Assessment 1 Changemaker Creativity Innovation and research

15 November 2025 15:31

Assessment 1 Changemaker Creativivity Innovation and ...

11/28/2025

Assessment 1

Innovation and research

MODULE NAME: CHANGEMAKERS, CREATIVITY AND VALUE CREATION

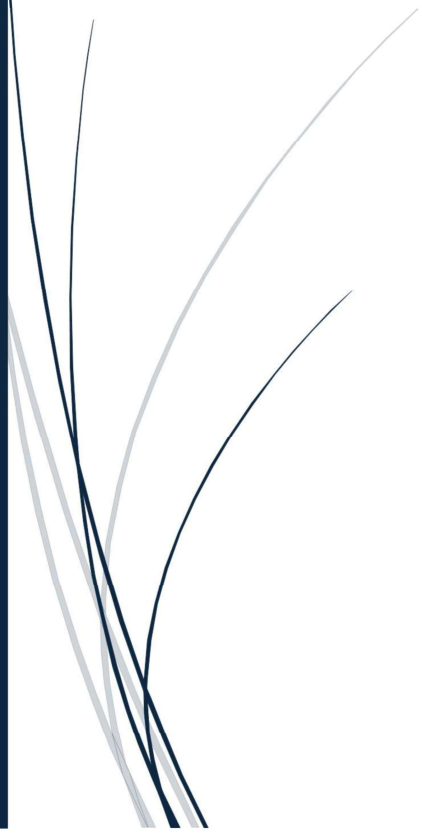
MODULE CODE: ACCA 5033

STUDENT NAME: ONEIL H CLARKE

STUDENT ID: 2409936

LECTURER: FAHAD AHMED

TRINITY SAINT DAVID UNIVERSITY OF WALES (LONDON CAMPUS)



Koushik Modak
STUDENT ID:

Table of Contents

Introduction 1

Main Body 2

Task 1 2

Ideation and Mind Map 2

Task 2 7

Aim, Objectives and research area 7

Task 3 10

Research and strategies 10

Conclusion 12

Reference 13

Appendices 14

Introduction

This assessment module is designed to equip me with essential skills to spot opportunities, cultivate innovative ideas, conduct research analysis, apply critical thinking and contribute meaningful value to society. Throughout the assignment I will explore how design thinking and research intersect revealing how integration can spark insights that benefit both individuals communities. It will also prepare me for the emerging trends and independents project modules in my final year of study.

Main Body

Task 1

Ideation and Mind Map

Innovation shaped the world in many different ways starting back from the 11th century China, ancient Rome to present day. The information I gathered about how innovation shaped the world will be added to the (right) side of my mind map. These are a few examples of information I gathered regarding how innovation shaped the world, starting with:

Foundations of Civilization

- **The Wheel (c. 3500 BCE)**: Enabled transportation and machinery, revolutionizing agriculture and trade.[1]
- **Concrete (Ancient Rome)**: Allowed durable infrastructure like roads and aqueducts, laying the groundwork for modern cities [1].
- **Compass (11th century China)**: Facilitated global navigation and exploration, leading to cultural exchange and colonization [1].

Knowledge and Communication

- **Printing Press (1440, Gutenberg)**: Democratized access to knowledge, fuelling the Renaissance and scientific revolution [2].
- **Telephone (1876, Bell)**: Connected people across distances, transforming business and personal communication.
- **Internet (1960s–1990s)**: Created a global information network, reshaping education, commerce, and social interaction [3].

Health and Medicine

- **Penicillin (1928, Fleming)**: Marked the beginning of antibiotics, saving millions of lives [1].
- **Vaccines (18th century onward)**: Eradicated diseases like smallpox and reduced global mortality [1].
- **Contraceptives (20th century)**: Empowered reproductive autonomy and reshaped societal norms.

Industrial and Economic Transformation

- **Steam Engine (18th century)**: Powered the Industrial Revolution, boosting manufacturing and transportation [2].

- **Internal Combustion Engine (19th century)**: Enabled cars and airplanes, revolutionizing mobility [1].
- **Electricity and Light Bulb (1879, Edison)**: Extended productive hours and transformed urban life [1].

Digital Age and Automation

- **Personal Computers (1970s–1980s)**: Made computing accessible, driving innovation in every sector [3].
- **Smartphones (2000s)**: Integrated communication, computing, and media into daily life.
- **Artificial Intelligence (21st century)**: Automates tasks, enhances decision-making, and redefines industries.

Space and Exploration

- **Satellites and GPS**: Enabled global positioning, weather forecasting, and communication [1].
- **Mars Rovers and Space Telescopes**: Expanded our understanding of the universe and inspired global collaboration.

Sustainability and Environment

- **Refrigeration**: Improved food preservation and reduced waste.
- **Renewable Energy Technologies**: Solar, wind, and hydro power offer alternatives to fossil fuels.
- **Electric Vehicles**: Reduce emissions and dependence on oil [2].

Social and Cultural Impact

- **Social Media Platforms**: Changed how people interact, mobilize, and express themselves.
- **Streaming Services**: Revolutionized entertainment and content consumption.
- **Digital Education Tools**: Broadened access to learning across geographies.

Innovation is seen as the engine of human progress. From the scope of digital revolution and ancient tools. Spawning a breakthrough that reshaped how we live.

On the (left) side of my mind map I decided to add a few ideas relating to my project AI Innovation and how it corelates to innovation of society today such as:

Healthcare Transformation

- **AI-Powered Diagnostics**: Tools like IBM Watson and Google DeepMind analyze medical data to detect diseases like cancer and Alzheimer's faster and more accurately than humans [4].
- **Predictive Analytics**: AI models forecast outbreaks and patient risks, improving preventive care.
- **Robotic Surgery**: Precision-enhancing robots assist in complex procedures, reducing recovery time.

Business and Economy

- **Automation of Repetitive Tasks**: AI streamlines operations in finance, HR, and logistics, boosting productivity [4].
- **Customer Service Chatbots**: Virtual assistants handle queries 24/7, improving user experience.
- **Fraud Detection**: Machine learning algorithms monitor transactions for anomalies, protecting consumers and institutions.

Education and Learning

- **Personalized Learning Platforms**: AI tailors content to individual student needs, enhancing engagement and outcomes.
- **Personalized Learning Platforms**: AI tailors content to individual student needs, enhancing engagement and outcomes.
- **Grading and Assessment**: Automated systems reduce teacher workload and provide instant feedback.

Transportation and Mobility

- **Self-Driving Vehicles**: Companies like Tesla and Waymo use AI for autonomous navigation, aiming to reduce accidents and congestion.
- **Traffic Optimization**: AI systems manage traffic flow in smart cities, improving commute times.
- **Logistics and Delivery**: AI routes packages efficiently, cutting costs and emissions.

Creativity and Media

- **Generative AI**: Tools like ChatGPT and DALL·E create text, images, and music, democratizing content creation [5].
- **Film and Game Development**: AI assists in scriptwriting, animation, and character modeling.

- **Deepfake Technology**: Raises ethical concerns but also enables realistic simulations and dubbing.

Environmental Sustainability

- **Climate Modeling**: AI predicts weather patterns and climate change impacts with greater accuracy.
- **Smart Agriculture**: AI helps farmers optimize irrigation, fertilization, and crop yields.
- **Energy Efficiency**: AI manages power grids and reduces waste in industrial processes.

Scientific Research

- **Drug Discovery**: AI accelerates the identification of new compounds and treatments.
- **Space Exploration**: AI analyses astronomical data and guides autonomous rovers.
- **Genomics**: AI deciphers genetic codes, advancing personalized medicine.

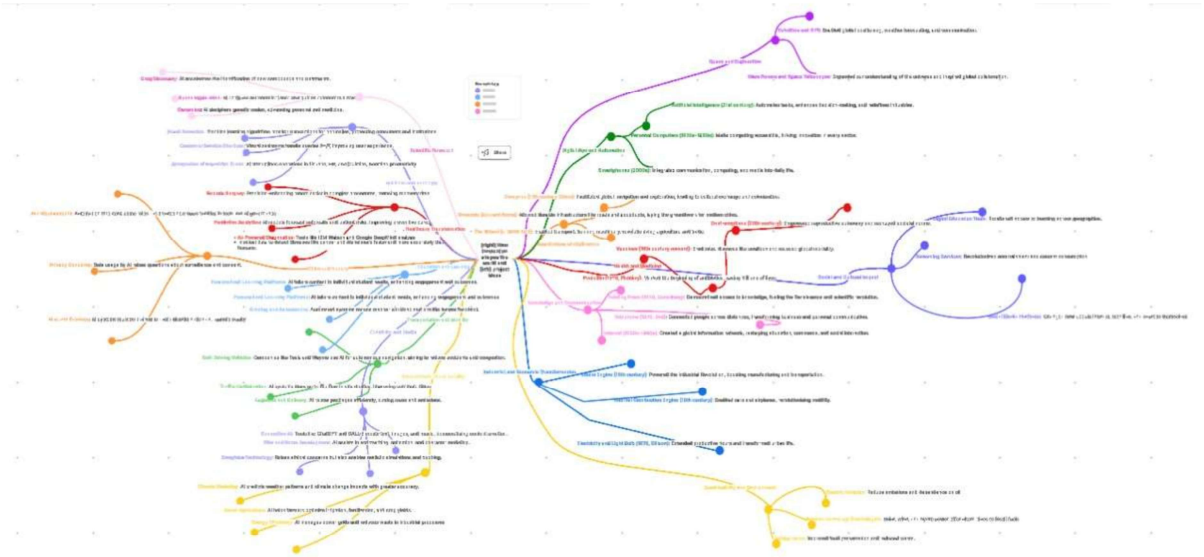
Ethics and Society

- **Bias and Fairness**: AI systems must be trained to avoid discrimination and uphold equity.
- **Privacy Concerns**: Data usage by AI raises questions about surveillance and consent.
- **Job Displacement**: Automation threatens some roles but creates new opportunities in tech and AI governance.

AI is not just a technological leap it seems more like a societal shift. AI is redefining what's possible as it influence grows.

Link: https://lucid.app/lucidsparkef45d4c8-9ddf-4589-b0ac-8409c1bf1b28edit?viewport_loc=-2705%2C-582%2C8190%2C3697%2C0_0&invitationId=inv_77f47

(AI innovation) (How innovation shaped the world)



Task 2

Aim, Objectives and research area

The project research area I choose relating to my programme of study is AI. AI as always been an interesting topic to me and with its growing influence on modern society. I strive to learn more and how it will make an impact in the future.

Q1

Aim

The aim is to develop a questionnaire builder app that explores the multifaceted impact of Artificial intelligence (AI) on modern society and individuals, enabling users to gather data-driven insights for academic, professional or policy making purposes.

Introduction to project

Artificial intelligence (AI) has become a transformative force in society, which is influencing everything from healthcare and education to employment and personal privacy. As AI technologies continue to evolve, understanding their societal and individual implications is critical. A questionnaire builder app focused on this theme can empower research, educators and organizations to design targeted surveys that capture public perceptions, experiences and concerns about AI.

Objectives and goals

Promote public awareness and engagement by simplifying the process of creating and distributing serveys, the app encourages broader public participation in discussions about AI's societal role. This can help bridge the gap between technological development and public understanding.

Facilitate custom survey creation, the app will allow users to build tailored questionnaires with AI generated questions suggestions based on specific themes such as AI in healthcare, education employment or ethics. This ensures relevance and comprehensiveness in data collection.

Enable data driven research The app will support exportable analytics and visualizations, allowing users to analyse trends in public opion or behavioural responses to AI. This is particularly valuable for academic studies, policy development and market research.

Highlight ethical and social implications, the app will include pre built templates addressing key concerns such as algorithmic bias, surveillance and job automation.

These templates will help users explore how AI affects individual rights, mental health and social equity.

Support multilingual and inclusive design, to ensure accessibility, the app will support multiple languages and include questions formats, enabling divers demographic participation and reducing cultural bias in data collection.

As AI continues to reshape the fabric of society, tools that facilitate understanding and dialogue are essential. A questionnaire builder app focused on AI's societal impact can serve as a catalyst for information decision making, inclusive research and ethical innovation.

Q2

An appropriate research philosophy for a project I found which explores how AI impacts society and individuals is pragmatism. Pragmatism emphasizes practical outcomes and real world applications, aligning well with the apps goal of generating actionable insights through user driven data collection.

Pragmatism allows researchers to blend both positivist and interpretivist approaches. For instance the app can support quantitative surveys to measure public attitudes towards AI (positivist) while also enabling open ended questions to explore personal experiences and ethical concerns (interpretivist). This flexibility is crucial when studying a complex, evolving phenomenon like AI, which intersects with technology, ethics, psychology and policy.

It also supports the use of mixed methods which encourages the integration of statistical analysis with qualitative interpretation. This aligns with the apps design to support diverse question types and analytics, enabling users to gather the appropriate information from varied data sources.

By actually focusing on what works to address the research problem, pragmatism ensures the app remains user centric and adaptable to different context academic, corporate or civic [6].

Q3

By researching information in various methods and gathering information from unit 1 Topic 3. I have identified the relevant research tools related to my chosen project. By using robust academic search tools and databases. These resources gave me a more in depth knowledge which is essential when it comes to ensuring access to high quality peer reviewed literature across disciplines such as computer science, ethics, psychology and sociology. Search tools and databases such as:

Search tools and databases

IEEE Xplore is a leading database engineering technology research tool, IEEE Xplore provides access to journals and conference proceedings on AI development, applications and ethical implications. It is ideal for sourcing technical and applied studies [7].

ACM Digital Library is another database which focuses on computing and human computer interaction, offering insights into AI's societal integration and user experience design critical for questionnaire app development [8].

Scopus is a multidisciplinary database that indexes peer reviewed literature across science, technology and social science. Scopus is valuable for citation tracking and identifying influential research trends [9].

Google Scholar is one of the main tools I use which is a broad academic search engine useful for initial literature scans and accessing grey literature and preprints.

Web of Science is another tool I found which offers comprehensive coverage of high impact journals and supports advanced search filters and citation analysis [10].

Search Strategies

Boolean Operators is a useful search strategy which uses a combinations like "AI AND society," "artificial intelligence OR machine learning AND ethics," or "AI impact AND individuals."

Keyword Variations include synonyms and related terms such as "automation." "algorithmic bias," "digital ethics," and "human AI interaction."

Filters apply filters for publication data (example, 2018-2025), document type (example, journal articles, conference papers), and subject area such as (example, computer science, psychology).

Citation Chaining lastly is where you can review references and citations of key papers to discover foundational and emerging studies.

These tools and strategies ensure a comprehensive, targeted literature review that supports the development of a research informed questionnaire builder app.

Task 3

Research and strategies

Q1

To ensure my idea produces trustworthy insights and strategies it must address validity, reliability, generalisability and ethics.

By developing my idea which explore AI's societal impact relating to my project idea. This will require rigorous methodological safegards as validity can be enhanced by using established scales that consults with subject matter experts and involves conduction pilot tests to confirm that questions measure intended constructs. [scientifica.com]

Reliability should also be strengthened through consistent wording, standardized administration and statistical checks such as Cronbach's alpha to assess internal consistency [11].

To improve generalisability, diverse sampling strategies must be employed ensuring representation across demographics, professions and cultural contexts thereby allowing finding to be applied beyond the immediate study group [12].

Ethical considerations are paramount. Transparency in data collection, informed consent and clear communication of study aims safeguard participants autonomy [13].

Privacy protections including anonymization and secure data storage, mitigate risks of misuse. Researchers should also adopt ethical framework such as consequential relational and deontological perspectives to balance societal benefits with individual rights [14].

Finally when it comes to accountability mechanisms such as independent review boards to ensure compliance with ethical standards and foster public trust. By integrating these strategies my app can generate robust credible and ethically sound insights into AI's multifaceted impact on individuals and society.

Q2

The research methods I chose and researched for my project is a mixed method approach combining surveys, interviews Quantitative surveys

and pilot testing which I found most suitable for developing a questionnaire builder app an AI's societal impact. A pilot survey can validate clarity, relevance and usability before scaling.

Research Strategies and Data Collection Methods

Quantitative surveys which is a structured questionnaire that allow large scale data collection on perception of AI in areas like employment, ethics and privacy [15].

Qualitative interviews/ focus groups that will help create perspectives and lived experience of individuals affected by AI [16].

Algorithmic impact assessments participatory methods that foreground community needs and highlight unintended consequences of AI adaptation [16].

Systematic literature review provides a foundation by mapping existing research on AI's social, cultural and economic dimensions [15].

Pilot Data Collection Design and methods

Sample group, 20-30 participants from diverse backgrounds such as students, professionals and policymakers.

Method will be to deploy a short questionnaire of 10-12 questions covering themes such as trust in AI, perceived risks and benefits.

Feedback mechanism will include open ended questions at the end to gather user impressions of clarity, relevance and missing area.

Evaluation analyse pilot responses for reliability (consistency of answers) and validity (alignment with intended constructs).

Feedback and refinement

Pilot participations may suggest simplifying technical terms, adding context specific examples or balancing questions on both positive and negative impacts. This feedback ensure the final questionnaire builder app is user friendly, academically rigours and policy relevant.

Q3

Quantitative and Qualitative Analysis

Quantitative analysis mainly focuses of on numerical data and statistical testing while qualitative analysis emphasizes meanings, experiences and patterns in non numerical data. Together they provide complementary insights into complex phenomena.

Types of Quantitative Analysis

Descriptive statistics that summarizes data using measures such as mean, median and standard deviation.

Inferential statistics uses hypothesis testing, regression and ANOVA to draw conclusions about populations from samples.

Correlation and regression analysis examines relationships between variables and predicts outcomes.

Experimental analysis controlled experiments test casual effects by manipulating independent variables.

Types of Qualitative Analysis

Thematic analysis identified recurring themes and patterns in textual or interview data.

Content analysis systematically categorizes words, phrases or images to interpret meaning.

Narrative analysis explores personal stories to understand lived experiences and social contexts.

Grounded theory builds theory inductively from data through coding and constant comparison.

Ethnographic analysis immerses in cultural or social settings to interpret behaviour and practices.

Quantitative methods provide objective, measurable insights while quantitative approaches capture subjective, contextual depth. Using both in a mixed methods design strengthens validity and offers holistic understanding of research questions.

Conclusion

In conclusion the proposed questionnaire builder app offers a dynamic tool to investigate the diverse impacts of Artificial intelligence on individuals and society. Through this assignment I was able to gather the relevant research material in order to integrate them into my final project proposal.

Reference

[1] A. Hartup, “Live Science,” 2004. [Online]. Available: https://www.livescience.com/.

[2] H. Kılıç, “interestingengineering,” 2025. [Online]. Available: https://interestingengineering.com/lists/35-inventions-that-changed-the-world.

[3] “microchipsource,” 2025. [Online]. Available: https://microchipsource.com/tech-history-key-innovations-that-shaped-the-modern-world/.

[4] M. Tuhin, “Sciencenewstoday,” 2024. [Online]. Available: https://www.sciencenewstoday.org/.

[5] C. Duffey, uperhuman Innovation: Transforming Business with Artificial Intelligence, London, 2019.

[6] M. L. P. &. T. A. Saunders, Research Methods for Business Students (8th ed.). Pearson Education.], 2019.

[7] J. C. S. P. Angela Sara Cacciapuoti, “ieeexplore,” 2025. [Online]. Available: https://ieeexplore.ieee.org/Xplore/home.jsp.

[8] “dl.acm,” 2025. [Online]. Available: https://dl.acm.org/browse/.

[9] “scopus,” 2025. [Online]. Available: https://www.scopus.com/.

[10] 2025. [Online]. Available: https://scholar.google.com.

[11] “scientifica,” 1997. [Online]. Available: https://www.scientifica.uk.com/.

[12] S. Shantikumar, “healthknowledge,” 2018. [Online]. Available: https://www.healthknowledge.org.uk/content/validity-reliability-and-generalisability.

[13] “gov.uk/data-ethics-guidance/ethical-considerations-associated-with-qualitative-research-methods,” 2025. [Online]. Available: https://www.gov.uk/data-ethics-guidance/ethical-considerations-associated-with-qualitative-research-methods.

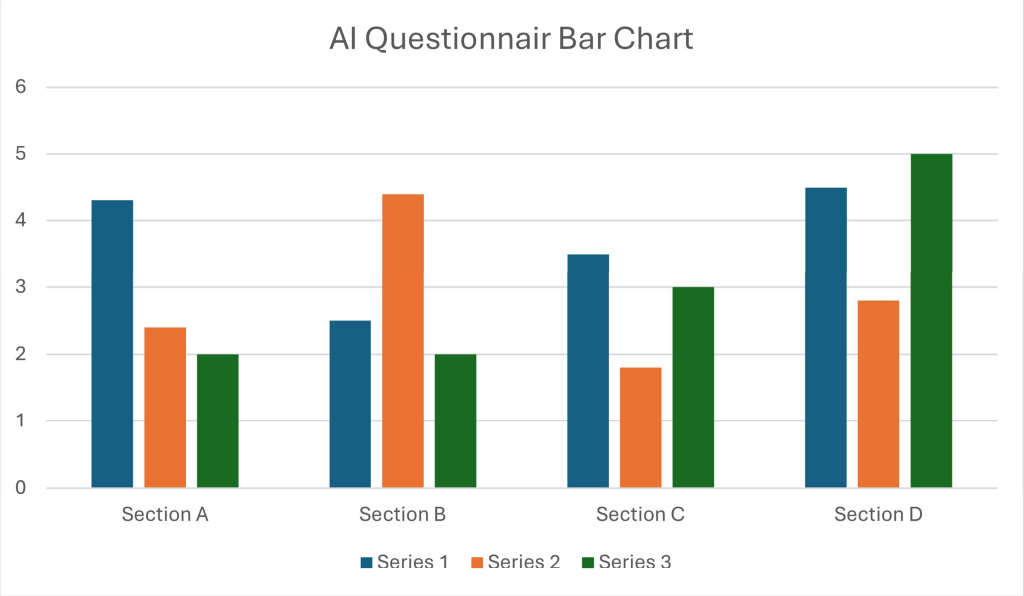
[14] N. Yang, Evaluation and Ethical Considerations, 2020.

[15] H. A. SN Malja, Artificial intelligence and society: mapping the research through a systematic review, 2025.

[16] R. L. B. F. K. Frederic Gerdon, Social impacts of algorithmic decision-making: A research agenda for the social sciences, 2022.

Appendices

Section A – Trust AI	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
On a scale of 1–5, how much do you trust AI systems to make fair decisions?					
Do you believe AI technologies are adequately regulated by governments?					
How confident are you that AI systems protect your personal data?					
Section B – Perceived Risks	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
What concerns you most about AI adoption?					
How likely do you think AI could be misused for harmful purposes					
In your opinion, which sector is most vulnerable to AI risks?					
Section C – Perceived Benefits					
How beneficial do you think AI is for improving daily life?					
Which area do you believe AI contributes most positively to?					
Have you personally experienced positive outcomes from using AI tools?					
SectionD- Feedback					
What additional topics should be included in future AI questionnaires?					


AI Questionnair Bar Chart
6
5
4
3
2
1
0
Section A
Section B
Section C
Section D
Series 1
Series 2
Series 3