An Analysis Of The Coding Movement: How Code.org and Educators Are Bringing Coding To Every Student

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ABSTRACT

Technology plays an integral role in every aspect of daily life. As a result, educators should leverage technology-based learning to ensure that students are provided with authentic, engaging, and meaningful learning experiences (Pringle, Dawson, and Ritzhaupt, 2015). The significance and value of computer science understanding continue to increase. A major resource that can be credited with spreading support for computer science is the site Code.org. Its mission is to enable "every student in every school to have the opportunity to learn computer science" (https://code.org/about).

Two years ago, our mentor partnered with Code.org to conduct workshops within the Charlotte, NC area to educate teachers on how to teach computer science activities and concepts in their classrooms. We had the opportunity to assist during the workshops to provide student perspectives and opinions. As we look back on the workshops, we wondered, "How are the teachers who attended the workshops implementing the concepts they were taught?" After each workshop, a survey was distributed to the attendees to receive workshop feedback and to follow up. We collected the data from the surveys concluded that the workshops were beneficial and that the educators had implemented a concept that they learned. We believe that computer science activity implementations will assist students across the curriculum.

METHODS

- PROC (procedure) Print
- PROC Freq (frequency)
- PROC Gchart (graph)

RESULTS

- In 2015 there were 32 attendees, while in 2016 there were 44.
- From the year 2015 to 2016, there was an increase of attendance.
- Overall, 66/77 (88%) educators believe that it's helpful to the students to incorporate unplugged activities into their curriculum.
- 65% of the educators that attended the workshop either implemented an unplugged activity to teach other subjects besides computer science or would have liked to implement one.
- 63 individuals stated that they had implemented a Code.org workshop activity.

FREQUENCY of TeachOther

Have not thought of that, but would like to try
24

No
29

Yes
20
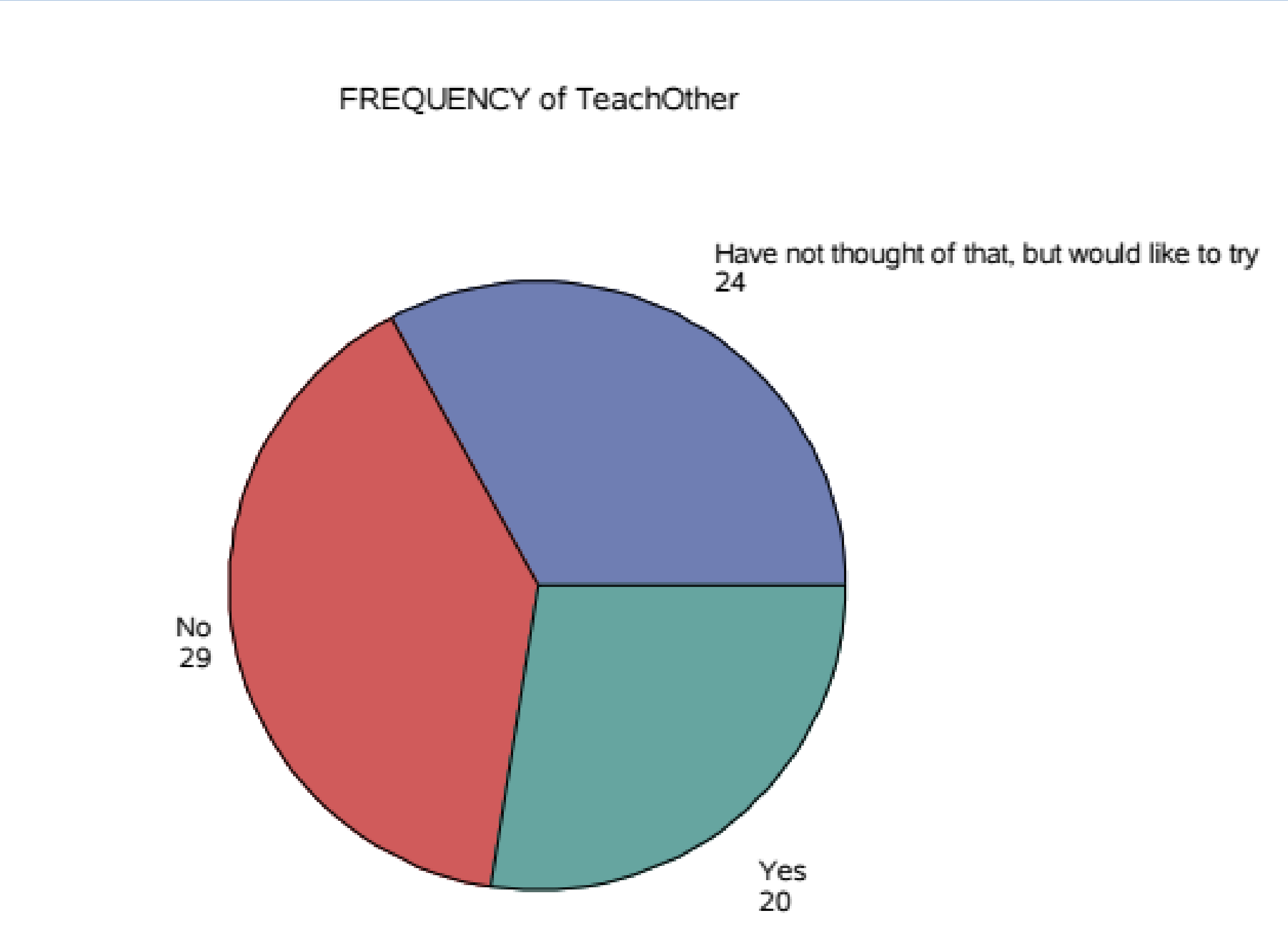
The FREQ Procedure

Table of Year by Helpful

Year	Helpful	Frequency	Percent	Row Percent	Column Percent
2015	Maybe	4	5.33	12.90	57.14
	Neutral	1	1.33	3.23	50.00
	Yes	26	34.67	83.87	39.39
	Total	31	41.33	100.00	
2016	Maybe	3	4.00	6.82	42.86
	Neutral	1	1.33	2.27	50.00
	Yes	40	53.33	90.91	60.61
	Total	44	58.67	100.00	
Total	Maybe	7	9.33		100.00
	Neutral	2	2.67		100.00
	Yes	66	88.00		100.00
	Total	75	100.00		

Frequency Missing = 1

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RESULTS CONTINUED

- On a scale of 1-5 (1 being least recommend and 5 being highly recommend), 90.67% of attendees would highly recommend this Code.org workshop to a colleague or other educator. [In 2015 - 40% , while in 2016 - 50.67% - Overall,10% percent increase.]
- 74/75 participants believed that the workshop was beneficial.

The FREQ Procedure

Table of Year by Recommend

Year	Recommend	Frequency	Percent	Row Percent	Column Percent
2015	3	0	0.00	0.00	0.00
	4	2	2.67	6.25	33.33
	5	30	40.00	93.75	44.12
	Total	32	42.67	100.00	
2016	3	1	1.33	2.33	100.00
	4	4	5.33	9.30	66.67
	5	38	50.67	88.37	55.88
	Total	43	57.33	100.00	
Total	3	1	1.33		100.00
	4	6	8.00		100.00
	5	68	90.67		100.00
	Total	75	100.00		
Frequency Missing = 1					

FREQUENCY of Beneficial

Neutral
1

Yes
74
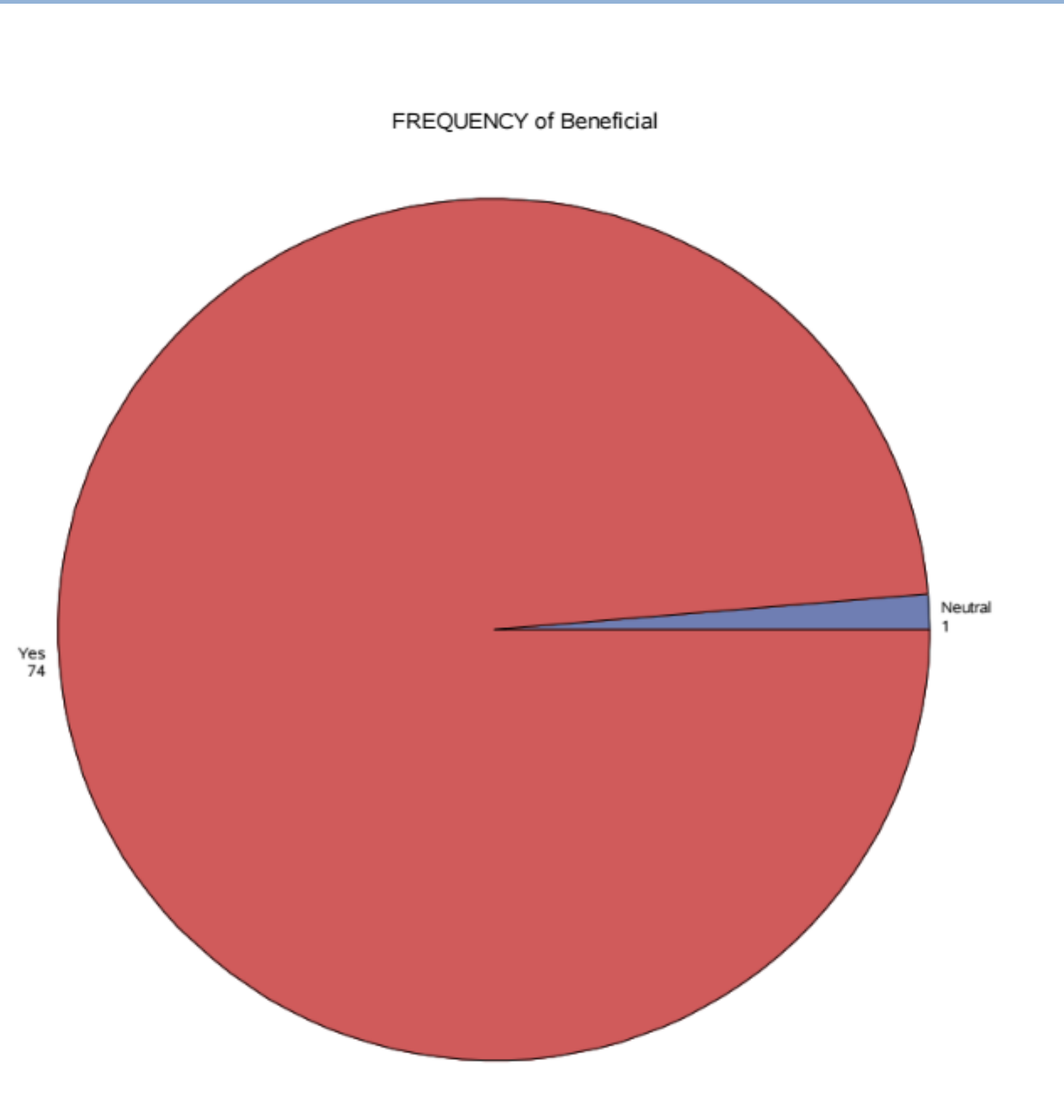
CONCLUSIONS

This project in particular, focused on educator evaluations of Code.org workshops, specifically, how beneficial the workshops were, which types of activities were most favored, and if any of the workshop activities had been implemented. From these workshops, educators are provided various activities that can be incorporated into their curriculum depending on their teaching style. This project is significantly important to show how the lack of computing in the curriculum is drastically decreasing due to efforts like Code.org workshops.

With these workshops, more educators are being exposed to beneficial computing resources and teaching methods to assist them in incorporating basic programming aspects. As more teachers participate in workshops like these, it will increase student's exposure to common programming practices and concepts. By exposing more students to programming, it increases the likelihood of those students developing a passion for technology. Therefore, it can increase the chances of streamlining those students towards a career in information technology. With the influx of new talented individuals to the field, it will bring even more creative ideas and solutions for present and future problems. Through the power of technology, education, and collaboration, we can continue to positively change the world together!

REFERENCES

"About Us." *Code.org*. N.p., n.d. Wed. 29 Jan. 2017.

Pringle, R.M., Dawson, K. & Ritzhaupt, A.D. J Sci Educ Technol (2015) 24: 648.
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