The Google Effect: Technological Transformation Awareness and Deliberation in Teaching

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ABSTRACT
The autodidactic revolution is where there is no human teacher - only a digital one. Complete artificial intelligence (AI), digitization in marketing, teaching, and learning may never occur because of numerous limitations. Limitations include (a) robotic and AI saturation; (b) AI transformation of paper to hybrid system; (c) audio components for hybrid projects, and (d) AI audio components in ChatGPT. In academia, technological audio domains refer to devices through which one speaks, while teaching and learning. Those speaking devices are found in a wide variety of devices including voice recorders, telecommunications, Alexa blue tooth, navigation devices, Siri for Apple, Bing or CoPilot for Microsoft. Currently, Chat GPT only uses a written chatbot to receive and answer questions, but verbal versions are in development. This quantitative case study uses person environment fit theory and how pertaining human behaviors in their environments and technology may be a misfit. This case study example proposes four topic areas of audio technology for Google Effect, artificial intelligence (AI), hybrid teaching, and ChatGPT, as they apply to marketing programs and teaching. The results of the study will be analyzed to create themes and make recommendations regarding the benefits of speaking rather than writing questions and answers to obtain data. Verbal communication is easier than typing, but results in many transcription mistakes, like synonymous words that are spelled differently but sound the same. When students at all levels do assignments, validity of technology data searches, challenges plagiarism accepted allowances, 15 percent. Plagiarism allowances and the use of only secondary and no primary sources and the lack of knowing authors' referenced credentials violate validity. In this hypothetical case, findings showed results either with or without statistical significance through a construct validation.

Keywords
Artificial Intelligence (AI),ChatGPT, VoiceRecognition, Audio Technology, Robotics, Siri, CoPilot, Apple, Bing, Microsoft, Teaching, Learning, Marketing, Plastic Surgery

1. INTRODUCTION
Though robotics and AI are advancing, they may not fully control marketing education. In a recent study, the audio components for the transformational digitization period for students compared classroom and homework projects (including phased) and voice recognition devices, like ChatGPT (Siri by Apple and Bing or Co-Pilot by Microsoft). Open AI does not have an audio version yet. Thishypothetical study proposed research to identify challenges of adapting to digitization in education and what this means to marketing teaching and learning. This case study validated ecologically and emphasized the need for human intervention, not just digitization and computers. This study's ecological validity is generalizable to other real-world settings. Researchers examined polarizing consequences of AI rapid advancements and algorithmic literacy [8].[1]The researchers used the Fit Theory Model and analyzed how individuals' behavior aligns with their environment, and considered both fits and misfits [1, 11]. An example of a misfit of person and environment was people on other continents other than the United States (US). This theory applied to students and the digital revolution. The four topics discussed were the Google Effect, Artificial Intelligence and its limitations, hybrid model of teaching needed for a ten-year period, and ChatGPT.

2.DEFINITIONS
2.1 Google Effect- refers to the adaptation period required to integrate digitization in teaching, through a search engine.

2.2 Paper, Paper andDigital (Hybrid), and Digital- Currently, poster boards, PowerPoint presentations via overhead projector, Google Drive, and Google Docs are utilized.Is total digital transformation possible? The need for students to interact for natural procreation, workshops and residencies are not enough on virtual teaching programs.

2.3 Artificial Intelligence (AI)- the intelligence of machines or software, as opposed to the intelligence of human beings or animals.

2.4 AI Limitations-constraints on the operational scope of machine or software intelligence.[8], discovered that complete digitization has effects on students' mental health [7].

*2.4.1 Ivy League University Future-*Harvard University certificate and first robotic teaching endorsement and the tenured professor's time allocation with digital intensity and substantial teaching responsibilities [6].

2.4.2 Online Vs. Brick-and-MortarCost Distinctions- affordability, credibility and predatory institutionsaffect sustainability of the traditional in-person teaching at all levels of education.

2.5 Hybrid Teaching Model Over a Decade-

*2.5.1 Paper-*using the traditional method in teaching and learning.

[1] https://eric.ed.gov/?id=EJ1468031

2.5.2 Paper and Digital-involves a hybrid teaching style for a ten year plus period (2025-2035).

2.5.2.1- Phased Physical Projects-temporal projects with deadlines; to be used during class time in online and brick-and-mortarschools.

2.5.2.2- Phased Digital Projects- to be used when teachers and students send assignments back and forth over computer (Google Docs& Google Drive).

2.5.2.3- Audio Options- good volume potential and earphone/earbud/headphones for videos and tutorials.

2.5.2.4- Audio Portions- typically usable in the last phase of lessons with audio options.

2.5.3Digital-teaching how to use software to create reports, as a form of data mining.

2.6 Virtual Reality (VR)-is a computer-generated 3D simulation where participants can interact and perform tasks.

2.7 Chat Generative Pretrained Transformer (ChatGPT)-An autodidactic system which enables self-learning without the guidance of a teacher; recognized as one of the most widely adopted technological products in history [4, 5]. Chat Generative Pretrained Transformer is a large language based chatbot developed by open AI, noted to ensure users to refine and steer a conversation towards a desired length, format, style, level of detail, and language used. Predominantly used for Chatbot to create Apple Siri or Microsoft Bing or CoPilot-like texts.

2.7.1 Voice Recognition Systems-Alexa by Amazon provides simple responses to questions using voice. Siri by Apple andBing or CoPilot by Microsoft provide responses to questions in only text form, not verbal inquiry.

2.7.2 ChatGPT Limitations-[9] Learners used for assignments as a quick solution for assignments and grades, even though only a texting option is currently possible.

3. CHALLENGES AND OPPORTUNITIES

The combination of AI and VR technology helped bridge the skills gap and prepared students for the workforce of the future. AI created personalized learning experiences with interactive simulations, role plays, and real-world scenarios. Students worked on virtual projects and teams to gain hands-on experience and developed skills in a simulated environment.Nevertheless, for AI and VR technology to be truly effective, it was essential to integrate them with traditional teaching methods, human instructors, and interpersonal interaction. Additionally, it was critical to ensure that AI and VR technology was accessible and equitable for all students, regardless of socioeconomic background or geographic location.

4. BENEFITS, RISKSAnd CONCERNS

There were five benefits, risks and concerns:First, AI helped analyze student data, s. a. grades, learning patterns & preferences to adapt content and delivery methods to individual needs and learning styles. Secondly, artificial intelligence facilitated personalized learning experiences, allowed students to progress at their individual pace and they received customized assistance. Third, AI helped instructors with new tools to improve the effectiveness of their teaching. Fourth, AI automated time-consuming tasks like grading and feedback, freed teachers to focus on more critical tasks like mentorship and relationship building with their students. Fifth, risks included privacy and security of data, prohibitive cost of technology, training and maintenance of technology.

One of the most pressing ethical concerns surrounding the integration of AI and VR technology in education was the potential for bias in algorithms. When AI systems are designed and trained, they can inadvertently incorporate biases present in the data. This can lead to unequal treatment of students based on race, gender, socioeconomic status, or other factors, perpetuating existing inequities in education. It is crucial for educators and developers to be aware of these potential biases and to actively work towards minimizing them by using diverse and representative datasets, regularly auditing AI systems, and involving stakeholders from various backgrounds in the development process.

Another significant concern was the possibility of replacing human teachers with machines. While AI and VR technology offered personalized learning experiences and simulated real-world scenarios, the technology couldn't replicate the human touch that is essential in education. Teachers provided emotional support, mentorship, and interpersonal interactions that machines cannot. The fear of dehumanizing education and losing the valuable contributions of human educators was valid. Therefore, it was essential to use AI and VR as complementary tools that enhanced traditional teaching methods rather than replace them. Balancing technology with human interaction ensured that students received a holistic education that prepared them for the complexities of the real world. Limitations applied to the deaf that couldn't benefit from audio components in AI digitization.

5. INTEGRATING AI IN EDUCATION

Therewere eight factors for integrating AI in education for teaching and learning success. These eight factors5.1-5.8are asfollows:

5.1 Understanding Potential Benefits and Limitations- Educators comprehended the advantages and drawbacks of AI technology.

5.2 Explore and Experiment- It was essential to investigate and try out various AI and VR toolsand resources in paper, hybrid and digital methods of teaching.

5.3 Assess the Impact on Student Learning- Educators evaluated how AI affects skilldevelopment and learning outcomes.

5.4 Identify New Teaching Methods-Educators discovered innovative ways to teach and learn using AI technology.

5.5 Align Technology With Learning Objectives-Educators chose AI tools that match educational goals and desired outcomes.

5.6 Design Interactive Learning Activities- Educators created activities that incorporated AI to achieve learning objectives.

5.7 Faculty Training and Collaboration- Involved teachers in training and development process.

5.8 Working With Technology Experts- Involvd engineers**,** specifically computer programmers in teaching andtraining development process.

6. PROBLEM, PURPOSE, RESEARCH QUESTIONS, METHOD

The problem statement for the study was marketing teaching and learning lacks recognizing numerous AI limitations. The purpose of thestudy was to examine challenges of AI digital transformation in marketing teaching and learning and the use of audio domains and ChatGPT in the AI revolution The first research question was what are the main challenges of AI digital transformation in marketing education?The second research question was what are the differences between marketing teaching and learning strategies, concerning audio domains for using lap-tops, tablets (Ipad), and phones, compared to ChatGPT in the AI revolution? The proposed method is a quantitative case study.

7. HYPOTHESES

There are four hypotheses 7.1-7.4 for this case study as follows:

7.1Complete AI digitization Will Not Occur:

in marketing teaching and learning because of robotic and AI saturation through model construct.

7.2 AI Transformation OfPaper ToHybrid Are Validated ThroughModel Construct.

7.3 AI Audio Components ForAHybrid Project Are Validated Through Model Construct.

7.4 AI Audio Components in Chat GPT Are Validated Through Model Construct.

8. THEORY, POPULATION, SAMPLE And ETHICS

The proposed theorywas Person Environment Fit [1]. The population is US teachers, educators, and professors. The approximate 30 samplewas Mid-northern United States teachers and professors Kindergarten through eighth grade, or undergraduate, graduate and doctoral levels. Ethical Considerations includedInformed Consent and Institution Review Board process. Data collection included sending survey monkey software questions via email addresses.

9. RESEARCH VARIABLES

Proposed dependent variables (is based on something prior) included student mental health accessibility of technology, affordability of audio components, fallibility of voice recognition fatigue and physical and mental from digitization rigor. Independent variables (not based on something prior) included inevitability of digitization in teaching, lack of primary data; invaliditylack of phased projects (with or without audio), plagiarism offenses (online publications outside of Universal library and academic databases; social media & publishing webs), addict ability of technology.

10. DATA COLLECTION MODEL

The data collection model in Figure 1 illustrated the vertical arrow list as the most functional.Through the survey questions administered in data collection, the Figure 1 model shows progression or sequential steps in a task process, or workflow that moves toward a common cause. The vertical arrows list was most efficient when the 13 survey questions are divided in half (see (17. Appendix A). The first half of the questions referred to hypothesis one and hypothesis two to concentrate on respondent responses pertaining to non-audio components. The second half of the questions referred to hypothesis three and hypothesis four to concentrate on AI audio components in projects.

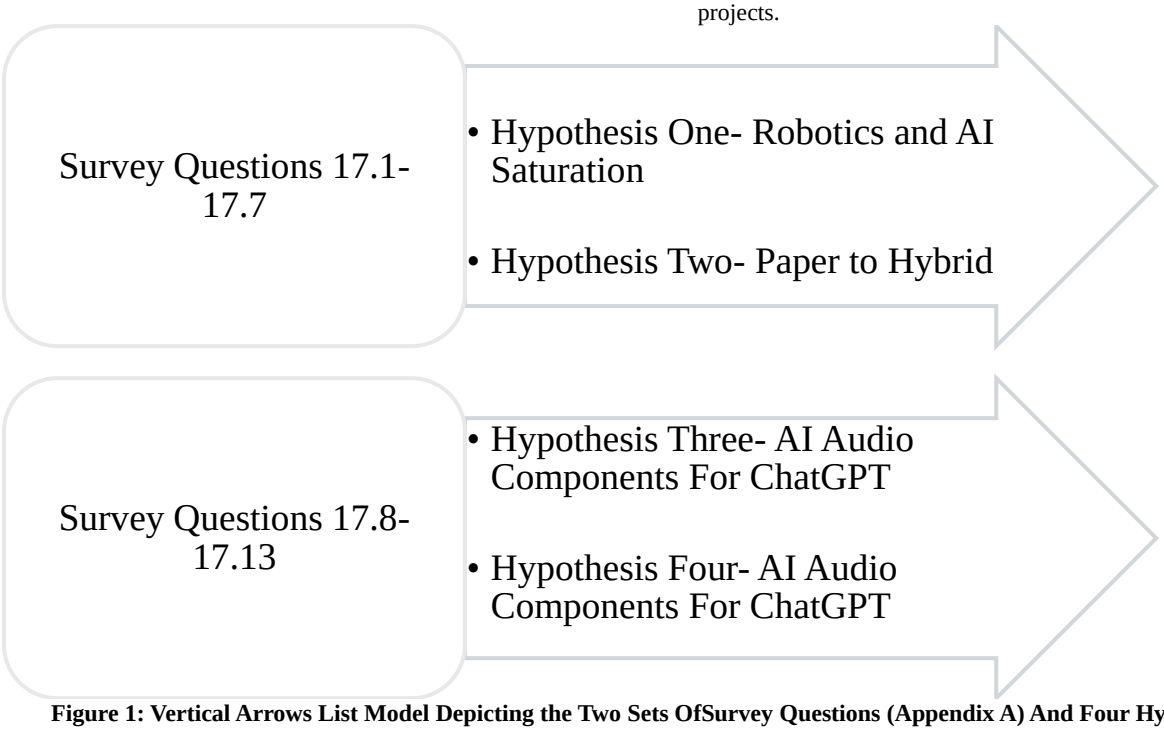

Figure 1: Vertical Arrows List Model Depicting the Two Sets OfSurvey Questions (Appendix A) And Four Hypothesis

11. SURVEY QUESTIONS

There were thirteen questions, 11.1-11.13, included in a Likert Scale survey as the means of data collection. Researchers sent these questions to the sampleby Survey Monkey software via email addresses. The check-off answers required on the Likert scale were tallied from the sample respondent results (see Appendix A).

12. DATA ANALYSIS AND CONSTRUCT VALIDITY

The proposed study validation was "construct" using Pearson Correlation analysis (see Table 1). It was common sense that AI completely replacing human intervention was determined as not feasible. Data analysis by researchers used a T-test (30 sample) to perform regression analysis [3] using quantitative research software to test for statistical probability with >.02 to >.05 significance. Through frequencies that showed significance in a regression analysis; co-variance and coefficients with simple regression analysiswasused in a scatterplot graph example[3] (see Figure 2).

Mean and Standard deviation calculations through frequencies were used to determine significances. For example, on the Likert Scale survey, every time a respondent's answer hit a category, frequencies were tallied and recorded. Mean was determined if five survey questions were recorded for example. Those ladder numbers were added and then divided by five, 1 + 2 + 3 + 8 + 7 = 21/5= 4.2. Variance was determined in the following formula for the latter numbers (n-mean) squared and added; $(1 - 4.2)^2 + (2 – 4.2)^2 + (3 - 4.2)^2 + (8 – 4.2)^2 + (7 – 4.2)^2$ = 38.8. 38.8/5 =7.76. Next, standard deviation was determined by the square root of the variance; 7.76;$\sqrt{7.76}$ = 2.79. Sample variance example is (variance/n-1)38.8/4 = 9.7; and last, the square root of 9.7; $\sqrt{9.7}$ = 3.11. The latter computations were used in this proposed case study.

Table 1: Regressive Analysis 2.2 Covariance and Correlation Coefficient Data Example [3].

Observation	Response Variable	Predictor
Number	Y	X
1	Y1	X1
2	Y2	X2
.	.	.
.	.	.
.	.	.
.	.	.
n	Yn	Xn

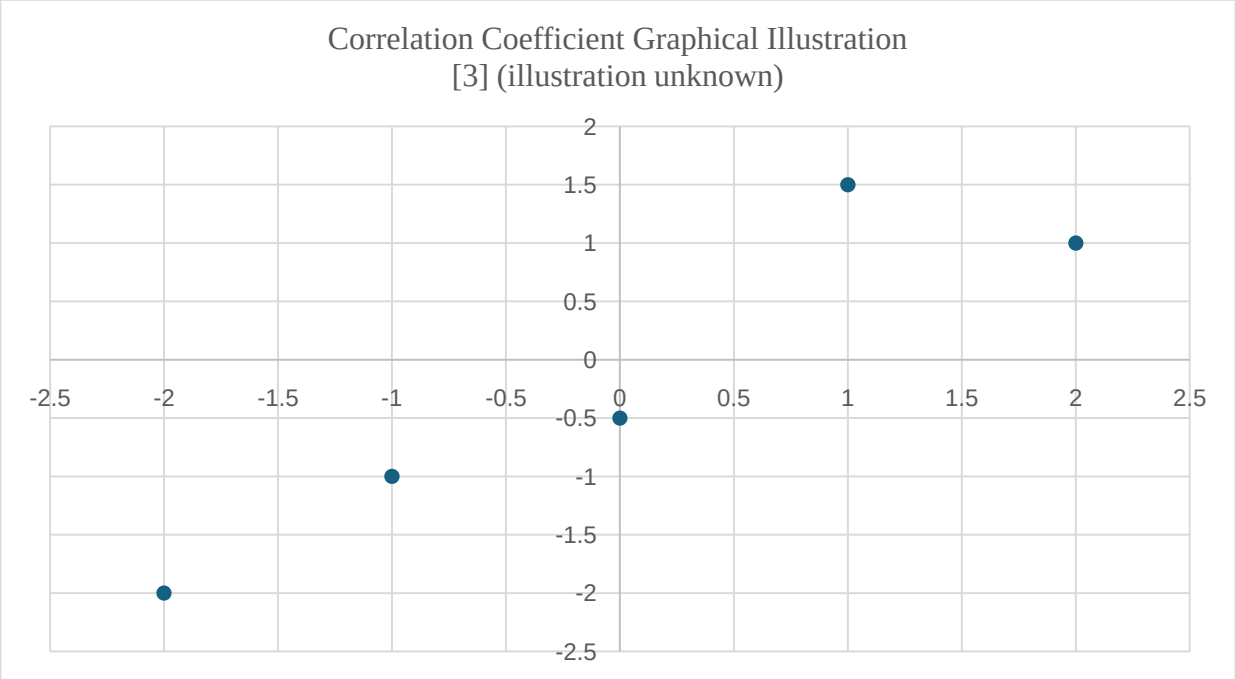

Figure 2: Scatterplot Chart Depicting X Axis As Correlational Coefficient r = 0 Artificial Intelligence Marketing Teaching And Learning Data Analysis

13. DATA FINDINGS

Findings showed significant limitations to complete digitization in marketing teaching and learning. Specifically, audio technology, when referring to the four study topics of the Google effect, AI, hybrid teaching and ChatGPT were necessary components for obtaining data for development. The need for audio technology for voicecommand was hypothetically significant. The latter significance was observed in different speaking devices. Typing and texting required much more work and effort than speaking commands.

The public health crisis with COVID-19, presentedthe need for optimizing communication through unique styles [2]. For example, a unique communication style was The Amplio Talking Book that mimics a walky-talky [2]. The Amplio Talking Book is a battery-powered audio device that records, stores,and replays audio communications on different topics [2]. The nifty Talking Book handheld device is an example of an audio device that provided value in 3rd World health

communication situations butwas also applicable to 1st and 2nd World health audio communicationdevelopment. Although The Talking Book device came with instruction to use, it was an autodidactic system enabling self-learning without the guidance of a teacher.

Another example of the need for audio component commands was for robotics surgery in the medical profession. Robotics are usable in plastic and reconstructive surgery and may benefit from the development of voice command for surgery programming [10]. Enhanced precision, dexterity and visualization are three benefits that are essential for the complex nature of plastic surgery procedures [10]. Specifically, voice command to instruct robotic programming may benefit plastic surgery efficiency from a meticulous perspective for contouring body parts. Biomimetics is the practice of addressing human challenges in plastic surgery. Biomimetics applies not only to vanity related surgical procedures like a facelift, but also to bodily disease malformity requiring reconstruction like from breast cancer nipple sparing mastectomy or reconstruction of a cut-off finger[10].

Figure 4 shows thecycle matrix model and demonstrates the comparison of the four hypothetical case study topics to hypothesis. The letter topics are Google effect, AI, hybrid teaching and ChatGPT and used a cycle matrix to compare to the four hypothesis of robotics and AI, paper to hybrid difficulties, AI audio components for hybrid and for ChatGPT.

14. SCOPE, THEMES, CONCLUSIONS AND RECOMMENDATIONS

The scope of this case study included the risks and detriments, along with the benefits of audio components for marketing teaching and learning. Discussions in marketing teaching and learning in the proposed study upon finding results assisted in Open AI audio possibilities for students at all levels. Currently, Open AI audio is only in the development stages. Gemini AI is the newest ChatGPT, but an audio version is underdeveloped with only chatbot texting options.

Conclusively, a complete transformation to digitization without a hybrid option was not feasible. Therefore, human intervention was needed as an inductive reasoning measure, in marketing teaching and learning. The Person-Environment Fit Theory was applicable as digitization with or without audio, but not possible without human guidance. Figure 3 illustrates The Person Environment Fit Theory that the hypothetic outcome of AI technology with audio wasa gain and non-loss and a fit as opposed to a misfit [11]. Conversely, the hypothetic outcome of AI technology without audio was a loss and non-gain and a misfit [11].

Recommendations includedexpoundingplagiarism control, minimizing privacy infringement and observed lack of online regulation. Plagiarism control is essential to keep at <15%. Giving accreditation to founding forefathers was a critical part of technological development and advancement. Second, minimizing privacy infringement was essential. The use of coding and second and third validation measures ensured not only privacy but safety from theft and fraud.

15. THEMES AND FUTURE RESEARCH

Three themes evolved from this study; criticality, awareness and how to train your dragon.

15.1CriticalityOfAudio Technology In Marketing Teaching And Learning

The first theme that evolved was the criticality of audio technology in marketing teaching and learning. Audio technology, specifically to be able to speak into a device and not have to write, saved time and energy. For marketing teaching and learning this meant greater efficiency for teachers and professors. Greater efficiency means the digitization of instruction both in the physical and online classroom settings.

15.2 Awareness of Audio Recognition Fallibilities

The second theme is awareness of audio recognition and its' fallibilities. Audio fallibilities in teaching and learning included the recognition of all voices, not one individual. Another fallibility is an audio recorded message that is typed out in text form, is subject to words that sound alike but have different meanings. Also, audio recorded transcriptions are subject to hyperbole and onomatopoeia that can be misrepresented. A hyperbole written in text form can exaggerate, and a onomatopoeia can form a word froma sound associated with what is named. Both hyperboles and onomatopoeias can be audio technological fallibilities in marketing teaching and learning.

15.3 How To Train Your Dragon As Applied To Audio Technology in Teaching And Learning

The third theme is how to train your dragon, which traditionally referred to how to teach your child from a young age. In thiscontext, how to train your dragon,refers to sole audio mastership and the option of a identity chip in the human body for detection. Sole audio recognition would allow only one individual to have control of his or her device and its' activation. The sole recognition would empower only one owner to open the technology and for use the audio device. Marketing teaching and learning researchers may consider an implanted chip in the human body for identification. An implanted chip in the human body would alleviate a coding needed for authorization and identity verification purposes. A human chip would possibly be implanted at birth as a plastic surgery procedure. The identity implant would be applied upon birth for identity detection purposes and takethe place of two-step verification processes for authentication on computers.

16. FUTURE RESEARCH

Future research applies to other teaching areas, not only in business, but all other academic realms. Marketing is just one realm of academia, but audio technology developments can be incorporated futuristically in advertisement, accounting, finance, history, engineering and all of the social science teaching and learning areas.Next, future researchercan expound on 2nd and 3rd World Internet and digitization with audio components, not just 1st World countries that predominantly use Apple and Microsoft. Caution isinevitable as a complete digitization eliminating human interaction, is considered an anti-Christ or associates with the end of theWorld.Lastly, future research is needed for the deaf, or the hearing impaired, who would not be able to use audio component in AI digitization. Brail options and a server speaking only system for the blind anddeaf, in lieu of text typing and interacting with a computer, is a future research study.

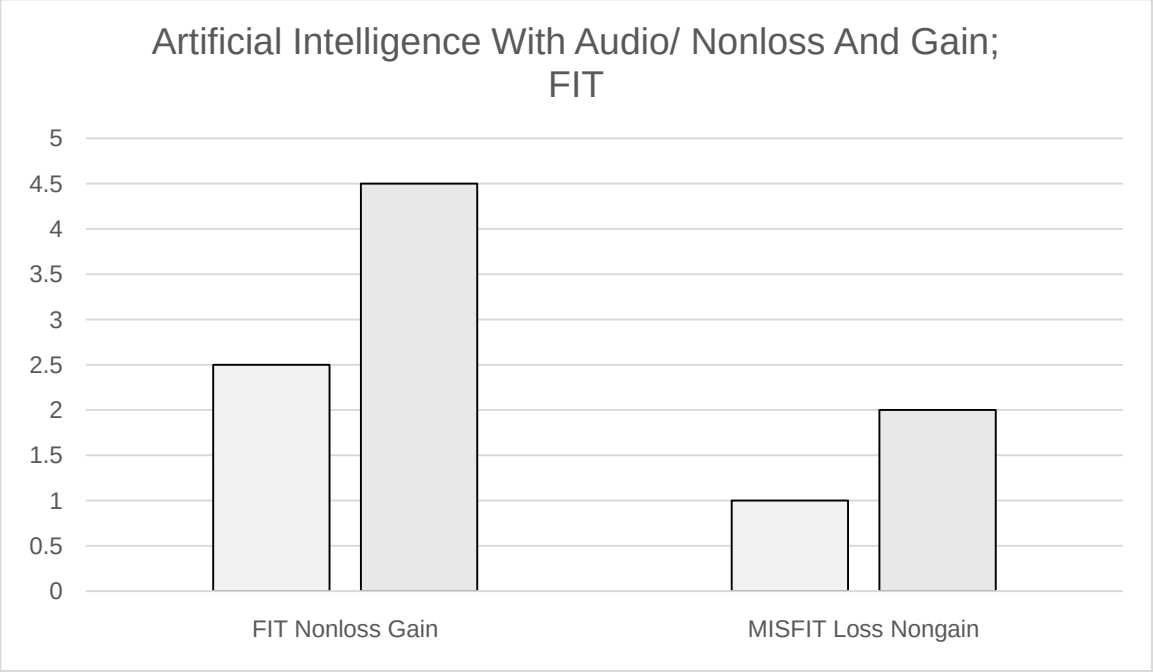

Figure 3: Clustered Columns ChartForProposed Outcomes OfAudio AI; Different Fits and Misfits ForTeaching and Learning

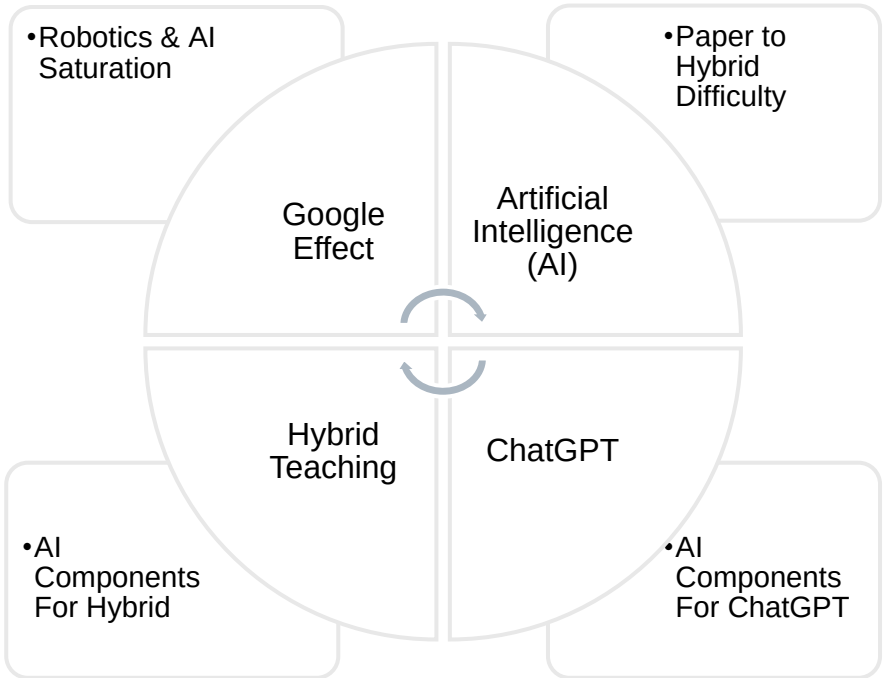

Figure 4- Cycle Matrix Model Comparing Four Proposed Case Study Topics InThe Inner Circle To Four Case Study Hypothesis

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17. APPENDIX A

Circle the correct answer.

17.1 AI strategies in teaching and learning will change in the transformative years.

None
Some
Slightly Moderate
Moderately
Moderately Complete
Above Moderately Complete
Completely

17.2 AI limitations will be beneficial for teaching and learning.

None
Some
Slightly Moderate
Moderately
Moderately Complete
Above Moderately Complete
Completely

17.3 Complete digitization of AI for teaching and learning will impact all types of employment positions.

None
Some
Slightly Moderate
Moderately
Moderately Complete
Above Moderately Complete
Completely

17.4 Students will benefit from a hybrid teaching and learning option with paper as well as digital projects.

None
Some
Slightly Moderate
Moderately
Moderately Complete
Above Moderately Complete
Completely

17.5 AI audio options (phase 3 audio only) will differ for paper and digital projects for in class vs. homework in teaching.

None
Some
Slightly Moderate
Moderately
Moderately Complete
Above Moderately Complete
Completely

17.6 AI audio options will differ when comparing digital projects with audio components and the ChatGPT chatbot system inteaching.

None
Some
Slightly Moderate
Moderately
Moderately Complete
Above Moderately Complete
Completely

17.7 AIwill be not be validated in teaching if majority of information is secondary data; lack of primary data.

None
Some
Slightly Moderate
Moderately
Moderately Complete
Above Moderately Complete
Completely

17.8 Personalized support in ChatGPT offers tailored and interactive help to students and self-learners.

None
Some
Slightly Moderate
Moderately
Moderately Complete
Above Moderately Complete
Completely

17.9 Real time feedback and guidance in ChatGPT helps autodidactic students actual feedback as they progress through the course materials and resources stay on task.

None
Some
Slightly Moderate
Moderately
Moderately Complete
Above Moderately Complete
Completely

17.10 Increased accessibility in ChatGPT to students because it is available in various platforms like website, smartphone app and messaging services.

None
Some
Slightly Moderate
Moderately
Moderately Complete
Above Moderately Complete
Completely

17.11 Convenient and flexible learning in ChatGPT for students because they can talk to chatbot on their own terms and speed.

None
Some
Slightly Moderate
Moderately
Moderately Complete
Above Moderately Complete
Completely

17.12 Enhancing the use of open education resources in ChatGPT for students can offer individualized advise and suggestions for the vast array of online learning tools and materials.

None
Some
Slightly Moderate
Moderately
Moderately Complete
Above Moderately Complete
Completely

17.13 Self-assessment and reflection in ChatGPT for students to reflect on their own progress and determine problem areas.

None
Some
Slightly Moderate
Moderately
Moderately Complete
Above Moderately Complete
Completely