

# Dance Choreography a Fun Way to Introduce Coding to the Under-Represented Kids

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# Background

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- Artificial intelligence is rapidly becoming entrenched in our daily lives.
- Unfortunately, we are quickly coming to understand the shortcomings associated with this innovative revolution
- Most notably related to racial, gender bias driven by unrepresentative dataset, and lack of diversity, equity and inclusion in the coding world,
- We hypothesize that using dance choreography to introduce coding to kids from the under-represented population will result in a positive attitude and a stimulated interest in coding.



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# Methodology

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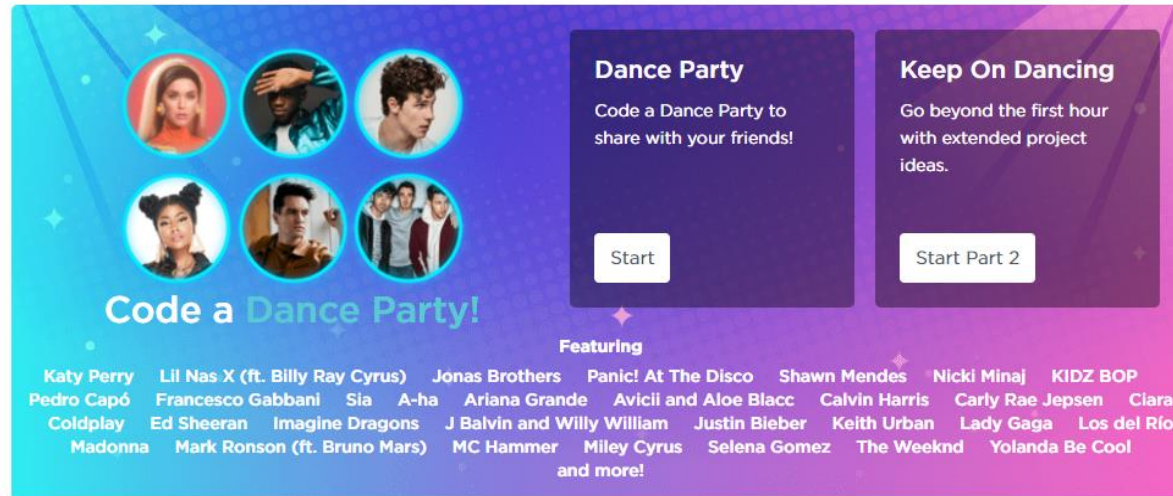
- Using our established platform ColorCoded ([www.colorcoded.fun](http://www.colorcoded.fun)) in collaboration with The Learning Box International (TLB) an international educational services firm catering to the educational needs of under-represented minority preschool to high school children (ages 5 - 17). We set up a 4-week summer camp for kids aged 8-12.
- Using the Likert scale, we surveyed student attitudes toward coding at the beginning and at two other time point intervals during the summer camp.
- Our Likert-type scale response anchor included:
  - 1.) Likelihood to choose coding - Not likely, somewhat likely, likely.
  - 2.) Likelihood to choose dancing- Not likely, somewhat likely, likely.

# Methodology

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- Our curriculum was based on the use of dance choreography, we used "Dance Party Code.org".
- The students were shown some dance steps with coding instruction and then encouraged to create their own dance moves using coding instructions.
- There are about 10 stages, and we usually went through the first 6 and then let the students create whatever they wanted on the last stage.
- Students learnt the basics of coding encompassing iteration through looping and the sequential nature of executing code.

# Our software Curriculum is based on Dance Party Code.org



**Code a Dance Party!**

**Dance Party**  
Code a Dance Party to share with your friends!  
[Start](#)

**Keep On Dancing**  
Go beyond the first hour with extended project ideas.  
[Start Part 2](#)

**Featuring**

Katy Perry Lili Nas X (ft. Billy Ray Cyrus) Jonas Brothers Panic! At The Disco Shawn Mendes Nicki Minaj KIDZ BOP  
Pedro Capó Francesco Gabbani Sia A-ha Ariana Grande Avicii and Aloe Blacc Calvin Harris Carly Rae Jepsen Clara  
Coldplay Ed Sheeran Imagine Dragons J Balvin and Willy William Justin Bieber Keith Urban Lady Gaga Los del Río  
Madonna Mark Ronson (ft. Bruno Mars) MC Hammer Miley Cyrus Selena Gomez The Weeknd Yolanda Be Cool  
and more!

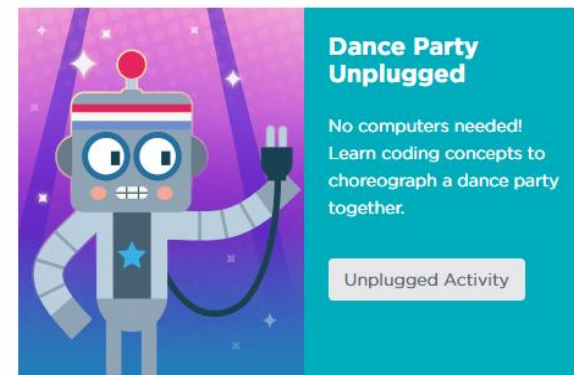
[Help translate Dance Party >](#)



**Teacher Resources**

Lesson plans, certificates, and music filtering.

[Lesson Plan](#)



**Dance Party Unplugged**

No computers needed! Learn coding concepts to choreograph a dance party together.

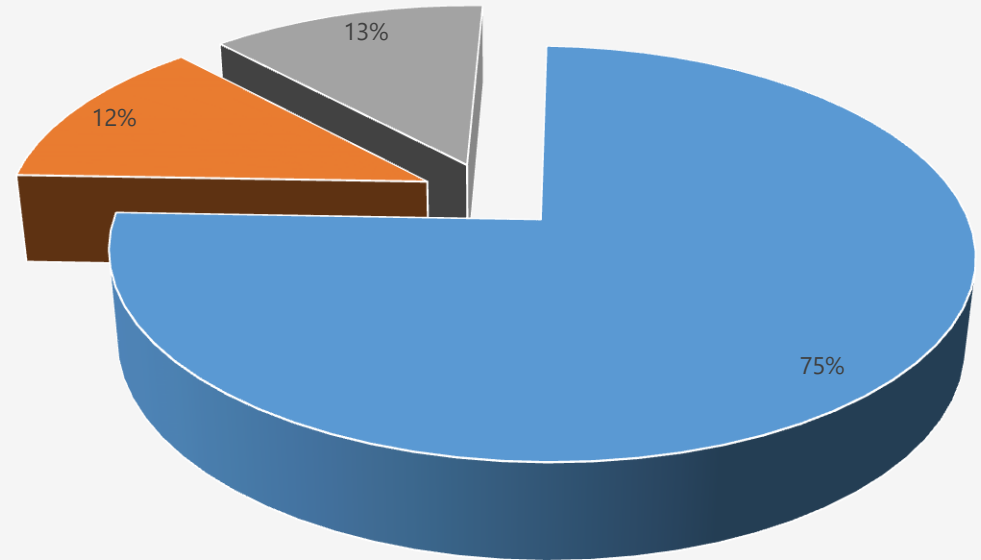
[Unplugged Activity](#)

# Results

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- Of the thirty-two kids who signed up for the TLB camp and who were surveyed at the beginning of the camp only 4 (12.5%) indicated they were likely to choose coding as a coursework,
- 24 (75%) stated they were not likely to choose coding while 4(12.5%) were somewhat likely to choose coding as a coursework.

Likerts Survey Response at Beginning of Camp-  
Likelihood to Choose Coding



■ Not likely   ■ Somewhat likely   ■ Likely

# Sample of Students Work

```
setup
  set background effect
  Electronic Higher Power
  make a new unicorn at center
  unicorns do Bend once

after 12 measures
  sloths do Clap High forever
  unicorns do Floss forever

after 4 measures
  make 12 new sloths
  in a circle
  all do Clap High forever

after 16 measures
  sloths do Floss forever
  unicorns do Clap High forever

after 8 measures
  all do Double Down forever

after 10 measures
  all do Gangnam forever
```

```
setup
  set background effect
  Neon Laser Dance Floor
  make 20 new pineapples
  in a circle
  set pineapples size to 20
  make a new shark at center
  make a new cat at top left
  make a new sloth at top right
  make a new dog at bottom left
  make a new alien at bottom right
  all do Dab forever

when down pressed
  all do This or That once

when left pressed
  all do Clap High once

when 1 pressed
  sharks do Gangnam once

when right pressed
  all do (Random) once
```

```
setup
  make a new duck at center
  make a new sloth at top left
  make a new alien at top right
  make a new cat at top

after 6 measures
  ducks do Drop once
  sloths do Bend once
  aliens do Disco once

after 20 seconds
  aliens do Dab once

after 22 seconds
  sloths do Dab once

after 21 seconds
  ducks do Dab once

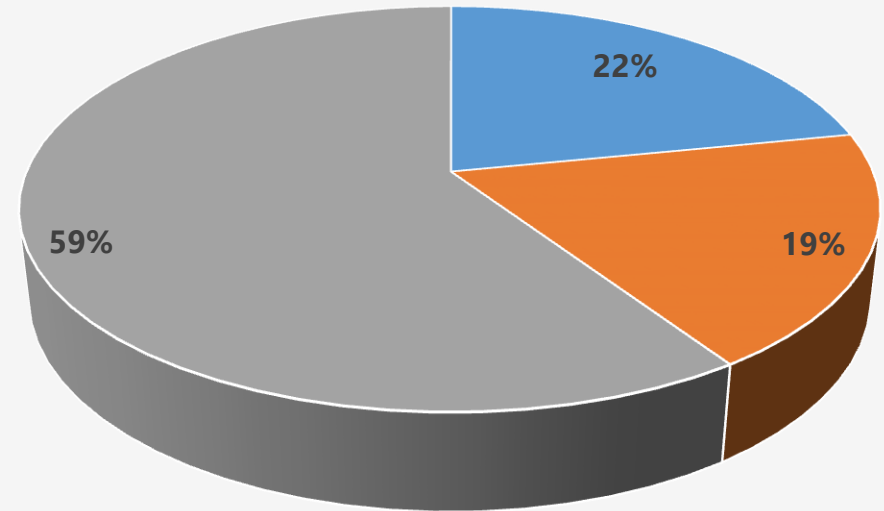
when up pressed
  jump ducks to random
  jump aliens to random
  jump sloths to random
  set all size to 50
```

# Results

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- Following a two-week exposure to our curriculum a repeat survey showed an increase in the respondents who indicated that they were likely to chose coding as a coursework 15(46.8%),
- This number increased to 19(59.3%) at the end of our 4 weeks program, a 46.8%-point increase.

Likerts Survey Response at End of Camp-  
Likelihood to Choose Coding



■ Not likely   ■ Somewhat likely   ■ Likely



# Results

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- Interestingly at the end of our 4-weeks program, we also noted an increase in the number of students who were likely to choose dance as a coursework
- 28(87.5%) vs. 18(56.2%) and 24(75%) at the beginning and midway through the 4-weeks camp respectively, a 31.3%-point increase.
- A nonparametric spearman's correlation analysis of our data revealed a positive correlation between an interest in dance and coding; rho coefficient 0.581,  $p < 0.001$ .

# Conclusion

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- Our use of dance choreography to introduce coding to kids from under-represented minority population resulted in an increased interest in coding and interestingly also increased interest in dance.
- This represents a fun simple way of helping close the diversity, equity and inclusion gap in the coding world,
- Which in the long run should impact Algorithmic biases and errors in artificial intelligence use positively

# Acknowledgement

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- <https://code.org/dance>
- The Learning Box International (TLB) an international educational services firm
- Mentor-Chukwuemeka Ihemelandu