

THE EFFECT OF POINTS AND AUDIO ON CONCENTRATION, ENGAGEMENT, ENJOYMENT, LEARNING, MOTIVATION, AND CLASSROOM DYNAMICS USING KAHOOT!

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As presented by Siren and Karen

OVERALL



- Goal: evaluate the effect of the use of audio and points in the GSRS Kahoot!
 - GSRS: Game-based student response system
- Points and music are well-studied and each may have their own effects on the experience and behaviour when playing Kahoot!
 - Unique: Looks at audio and points isolated
 - I.e. full kahoot, no audio, no points, and no points & no audio

RELATED WORK



- Older educational games have some issues
 - Few platforms (Windows PC)
 - Too simplistic
 - Single player, offline
 - Low production value, targeted towards parents
- Tom Malone's theory of intrinsically motivating instructions
 - Challenge, fantasy, curiosity
- Main focus of Kahoot! is student motivation and engagement through gamification
 - By making the classroom into a game show

MATERIAL AND METHOD



- Null-hypothesis:

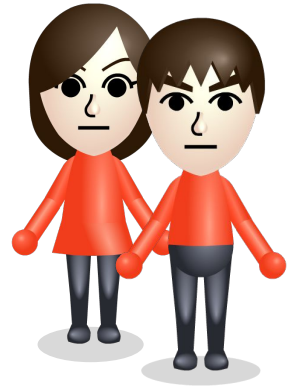
“there is not difference in students’ attitude related to variations in use of audio and points in a game-based learning platform”

- Research questions, how does the use of audio and points affect the...
 - Concentration, engagement, enjoyment, motivation & effort, learning outcome, classroom dynamics

PARTICIPANTS

- Students at NTNU, IT introductory course here at NTNU in 2015
 - Large classes with many students
 - Four parallels with the same lecturer and lectures
 - First year students, i.e. fairly uniform students

- Students answered during the end of the Kahoot!, and was observed to see classroom dynamics



RESULTS: CONCENTRATION



Statement	Group	Disagree	Agree	H	P
1. Playing the quiz did not hold my attention	Full Kahoot!	85%	15%	0.23	0.9726
	No audio	84%	16%		
	No points	84%	16%		
	No audio/points	82%	17%		
2. The quiz kept my concentration during the lecture	Full Kahoot!	18%	82%	60.25	<0.0001
	No audio	16%	84%		
	No points	16%	84%		
	No audio/points	28%	72%		

RESULTS: ENGAGEMENT



Statement	Group	Disagree	Agree	H	P
3. I thought playing the quiz was boring	Full Kahoot!	93%	7%	2.42	0.4899
	No audio	96%	4%		
	No points	91%	9%		
	No audio/points	84%	16%		
4. I felt increased pulse when answering questions	Full Kahoot!	31%	69%	50.56	<0.0001
	No audio	32%	68%		
	No points	61%	39%		
	No audio/points	68%	32%		

RESULTS: ENJOYMENT



Statement	Group	Disagree	Agree	H	P
5. Playing the quiz was fun	Full Kahoot!	8%	92%	9.68	0.0215
	No audio	6%	94%		
	No points	9%	91%		
	No audio/points	25%	75%		

RESULTS: PERCEIVED LEARNING



Statement	Group	Disagree	Agree	H	P
5. I learned something from playing the quiz	Full Kahoot!	5%	95%	1.17	0.7602
	No audio	10%	90%		
	No points	2%	98%		
	No audio/points	2%	98%		

RESULTS: MOTIVATION AND EFFORT



Statement	Group	Disagree	Agree	H	P
6. It was important to do well on the quiz	Full Kahoot!	28%	72%	2.8	0.4235
	No audio	22%	78%		
	No points	34%	66%		
	No audio/points	34%	66%		
7. Playing the quiz could be of some value to me	Full Kahoot!	7%	93%	0.78	0.8542
	No audio	7%	93%		
	No points	6%	94%		
	No audio/points	11%	89%		
8. I did not try very hard to do well on the quiz	Full Kahoot!	77%	23%	11.74	0.0083
	No audio	93%	7%		
	No points	74%	26%		
	No audio/points	64%	36%		
9. Playing the quiz made me less motivated about the subject	Full Kahoot!	93%	7%	0.25	0.9691
	No audio	91%	9%		
	No points	90%	10%		
	No audio/points	90%	10%		

RESULTS: CLASSROOM DYNAMICS



- **Full Kahoot!:** High spirit in the classroom, laughter, focused students, loud discussions between the questions in the quiz, loud cheering when getting the correct answers, some students started to dance in their seats, and there were open questions to the teacher during and at the end of the lecture. The class was highly responsive.
- **No audio:** Quiet classroom, concentrated students, no cheering, no discussion among students, and no questions during the lecture.
- **No points:** High spirit in the classroom, laughter, quiet cheering when getting correct answers, some discussions between questions, open questions during the lecture, and some students were dancing in their seats.
- **No points/no audio:** Low energy in the classroom, totally quiet, no celebration on correct answers, low response, and now open questions from students.

CONCLUSION



“The results show that variation in use of audio and points had a statistically significant difference for concentration (RQ1), engagement (RQ2), enjoyment (RQ3), and motivation and engagement (RQ5).

Observations in the classroom also revealed that audio and music affects the classroom dynamics in a significant positive way, and points also contribute to improve the classroom dynamics but to a more limited extend.”