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# Use of Online Educational Videos for Concept-oriented Peer-based Learning

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# Overview

- Researchers have studied the use of educational videos for students' self-regulated learning, motivation, and engagement.
- Students can learn complex concepts much better when presented with visual explanatory videos.
- Web 2.0 applications, such as the online video platform YouTube, may enhance the students' knowledge and retention while connecting with peers and faculty.



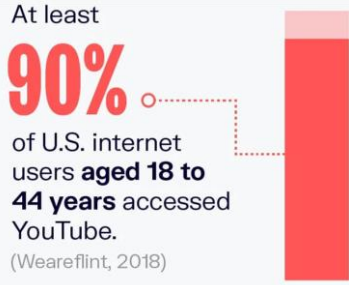


# Problem

YouTube is a rich data source containing millions of educational videos.

**The availability of this immense variety of online videos poses problems:**

- Picking out the relevant, updated, and appropriate ones for educational purposes is challenging.
- The absence of instructors' support may introduce irrelevant concepts and affect the students' conceptual knowledge.



YouTube has

**2 BILLION**

users worldwide.

(Statista, 2019)

**79%**

of Internet users say

**they have a**

**YouTube account.**

(Datareportal, 2019)

Everyday

people watch

**1 BILLION**

**hours of videos** on

YouTube and generate

billions of views.

(YouTube, 2019)

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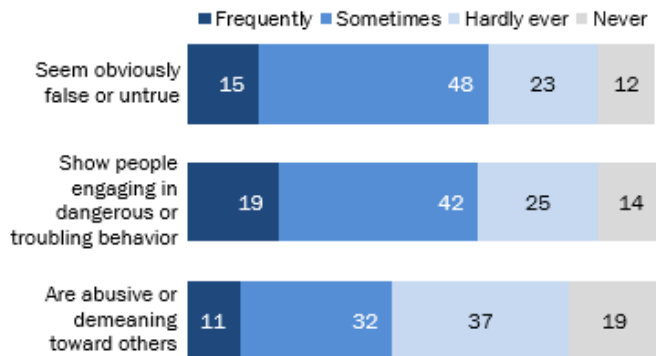
# Problem

- A new Pew research study surveyed 4,594 Americans in 2018 found that 51 percent of YouTube users uses YouTube videos to learn new things.
- 81 percent of parents allow their children to watch videos on YouTube.
- 60 percent of those parents report they've seen content that wasn't age-appropriate on YouTube.

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## Majority of YouTube users encounter videos that seem false/untrue, or show people doing dangerous things

*% of U.S. adults who use YouTube who \_\_\_ notice videos on the site that ...*



Note: Respondents who did not give an answer are not shown.

Source: Survey of U.S. adults conducted May 29-June 11, 2018.

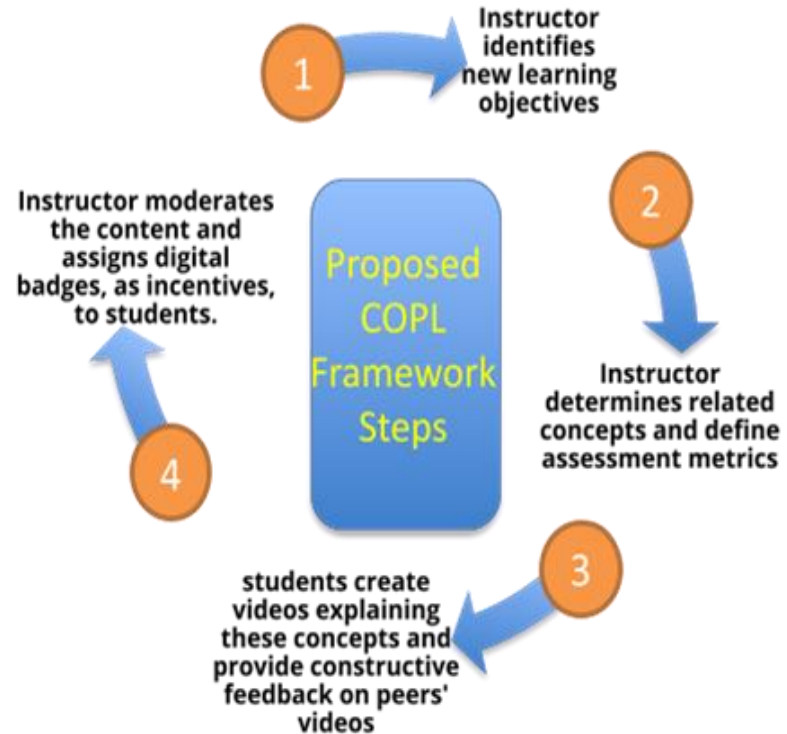
"Many Turn to YouTube for Children's Content, News, How-To Lessons"



## Solution

- A concept-oriented peer-based learning framework (COPL) is presented in this work.
- The framework aims to increase the students' motivation and engagement.
- Create a safe, encouraging, and enclosed online learning environment.

# Methodology



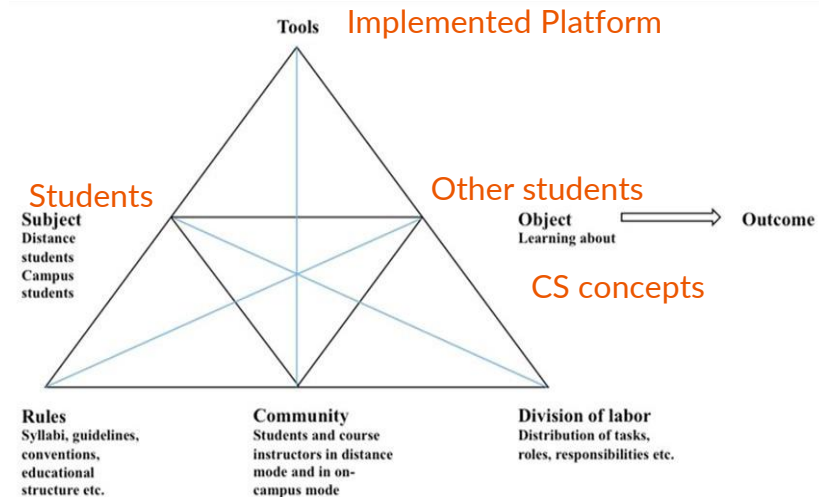


## Methodology - continued

- The COPL framework is guided by motivation and activity learning theories.
- The proposed framework supports' intrinsic and extrinsic motivation.
- Students can experience intrinsic motivation when:
  - they feel a sense of belonging and some control over the learning environment.
  - assigning students topics and related concepts that are challenging yet doable and easy to explain.
  - verbal praise in the video comments by the instructor and other students might increase intrinsic motivation.
- Students can also experience extrinsic motivation when:
  - assigned digital badges based on their contributions and learning goals.
  - get rewards for peer support.

## Methodology - continued

- Engeström's Activity theory explained human thought processes based on the individual's social interactions with the external world through artifacts/tools
- Interactions will be mediated by the implemented system and influenced by the comments, digital badges, and the number of likes.
- Through the implemented system, students can interact with each other and the instructor.



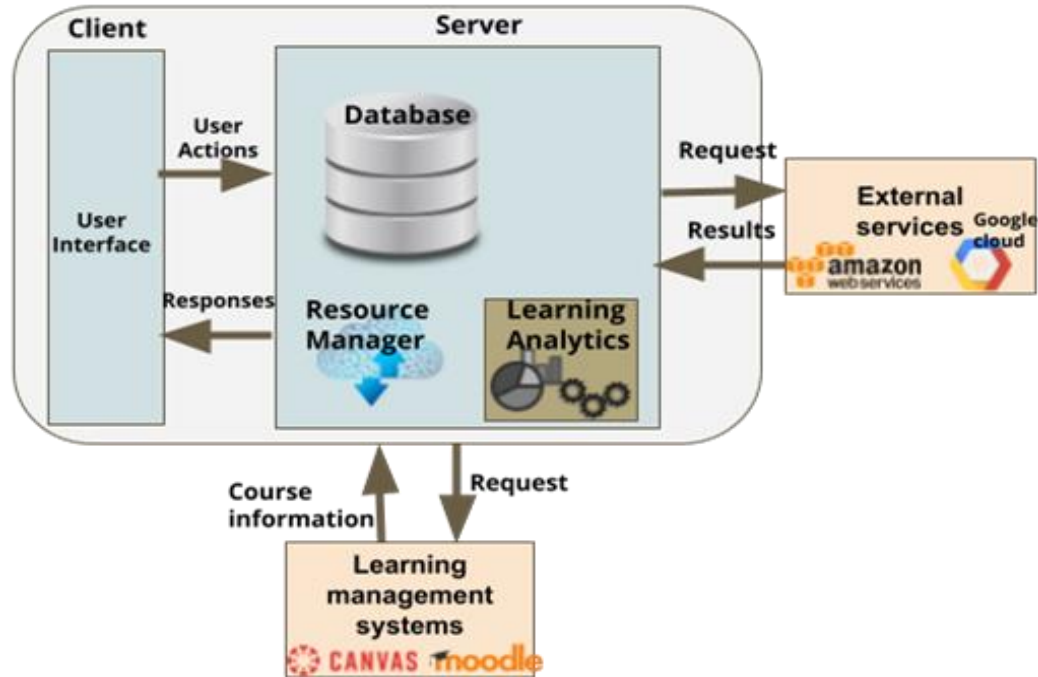




## Methodology - Rules

- Instructors should ensure that:
  - Students' videos are relevant.
  - Others are engaged and responding appropriately.
  - Rewards are assigned fairly.
- This approach will help the entire community of learners to extend their collective knowledge.

# System Overview





# System Overview - continued

[My Videos](#)   [Video Repository](#)   [My Badges](#)



[Add new video](#)

**Learning loops in Java**

This video aims to help introduce the concept of loops using While, Do While & For Loops to beginners.

Created by: Sherif Abdelhamid

Concept: **Loops** from Course/Topic: **Introduction to Programming in Java**

# System Overview - continued

### New video

Learning loops in Java

This video aims to help introduce the concept of loops using While, Do While & For Loops to beginners.

Click to upload a file

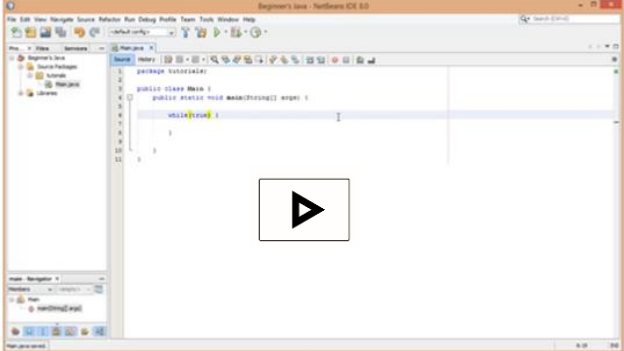
Introduction to Programming in Java: ▾

Select related concept... ▾

- One way selections
- Multi way selections
- Mathematical functions
- Switch statements
- Loops

CANCEL

### Learning loops in Java by Sherif Abdelhamid



2 Likes

2 Comments

Add a public comment... Comment

David James  
Nice work...I like the way you explained the while loops and it was very helpful...thanks

Jennifer Thomas  
Thanks so much. It will be helpful if you add some illustrations.



# Conclusion

- While educational videos are progressively becoming more commonplace in various classroom settings, the **large and diverse catalogs of websites** can present an **issue of irrelevant, inaccurate, or inappropriate concepts**.
- We have described the **COPL framework** that aim to help improve the students' engagement and motivation.
- COPL through the **implemented system** will help the students be directly involved in the learning process.
- This pedagogical approach is described as a "**Students as Partners**" approach where students form a community of learners to extend their collective knowledge through the video-based co-explanation of various concepts.
- The implemented system, students can utilize the **benefits of educational videos** within a **safe and engaging environment**.
- Furthermore, through **intrinsic and extrinsic motivators** induced in the COPL framework, instructors can further the students' educational success while accurately gauging a student's current knowledge regarding a given topic.
- Our future work will involve the **integration of the COPL framework and system in an undergraduate course** within the computer science department. Additionally, we will **collect and analyze data** related to students' motivation and engagement through surveys, interviews, and system collected data of user interactions.



**THANK YOU**

Questions...please