

# Success Factors in Creating an Online Intro. to Programming Course



- The adoption of online learning by academic institutions has become common
- However, this brings along issues such as the disconnect between the students and the instructor, and high drop out rates, among others
- Our research looks at the Critical Success Factors (CSFs), which help alleviate these issues

## INTRODUCTION

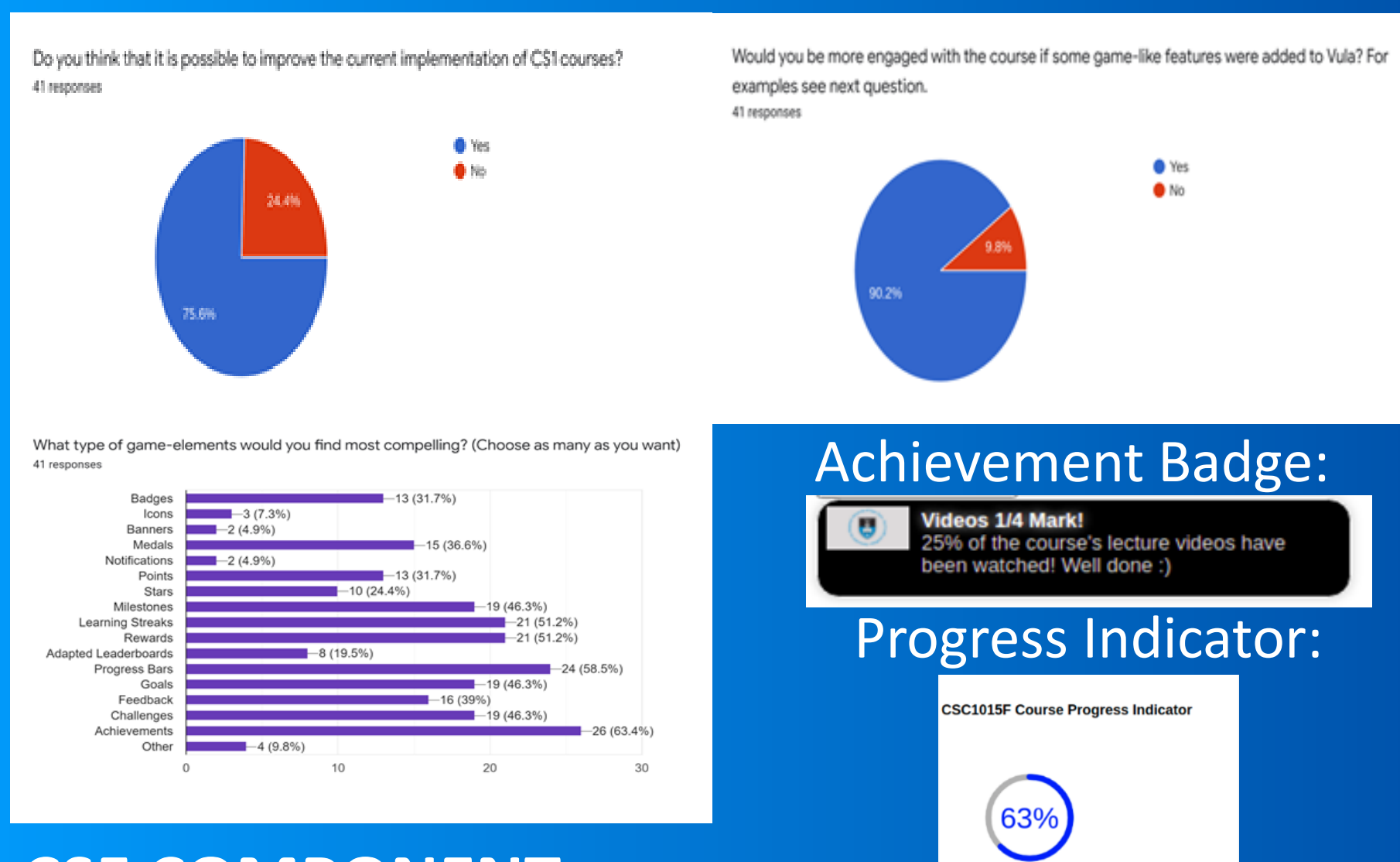
### Some of the researched CSFs:

- Supportive Learning Environment
  - High Technical Competence
  - Self Regulated Learning
  - Effective Lecture Video Styles
  - Gamification
  - Student-Instructor Interactions (SIIs)
- We look into the last two in greater detail

### Gamification

Increase course engagement using gamification and suggest methods by which to increase student participation using CSFs that have been proven in academic studies.

1. What are some proven CSFs that one can use to enhance the offering of an online course?
2. What is the perceived effect of additional gamification elements to a LMS? Does it increase the system's effectiveness?



## AIMS

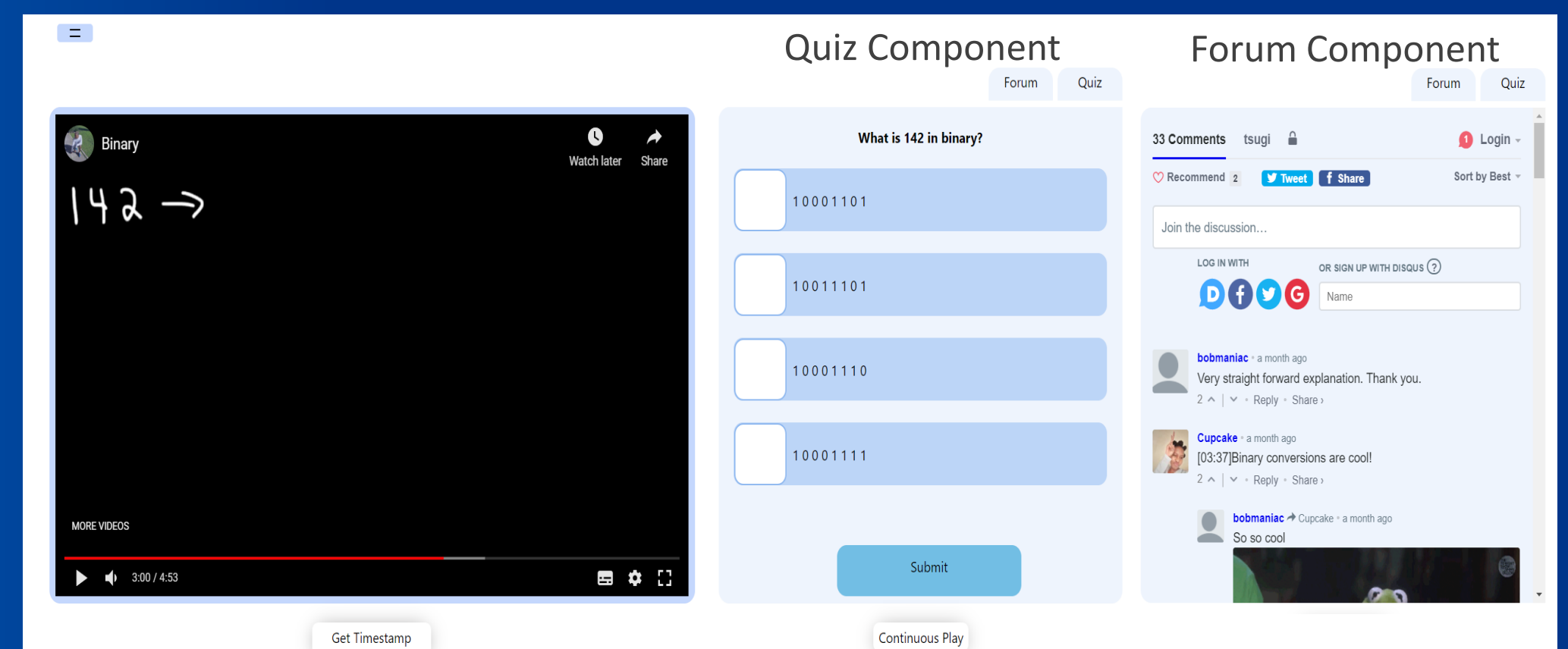
### SIIs

Increase SIIs by coupling each lecture video with its own dedicated forum, and providing a way for instructors to ask questions and get feedback through use of in-lecture quizzes.

1. What effect does the pairing of lecture videos with forums have on SIIs?
2. What is the effect of incorporating in-lecture mandatory quizzes on SIIs?

## DIAGRAMS

### Lecture Video Forum System, and Mandatory Quiz



### CSF COMPONENT

CSFs: gamification, self-efficacy, strong teaching presence, set attainable goals, complete exercises analogous to exam questions, technical infrastructure, interactive learning, content quality, learning strategies, classroom interaction, attitudes towards students, instructor technical competence, and lastly running a Scratch course alongside CS1.

### GAMIFICATION COMPONENT

Overall, the application worked as intended as a prototype/proof of concept system.

## CONCLUSIONS

### FORUM COMPONENT

Research results showed that the students found the forum system quicker and easier to navigate, and that this made them more likely to make posts (i.e increase SIIs).

### QUIZ COMPONENT

Those with an option to skip the quiz, completed it and gave more positive critique than those who had no option to skip. Quizzes do lead to an increase in SIIs, but with option to skip.

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