Experience of Video-classes Related to Mobile Development Produced by Multidisciplinary Students who used the Challenge Based Learning Methodology

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Andrew is bachelor, master and PhD in Informatics from the Pontifical Catholic University of Rio de Janeiro (PUC-Rio). Co-author of the book "Automation of the Software Test Management Process" (currently only in Portuguese). He has more than 20 years of experience in different software development projects. He has been active as a reviewer in different different national and international, as well as author of articles related to the areas of education and software engineering. Since 2014 he has been a professor in the Informatics Department at PUC-Rio and has been enthusiastic about the use of modern learning and teaching methodologies.

Motivation

Motivation (I/II)

⭐ Educational program that teaches mobile development to multidisciplinary students, who came from different courses

⭐ 20 hours per week

⭐ Providing opportunities of learning to our students

⭐ Video classes in Portuguese

Motivation (II/II)

★ Videos in Portuguese related to mobile development with low quality

★ Several people in Brazil do not speak English

★ Contribution to the community interested to learn mobile development and does not master English

Main Goals

★ How it contributed to the learning of the students

★ How CBL influenced the video classes created

★ Which additional impacts happened from these new contents

Learning Methodology

ACT

ENGAGE

CHALLENGE
based learning

INVESTIGATE

http://challengebasedlearning.org/
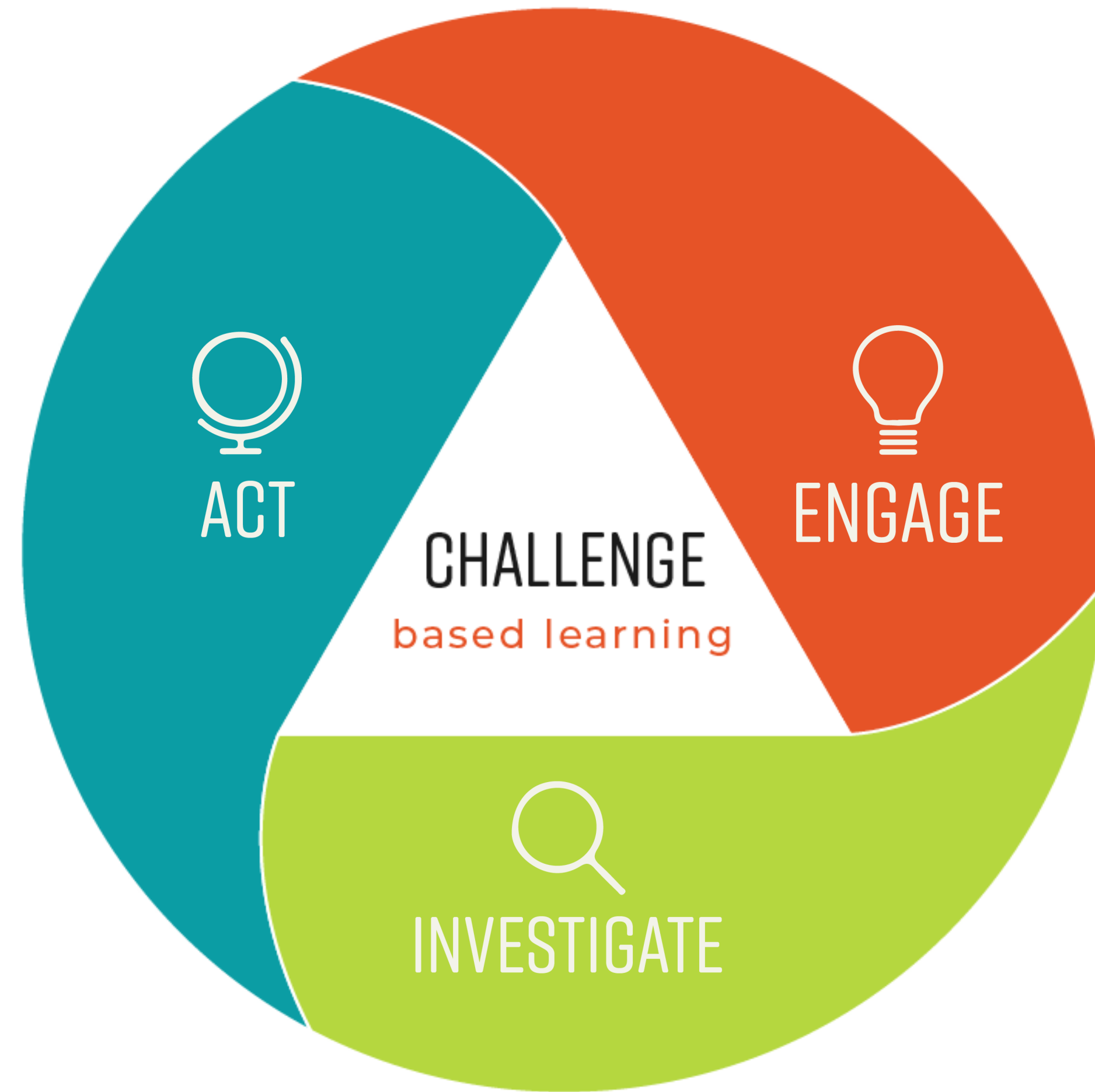
ENGAGE

1. Big Idea

2. Essential Question

3. Challenge

INVESTIGATE

1. Guiding Questions

2. Guiding Activities/Resources
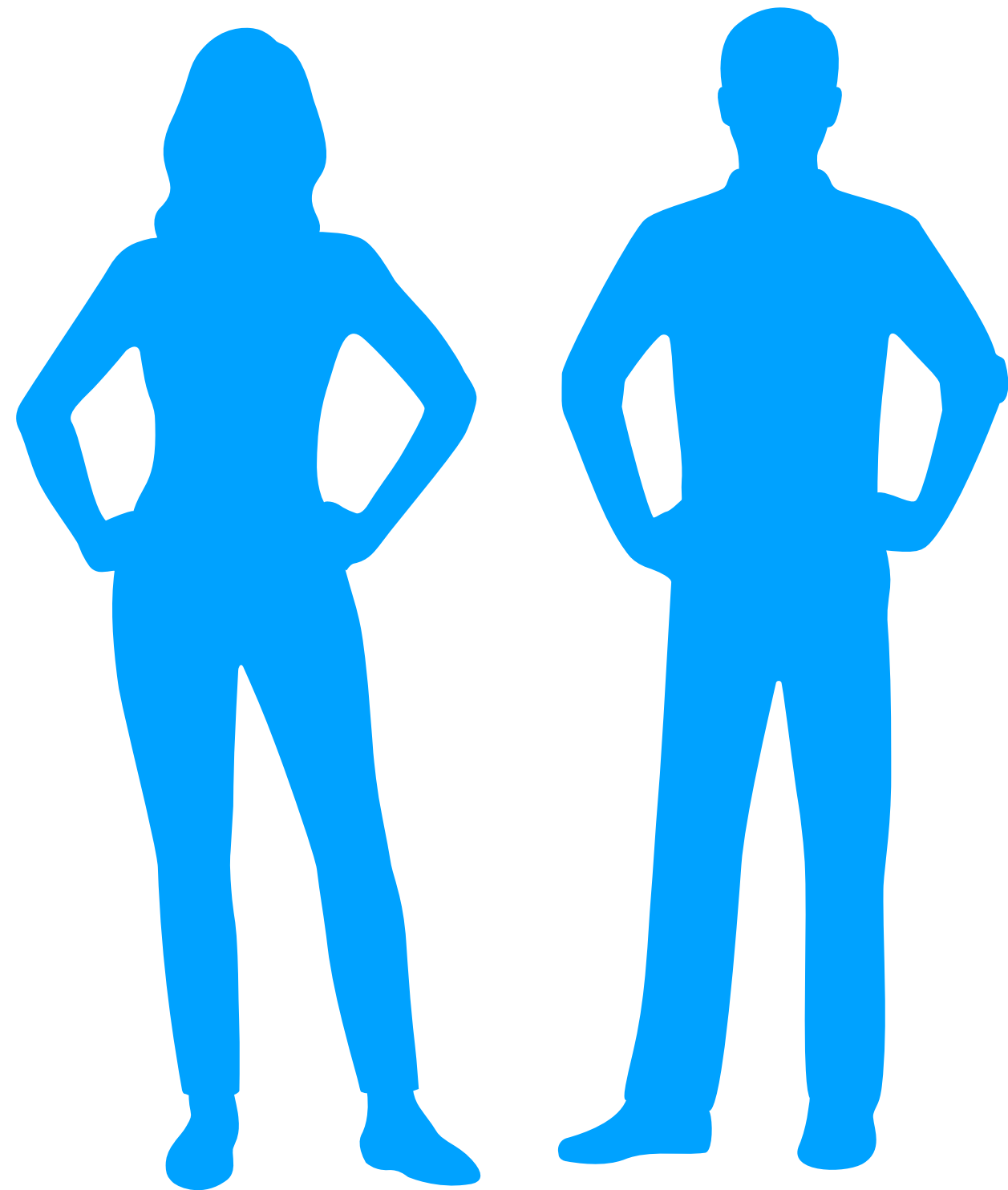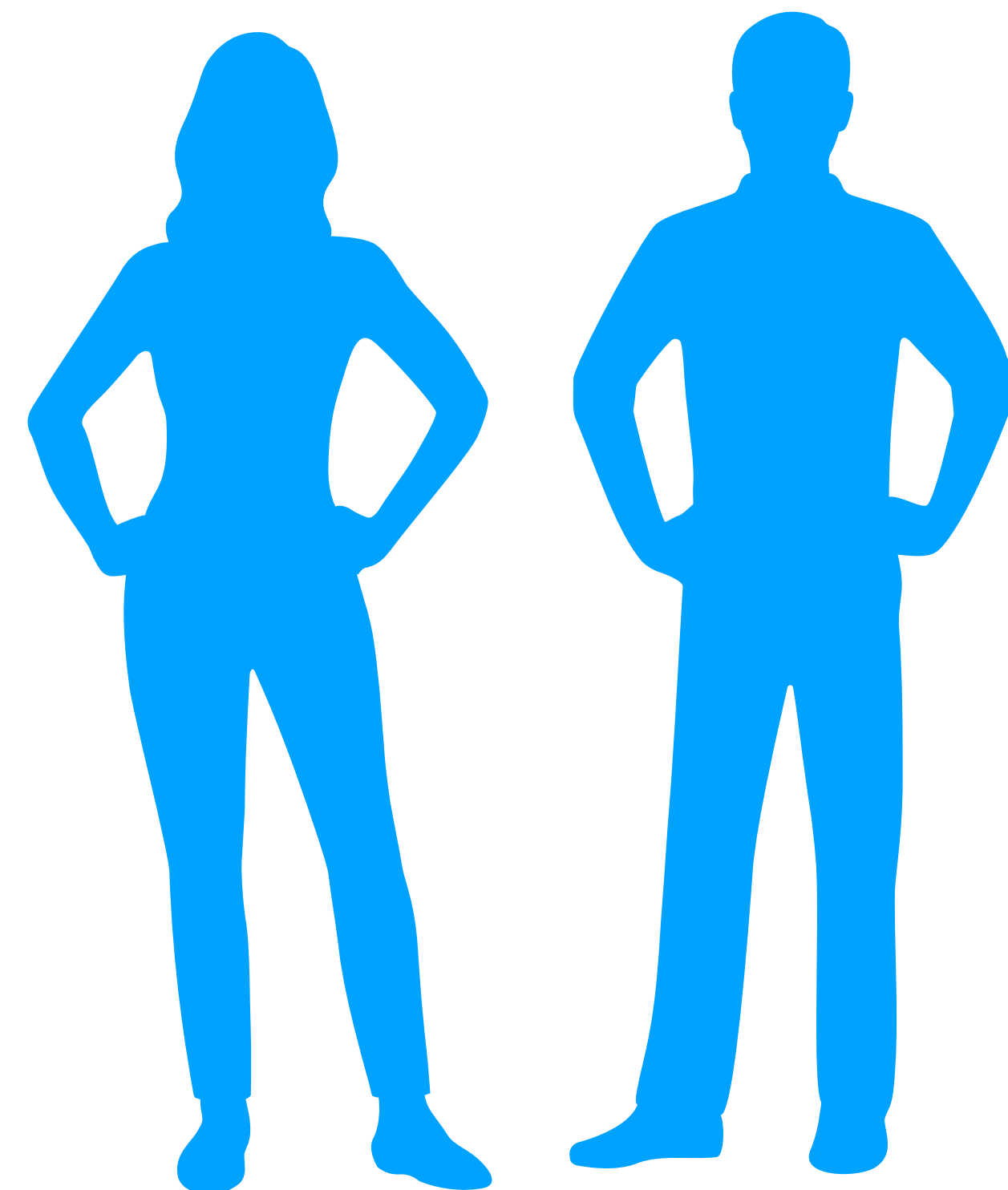
3. Analysis

ACT

1. Solution

2. Implementation

3. Evaluation

Activities Offered

Participants

Group 1: 37 students

Group 2: 38 students

Participants

Group 1:
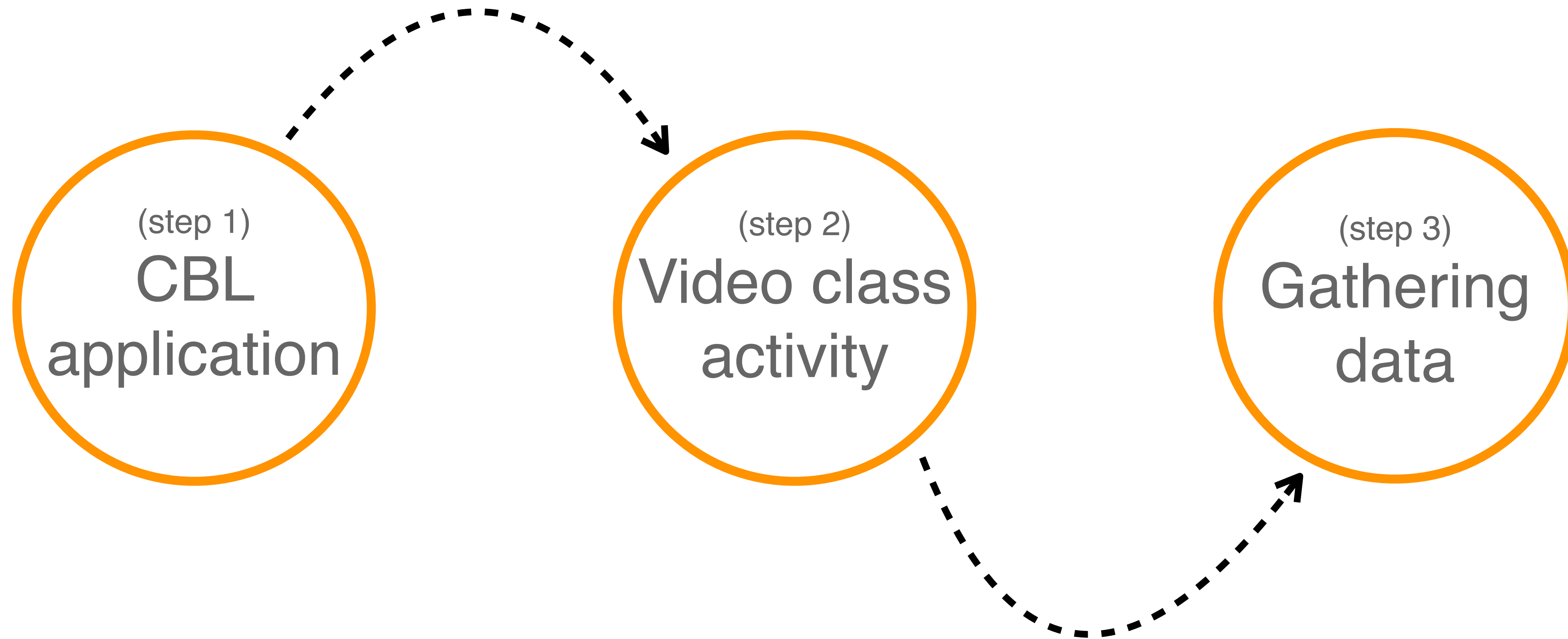
🎓 10 courses

📅 Feb, 2016 to Dec, 2017

Group 2:

🎓 9 courses

📅 Feb, 2018 to Dec, 2019

Approach to both groups

(step 1)
CBL application

(step 2)
Video class activity

(step 3)
Gathering data

Group 1

Step 1

(step 1)
CBL
application

★ Students presented to CBL from a lecture

★ They participated of several challenges ranging from 2 weeks till 3 months

★ Teachers avoided giving immediate answers to questions made by them

★ Resources recommended and teachers motivated them to research from questions

Step 2

(step 2)
Video class activity

⭐ That activity was offered to students twice

⭐ A set of requirements of the activity were offered by teachers (e.g. subject related to mobile development, max. 10 minutes etc.)

⭐ To guarantee technical correctness and good quality in the videos, a set of steps were followed

⭐ YouTube channel called DEV PUC-Rio

Step 3

(step 3)

Gathering data
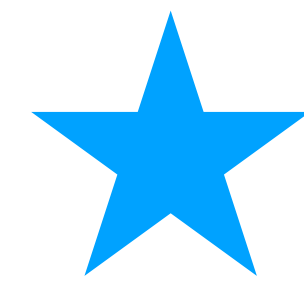
★ Students received a survey with a set of questions

- how the experience in participating of both activities was

- how they felt the learning acquired from the activity

- if the CBL impacted the video classes created
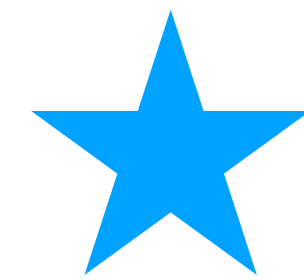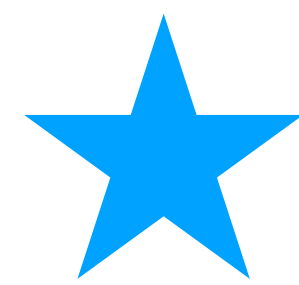
★ Anonymous

Group 2

Step 1

(step 1)
CBL
application

★ Challenge offered without having any previous lecture mentioning CBL terms and definition.

★ That challenge lasted 2 weeks

★ Students also had challenges ranging from 2 weeks till 3 months of duration

★ The "challenge" term was not used to describe the activity to be offered.

Step 2

(step 2)
Video class activity

★ That activity was offered to students once in Sep, 2018

★ The same requirements of the activity were offered by teachers

★ Videos also published in the Youtube channel

Step 3

(step 3)
Gathering data

★ Students received the same survey with a set of questions

★ Anonymous

Results and Discussion

35

Group 1
Activity 1

40

Group 1
Activity 2

46

Group 2
Activity 1

More than

20

More than
50% of students

Storyboard

Screen capture

Video edition

Audio edition

More than

80% of students

learned at least one of that topics

CBL Influence

⭐ A good part of the students considered the impact of the learning methodology minor. Group 1: 23. Group 2: 14.

⭐ According to group 1, CBL would be present if some document describing the learning process was created.

⭐ During the activity to create video classes, CBL terms were not used as often by students and teachers in previous challenges.

⭐ Some students, who had previous experience with other active learning/teaching approaches, sometimes did not relate steps of the CBL to actions that they were making.

Useful activity

★ The data collected showed that group 2 thought it was more useful than group 1.

★ Maybe a reason that influenced that result could be to have applied that activity twice for the group 1.

Additional Results

★ YouTube channel achieved more than 120 available videos and more than 2 thousand subscribers

★ It became an additional reference to new editions of the educational program performed at Rio de Janeiro

★ Some students were recognized at national and international events of development from people, who were subscribers of the Youtube channel.

★ Teachers mapped on social media, students who continued creating contents for the community or participating in events. Group 1: at least 15 people. Group 2: at least 22 students.

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Conclusions and Future Works

Conclusions and Future Works

★ To have a Portuguese version of the CBL

★ To offer a more personalized learning track related to production of new contents could be introduced to students

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