%)	student/student12.py (22%)
148-164	178-197
170-191	145-171
203-219	217-234
72-77	72-81

```
self.index = 0 # Pacman is always agent index 0
self.evaluationFunction = util.lookup(evalFn, globals())
self.depth = int(depth)

class MinimaxAgent(MultiAgentSearchAgent):
    """
    Your minimax agent (question 2)
    """

    def minimalForm(self, gameState, depth, agentIndex):
        agentsAmount = gameState.getNumAgents()
        evaluation = float("inf")

        if gameState.isWin() or gameState.isLose():
            return self.evaluationFunction(gameState)
        for action in gameState.getLegalActions(agentIndex):
            successor = gameState.generateSuccessor(agentIndex, action)

            if agentIndex == agentsAmount - 1:
                if depth == self.depth:
                    evaluationTemp = self.evaluationFunction(successor)
                else:
                    evaluationTemp = self.maximalForm(successor, depth+1, 0)
            else:
                evaluationTemp = self.minimalForm(successor, depth, agentIndex+1)

            if evaluationTemp < evaluation:
                evaluation = evaluationTemp

        return evaluation

def maximalForm(self, gameState, depth, agentIndex):
    else:
        return maxEval

def min_value(self, gameState, depth, agentIndex):
    minEval = float("inf")

    #num of ghosts
    numAgents = gameState.getNumAgents()

    #no new actions taken if game is over

    if gameState.isWin() or gameState.isLose():
        return self.evaluationFunction(gameState)

    #get actions and gamestates for a specific ghost
    for action in gameState.getLegalActions(agentIndex):
        successor = gameState.generateSuccessor(agentIndex, action)
        # check if last ghost
        if agentIndex == numAgents - 1:
            # check for depth limit
            if depth == self.depth:
                tempEval = self.evaluationFunction(successor)
            else:
                #Pacman moves
                tempEval = self.max_value(successor, depth+1, 0)

        # minimize for next ghost
        else:
            tempEval = self.min_value(successor, depth, agentIndex+1)

        if tempEval < minEval:
            minEval = tempEval
            minAction = action

    return minEval

def getAction(self, gameState):
```


2020 秋学期

- 大学は、ハイブリッド (対面とリモートの組み合わせ) を推奨 ...というよりも「必要」らしい
- ほとんどの教員は、リモートを望む
 - Zoom での講義に問題なし
 - テストに関しては、ほぼ大丈夫
 - ラボをどうするのか？

遠隔授業の事実的更迭！？

Official Website of the Department of Homeland Security

U.S. Immigration and Customs Enforcement

Report Crimes: Email or Call 1-866-D

Home Who We Are What We Do **Newsroom** Information Library Contact ICE

← News Releases

STUDENT AND EXCHANGE VISITOR PROGRAM

07/06/2020

SHARE

SEVP modifies temporary exemptions for nonimmigrant students taking online courses during fall 2020 semester

WASHINGTON – The Student and Exchange Visitor Program (SEVP) announced modifications Monday to temporary exemptions for nonimmigrant students taking online classes due to the pandemic for the fall 2020 semester. The U.S. Department of Homeland Security plans to publish the procedures

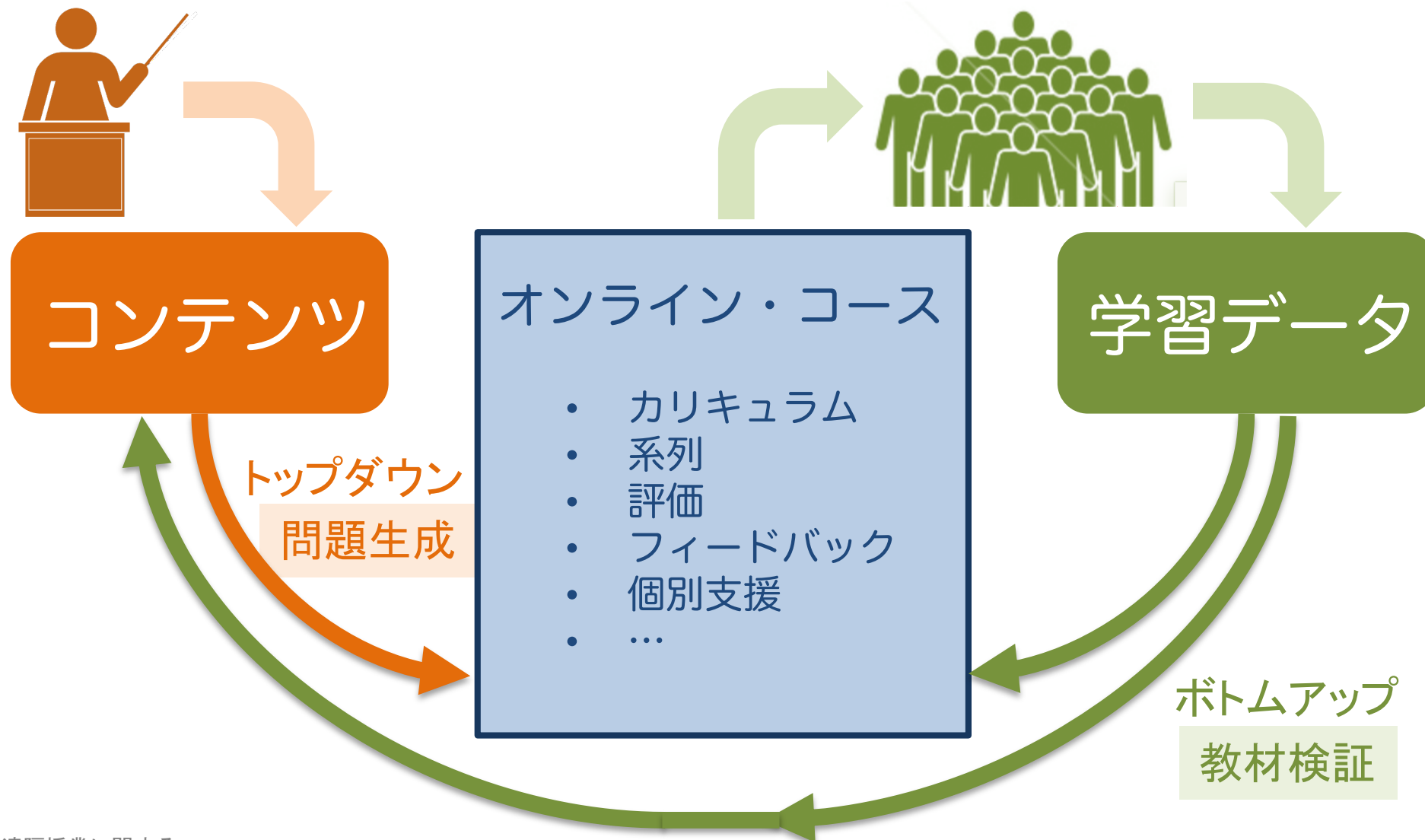
- 100% リモートコースでは、留学生は、アメリカに滞在できない
- 「研究指導」は、対面型の授業である
- 学期半ばで全面的にリモートになった場合、滞在不可能→訴訟問題に



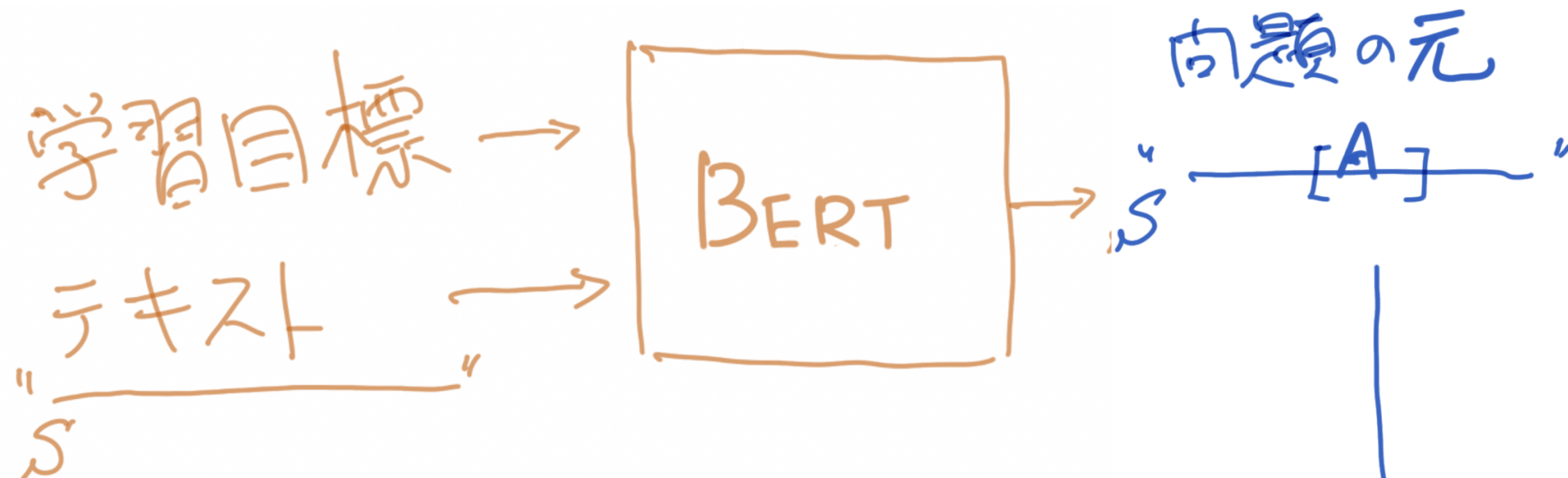
PASTEL

- Pragmatic methods to develop Adaptive and Scalable Technologies for next generation E-Learning
- 目的：次世代オンライン・コースを構築するための適応的、実用的な要素技術の開発
- Research Question: エビデンスに基づいたオンライン教材の開発を支援するための技術とは、いかなるものか？

エビデンスに基づくオンライン・コースの開発



QUADL: テキストからの問題生成



QUADL : テキストからの問題生成

学習目標: Describe the basic (overall) structure of the human brain.

テキスト: The large brain of humans is perhaps the most important evolutionary advance for the species. At the minimum, it is the characteristic most of us consider the distinguishing characteristic of a human. The inside of the brain is characterized by regions of gray matter and white matter . The gray matter is mostly cell bodies, dendrites, and synapses and forms a cortex over the cerebrum and cerebellum, and also forms some nuclei deeper in the cerebrum. White matter is myelinated axons forming tracts. (These definitions and components of gray and white matter are similar to the ones for the spinal cord, although their arrangement will be different as you will discover later in this unit.)

問題: The gray matter is mostly consisted of cell bodies, synopses, and what?



Unit 1:: Biology: The Science of Life

Course Introduction

Introduction to Biology

Themes in Biology

Search this course



Module 3 / Energy and Matter

15

LEARNING OBJECTIVES

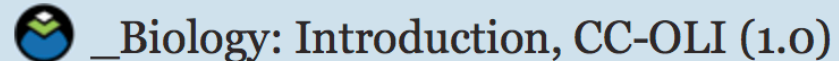
Identify the overarching/recurring themes in biology and explain how they relate to the goals of this course.

Define energy and matter and be able to identify substances as one or the other.

Compare and contrast the way energy and matter move through living systems.

Matter

Matter is traditionally defined as anything that has mass and takes up space. Matter is made of atoms. Matter is reused and recycled in living systems. To live and grow, organisms and cells must take in (or absorb, or ingest) certain forms of matter. Any matter an organism needs but cannot make for itself is considered a *nutrient* for that organism. Not all matter can be used by an organism, which is why all living systems release other forms of matter. When an organism or cell releases (or excretes) matter, the excreted matter is considered waste for that organism.



Introduction to Biology

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Matter

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Complete the activity above and then answer the following questions.

Which subatomic particle(s) have no electrical charge?

- ☐ neutrons ☐ protons ☐ protons and neutrons ☐ protons and electrons

Which subatomic particle(s) are located in the nucleus of the atom?

- ☐ protons and electrons ☐ protons ☐ neutrons ☐ protons and neutrons

評価

- 生成された問題の是非をインストラクターに聞く

Learning Objective

Describe the lymphatic system: list the major organs and structures; describe the major functions; and use anatomical planes and directional terms to identify organs and their relationships to each other.

Example Text

Also, the resident **phagocytes within the spleen** perform the most basic function of removing cell debris from the blood.

Generated Question

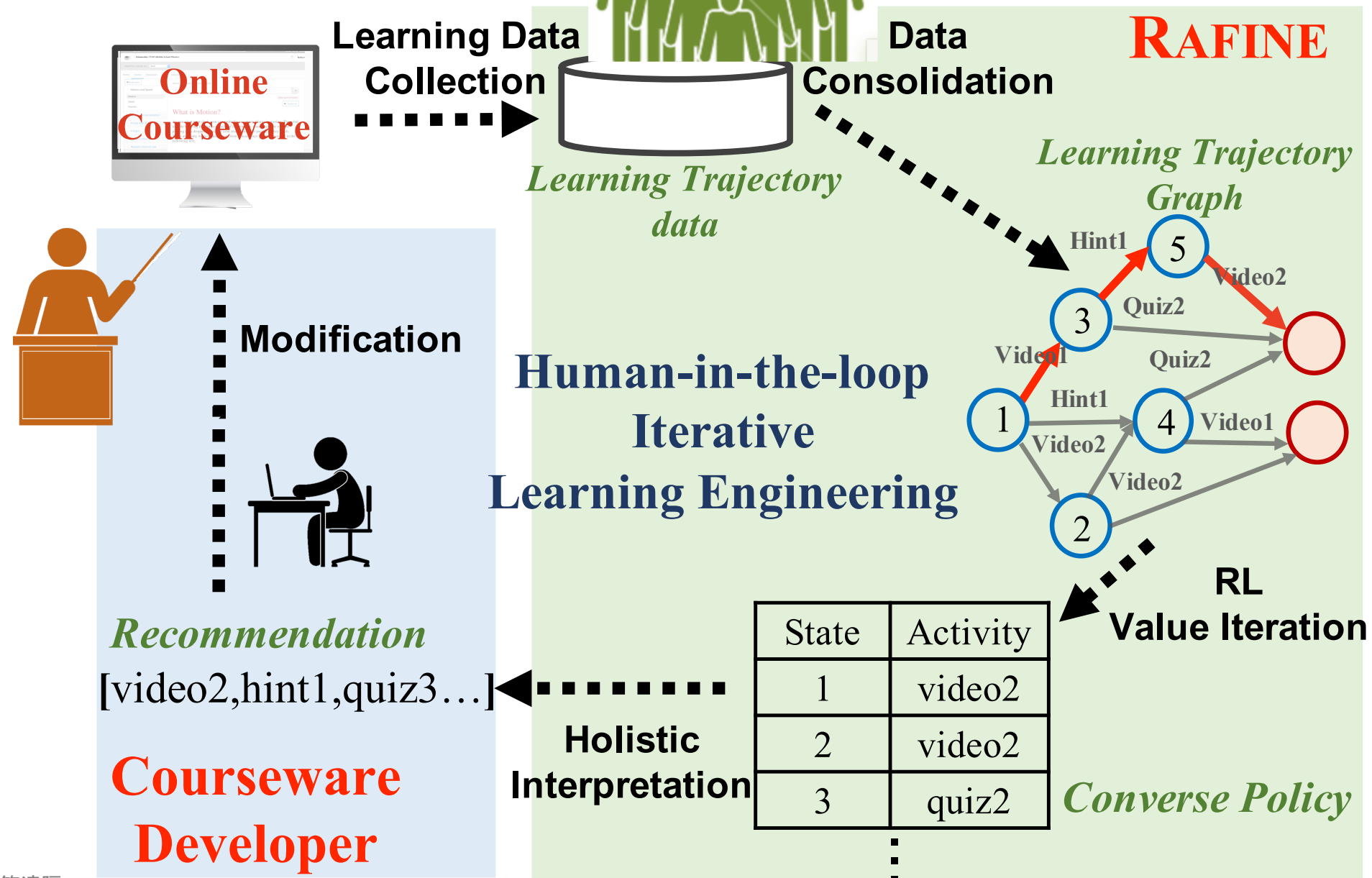
what is the most basic function of removing cell debris ?

Please answer the following questions based on given data

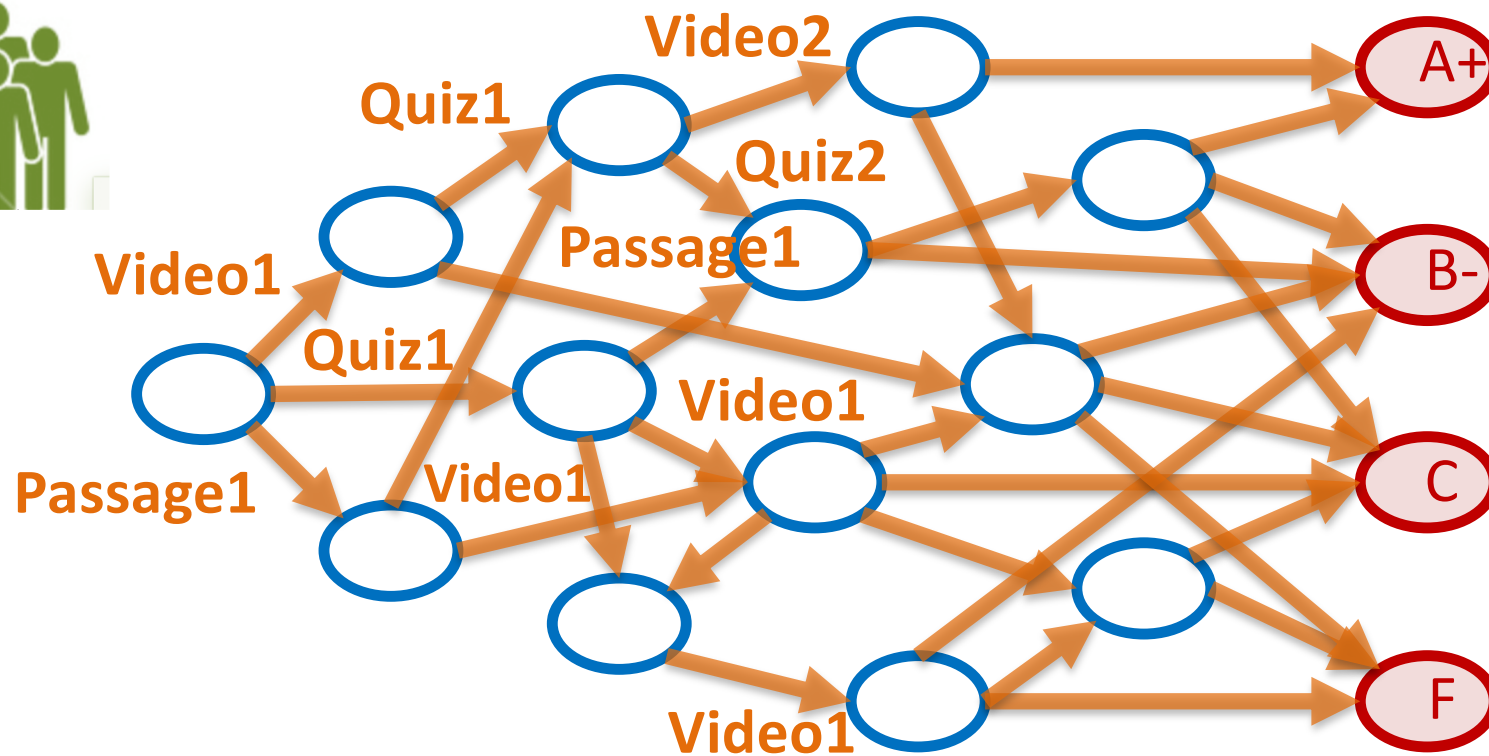
	I Agree	I Disagree
The example text is suitable to create a question for these learning objectives	<input type="radio"/>	<input type="radio"/>
The highlighted words in Example Text is suitable to create a question with the specified answer for these learning objectives	<input type="radio"/>	<input type="radio"/>
The question is suitable for achieving learning objectives	<input type="radio"/>	<input type="radio"/>

RAFINE: 学習データに基づく教材の検証

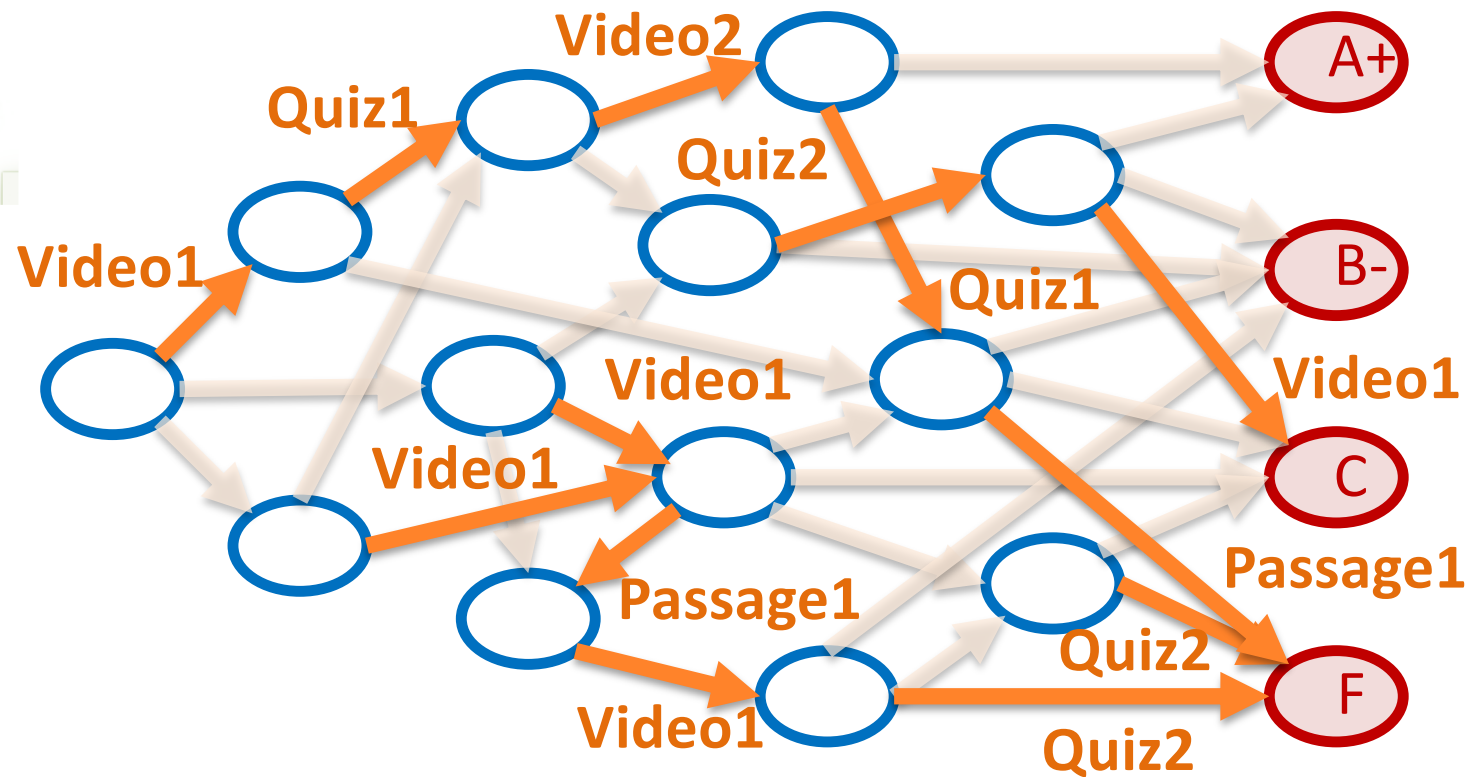
- オンラインコースは(とりあえず)出来た。多くの学生に(とりあえず)使わせた。期待された効果が見られていない。なぜか？
- 学習データを総括的に分析することで、オンラインコースに実装されている個々の教材要素の良し悪しを評価できないか？
- Reinforcement Learning の活用 (Shimmei et al., 2020 EDM)



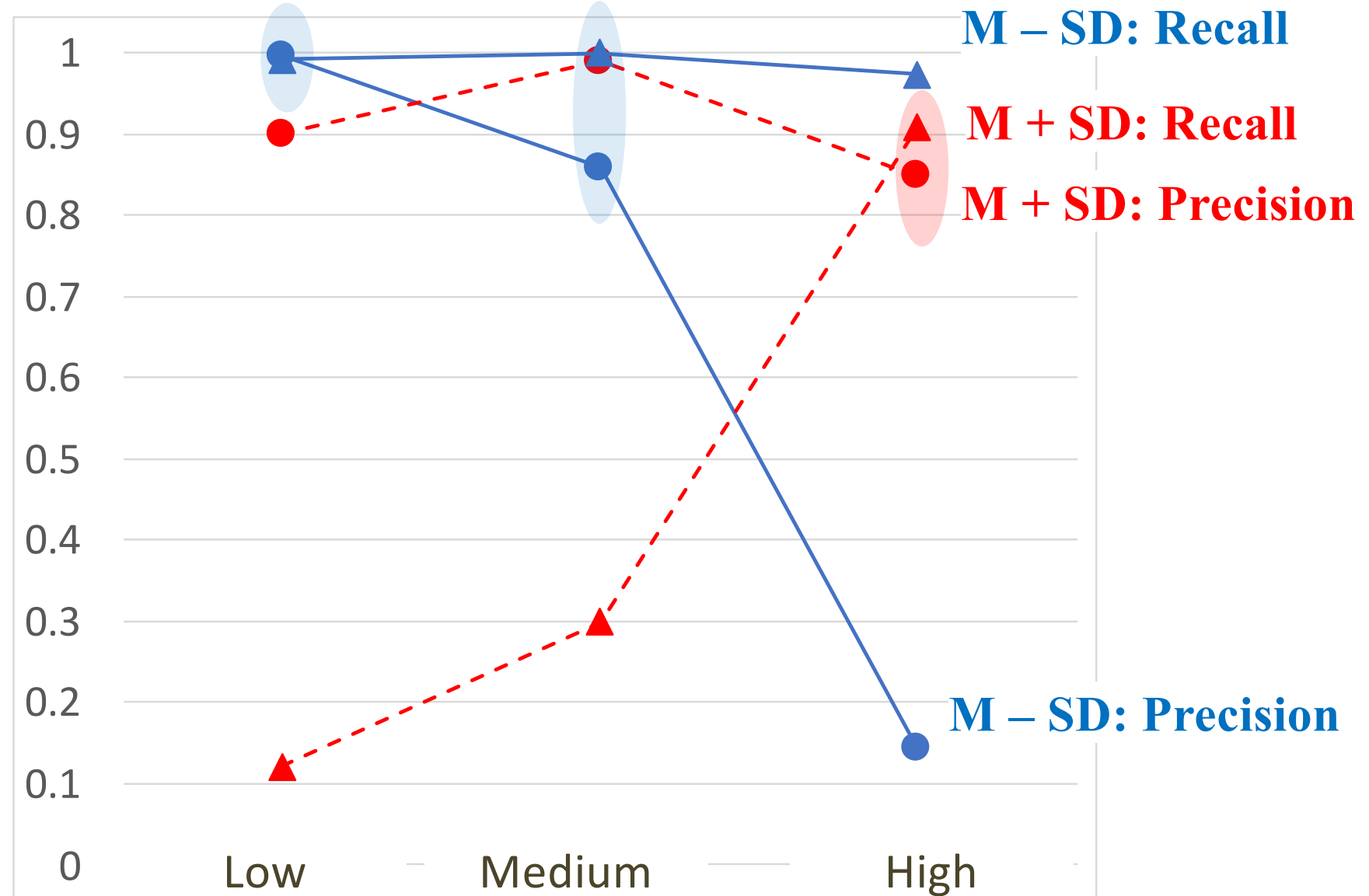
Learning Trajectory Graph



Converse Policy



Frequency Heuristic for Recommendation



ありがとうございました

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