HandTalk AR Cube

for Teaching Adjective Using American Sign Language for Hearing-impaired and Mute Learners

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INTRODUCTION

- Doodles are simple drawings that can represent concrete meanings or abstract designs.
- AR is defined by combining or supplementing real world object with virtual environment.
- Hearing impairment, deafness or hearing loss is a partial or total inability to hear.
- The integration of Doodling and AR cube can help hearing impaired and mute students to learn ASL in a fun and relaxed way.

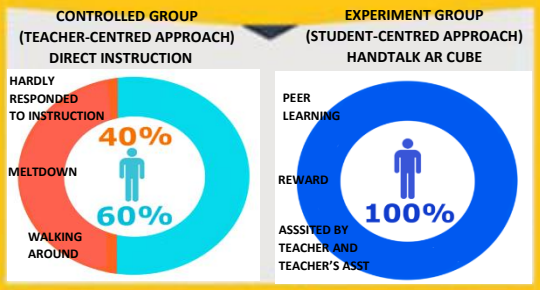
AIM

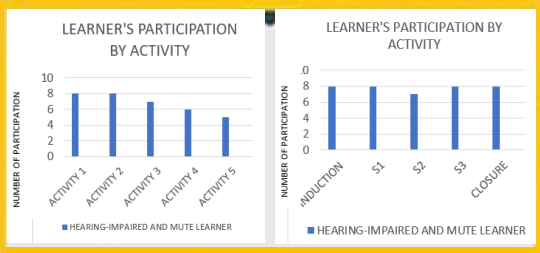
- To compare the effectiveness of HandTalk AR cube with direct instruction approach in teaching adjective using ASL to hearing-impaired and mute learners and examine their level of participation.

OBJECTIVES

- To compare the level of participation among hearing-impaired and mute learners using direct instruction approach as controlled group and HandTalk AR cube as experimental group.
- To seek out the effectiveness of HandTalk AR cube in assisting hearing-impaired and mute learners in learning adjective using ASL
- To provide evidence on technology and artistic instructional media as alternative for special needs' learning development especially learners with difficulties in non-verbal development such as sensory impaired, deaf, autistic and down-syndrome.

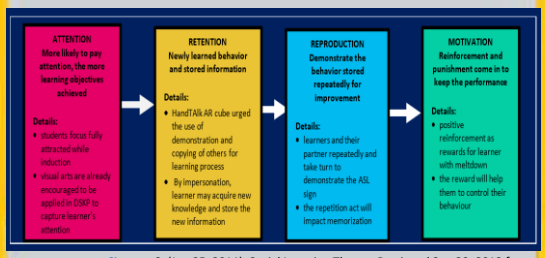
RESULT



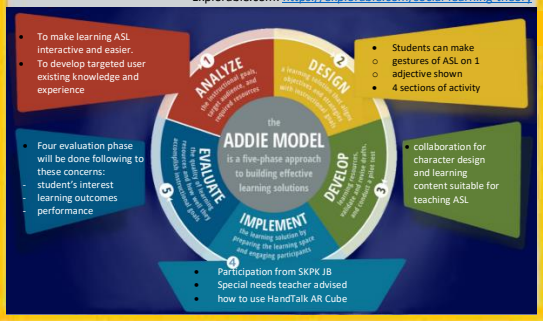


DISCUSSION

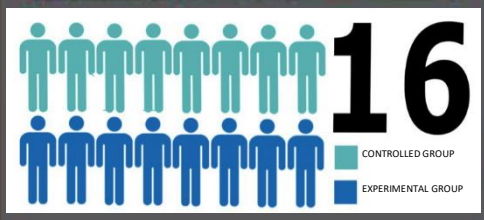
- The results of the collected data showed that 8 of 8 hearing-impaired and mute learners from the experimental group were highly participated in the activity using HandTalk AR cube with their partners and were able to complete the task successfully.
- Based on Social Learning Theory by Bandura, learners learn best through AR cube considering these 4 elements:



Sincero, S. (Jan 25, 2011). Social Learning Theory. Retrieved Sep 30, 2019 from Explorable.com: https://explorable.com/social-learning-theory



METHODOLOGY



EXPERIMENTAL METHOD

- A systematic method and scientific approach in which the researcher manipulates one or more variables, and controls and measures any change in other variables (Seltman, 2018)

PARTICIPATION

- A total of 16 hearing-impaired and mute learners between the age of 9-10 years from SK Pendidikan Khas, Johor Bahru were selected as samples.
- Random sampling technique was employed. The samples were selected from a given population and every member had an equal opportunity to participate in the process.

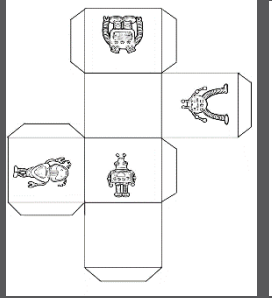
PERMISSIONS

- Gain permission from SKPK to proceed the learning session and interviews.
- Video cameras and audio recorders used to record in-depth activities but restricted due to administration request and child assent

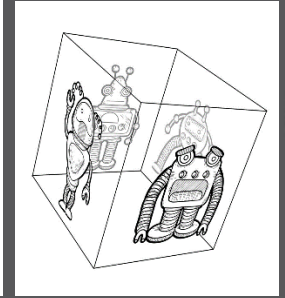
EVIDENCES

ACTIVITIES	EVIDENCE
• Students were introduced with signs 'hello' and 'how are you?' • Students repeated the signs with their friends in the group	• **Learners impersonated** the teacher sign "hello" • **Students smiled** while doing it with their partners. • **Students took turn and repeated the sign** hello and how are you.
• Students looked into images of doodle pattern and the sign "good' was shown to them. • Students were given the cube layout for doing the doodle cube activity	• **Teacher showed the sign good to students to** draw and colour • Student **repeatedly made a sign**, draw and colour it to their partner.
• Students created doodle on cube based on their own creativity. • Teacher assisted low-focused students and helped them paste the layout into the cube	• Student took out their stationeries and **stared the activity with their partners.** • **Students smiled and poked** their partners asking them about the used colours.
• Students tested each component of ASL learning in HandTalk AR cube • In pairs, students impersonated the sign 'beautiful' to their partner • Students took turn to show the sign to their partners.	• **Learners impersonated the sign** 'beautiful' using HandTalk AR cube • **Learners showed excitement and interest** • **Students performed** the **sign 'beautiful' repeatedly** with their partner
• Student showed the sign "beautiful" • Student performed the sign "beautiful".	• Teacher **gave titbits** for their participation and one learner who had meltdown • Student **smiled** and showed the **sign good**

HandTalk AR Cube



Cube layout for Doodling activity



Cube with fixed marker for ASL teaching

CONCLUSION

The findings indicated that....

- social learning theory based HandTalk AR cube had positive impact on hearing impaired and mute learners.
- HandTalk AR Cube 4 components helped hearing-impaired and mute learners learn English as they visualized the sign 4 times.
- HandTalk AR Cube encouraged the learners' participation and build their interest towards better learning.
- As most of hearing-impaired and mute learners are highly interested in artistic activities, the integration of doodling and AR technology helped them with gaining self-confidence and feel worthy. Thus, the overall effect was positive.

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