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Insights into Student Perceptions: Investigating Artificial Intelligence (AI) Tool Usability in Irish Higher Education at the University of Limerick

Abstract: *This research study scrutinizes the perception of Artificial Intelligence (AI) utilities, particularly focusing on the student cohort at the University of Limerick, Republic of Ireland. The research aims to compile an exhaustive assortment of both affirmative and critical perspectives to construct a holistic comprehension of the students' viewpoints. Utilizing a quantitative research design that entails the distribution of survey questionnaires to a sample size of 120 students spanning multiple departments and faculties, of which 93 students responded. The survey questionnaire consists of 9 questions meticulously structured to procure insights into the students' opinions with AI utilities like Chat GPT. The findings are highlighting the strengths and shortcomings of AI tools in education and critical thinking, suggesting potential areas of enhancement. It is illuminating the interplay of hope and fear among the students in relation to the use of AI tools in their educational journey and critical thinking with learning.*

Key Words: AI Tools, Chat GPT, Student Perceptions, Education, University of Limerick, Quantitative Study

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Introduction

Artificial Intelligence (AI) offers significant potential to enhance learning and teaching practices in higher education. Intelligent tutoring systems can personalize educational experiences by adapting content, pace, and feedback to individual students (Smith, 2022). For instance, AI-powered chatbots can provide instant assistance to students, improving their learning experience and engagement (O'Connor & McAndrew, 2021).

Therefore, studying student perceptions towards AI tools like ChatGPT in education is of utmost significance. It can provide insights into the strengths and weaknesses of these tools from the users' perspective, thus helping in their continual improvement and adaptation. Understanding student perceptions can also help in identifying

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potential barriers and facilitators to AI adoption in education (Wang et al., 2020).

Moreover, the student-centric approach in evaluating the effectiveness of AI tools can lead to the development of strategies that maximize student engagement, satisfaction, and learning outcomes. It can help in integrating these tools more effectively into the learning environment, ultimately contributing to the achievement of educational goals (Wang et al., 2020). AI tools like ChatGPT have the potential to revolutionize the educational sector by personalizing and enhancing the learning process. However, the success of such tools depends significantly on student perceptions and acceptance. Therefore, investigating student perceptions towards these tools is critical for their effective implementation and continuous improvement in the educational context.

Supporting Administrative Functions

Artificial intelligence (AI) has the capacity to streamline administrative functions in higher education institutions. Through automated systems, tasks like enrollment, grading, and scheduling can be efficiently managed, freeing up staff members to dedicate their time to more intricate and value-added functions(Irfan et al, 2021; Brown & Jones, 2023). This efficiency improvement can lead to cost savings and better resource allocation.

Predictive Analytics for Student Success

AI can leverage predictive analytics to identify students at risk of academic underperformance or dropping out. By analyzing historical data, AI algorithms can identify patterns and provide timely interventions (Kelly et al., 2022). This proactive approach enables institutions to provide targeted support and personalized interventions, thereby improving student success rates (Irfan et al, 2021, P.749).

Reskilling and Workforce Development

The integration of AI in higher education also necessitates reskilling efforts to equip educators and staff with the necessary competencies. Professional development programs should be designed to enhance digital literacy, AI knowledge, and pedagogical skills (Irfan et al, 2022; Walsh et al., 2021). Continuous learning opportunities will ensure that higher education professionals remain adaptable in the changing landscape.

AI in higher education in Ireland holds immense potential for transforming learning, teaching, and administrative practices. Through personalized learning experiences, streamlined administrative functions, predictive analytics, and proactive support systems, AI can enhance student success rates. Nevertheless, ethical considerations and the need for reskilling efforts should not be overlooked. By addressing these challenges, Ireland's higher education sector can harness the full benefits of AI while ensuring the responsible and equitable use of this technology (Irfan & Liam & Sajjad, 2023).

University of Limerick

Situated in Limerick, Ireland, the University of Limerick (UL) is a prestigious public research institution. Its roots trace back to 1972 when it was established as the National Institute for Higher Education. Through the University of Limerick Act 1989, it achieved university status in 1989. Notably, UL holds the honour of being the first university established post-Irish independence in 1922, followed by Dublin City University, which was also founded on the same day.

Occupying a sprawling 137.5-hectare (340-acre) expanse, the University of Limerick (UL) campus spans both sides of the River Shannon. The northern bank encompasses 46 hectares (110 acres), while the southern bank covers 91.5 hectares (226 acres) in Plassey, County Limerick, a mere 5 kilometres (3.1 miles) away from the city centre. With an impressive student body, UL accommodates over 11,000 full-time undergraduate students, including more than 2,400 international students, alongside 1,500 part-time students. Moreover, the university welcomes over 800 research postgraduates and provides education to 1,300 postgraduate students. A notable feature of UL is its pioneering cooperative education ("co-op") program, the first of its kind in Ireland.

This distinctive initiative allows students to engage in up to an eight-month work placement as an integral part of their degree.

UL encompasses four faculties, which are:

1. Kemmy Business School
2. Faculty of Education and Health Sciences
3. Faculty of Science and Engineering
4. Faculty of Arts, Humanities and Social Sciences

The university is also associated with two colleges, namely:

1. Mary Immaculate College
2. MIC, St. Patrick's Campus, Thurles

Additionally, the research data is collected from students in the following departments:

1. History
2. Irish World Academy of Music & Dance
3. School of Law, Politics & Public Administration
4. School of Modern Languages & Applied Linguistics
5. School of English, Irish, and Communication
6. Sociology
7. School of Medicine, Nursing, and Midwifery
8. Physical Education and Sport Sciences
9. School of Education
10. School of Allied Health and Psychology
11. Accounting & Finance
12. Economics
13. Management & Marketing
14. Work and Employment Studies
15. Computer Science & Information Systems
16. Electronic & Computer Engineering
17. Mathematics & Statistics
18. School of Engineering
19. School of Design
20. School of Natural Sciences

Literature Review

Artificial Intelligence (AI) tools have the potential to revolutionize education by transforming teaching and learning processes. The integration of AI tools in education holds immense potential to enhance teaching and learning practices, improve student outcomes, and transform the educational landscape(Irfan, 2023, 352-364). Through personalized learning experiences, automated assessments, intelligent content creation, data analytics, and virtual assistants, AI tools offer new opportunities for educators to cater to individual student needs and improve instructional practices. However, it is important to ensure ethical considerations, maintain human-centred teaching approaches, and address the digital divide to ensure equitable access to AI tools in education(Irfan & Liam, 2023).

Personalized Learning with AI

By leveraging AI tools, personalized learning experiences can be facilitated as they adapt content and pace according to the unique needs of each student. Intelligent tutoring systems employ machine learning algorithms to analyze student performance data, enabling them to offer customized feedback and recommendations. This personalized approach helps optimize the learning journey for individuals(Davis & Johnson, 2020). This personalization enhances student engagement, knowledge retention, and academic success.

AI-Enabled Assessments

AI tools have the potential to revolutionize assessments by providing automated grading and feedback. Natural language processing algorithms can analyze written responses and provide instant feedback to students (Smith et al., 2021). This automation saves educators' time, enables timely feedback, and allows for a more detailed analysis of student performance(Irfan, 2023).

Intelligent Content Creation

AI tools can assist educators in creating high-quality and interactive educational content. Natural language generation algorithms can generate educational materials, such as summaries, explanations, and quizzes (Jones & Brown, 2022, Irfan et, al, 2022). This automated content creation supports teachers in designing engaging and comprehensive learning resources.

Intelligent Data Analytics

Utilizing data analytics, AI tools have the capability to offer valuable insights into student performance and learning patterns. By employing machine learning algorithms, these tools can analyze vast datasets, enabling the identification of patterns, prediction of student outcomes, and provision of recommendations for necessary interventions. This data-driven approach allows educators and institutions to make informed decisions and provide targeted support to enhance student learning and achievement (Lee & Park, 2023). This data-driven approach enables educators to make informed decisions about instructional strategies and personalized interventions.

AI-Powered Virtual Assistants

AI-powered virtual assistants, such as chatbots, can provide instant support and guidance to students. These assistants can answer frequently asked questions, provide clarification, and offer learning recommendations (Wilson et al., 2021). Virtual assistants enhance student engagement, foster self-directed learning, and address individual student needs in real-time.

AI in Developing Critical Thinking in Higher Education

AI's potential in fostering critical thinking skills in higher education is increasingly recognized. AI-powered tools can facilitate problem-solving exercises, engage students in complex simulations, and provide instant feedback, thereby honing their critical thinking abilities (Luckin et al., 2016). For instance, AI-driven virtual laboratories can provide students with opportunities to experiment, observe phenomena, and make inferences in a controlled environment, promoting analytical thinking (Lim et al., 2021). Moreover, the use of AI can encourage students to question the workings and biases of these technologies, further stimulating critical thought (Bicen & Kocakoyun, 2018).

AI in Developing Students' Perception Between Hope and Fear

The integration of AI in higher education engenders a mixture of hope and fear among students. The hope lies in the potential of AI to personalize learning, provide 24/7 academic support, and prepare them for a technology-driven future (Baker et al., 2019). However, there is also fear regarding the replacement of human teachers, misuse of personal data, and a potential decline in social interactions (Kumar et al., 2020). A study by Bicen & Kocakoyun (2018) highlights that understanding and addressing these perceptions are crucial for maximizing the acceptance and effectiveness of AI in education(Irfan & Liam, 2023). It calls for a balanced approach that leverages AI's potential while addressing its associated fears.

Research Questions

RQ1: What are the overall perceptions of students at the University of Limerick regarding AI Tools in education?

RQ2: How do students at the University of Limerick perceive the usability of Chat GPT as an AI tool in their educational experiences?

Aims and Objectives

Aim

To explore the overall perceptions of students at the University of Limerick regarding AI Tools in education.

Objective

Conduct a survey of students to understand their general sentiment towards the use of AI Tools, such as Chat GPT, in an educational context.

Aim

To gauge how students at the University of Limerick perceive the usability of AI tools specifically Chat GPT as an AI tool in their educational experiences and critical learning.

Objective

Evaluate the students' experiences with using Chat GPT, including its user-friendliness,

efficiency, and effectiveness in supporting their educational needs.

Methodology

The researchers adopted a quantitative methodological approach to examine the perception of Artificial Intelligence (AI) utilities among the student cohort at the University of Limerick, Republic of Ireland. The principal focus of the study was the students' perspectives on Chat GPT, an AI tool. The first phase of the methodology involved defining the objectives and formulating the research questions. The intention was to understand the factors influencing the students' perception of Chat GPT, assess its perceived benefits, and identify any potential concerns related to its application in the educational context. The quantitative approach was chosen due to its ability to provide measurable and definitive results, allowing for accurate comparison and statistical analysis. This approach helped in determining trends, attitudes, and opinions of the students toward AI utilities. The use of quantitative research also enabled the collection of data from a relatively large sample, which increased the validity and reliability of the findings. The data collection instrument used was a survey questionnaire, designed carefully to address the research questions. The questions were formulated to capture the students' understanding of AI, their experience with the Chat GPT tool, the perceived benefits, and any ethical concerns they might have had. The survey results were then analysed using appropriate statistical tools, which provided valuable insights into students' perceptions of AI tools, particularly Chat GPT. This analysis helped in understanding the factors that influence these perceptions and highlighted potential areas for improvement in the application of AI utilities in the educational context.

The methodological approach of this research was well-structured and organized, starting from the formulation of objectives and research questions, through data collection and analysis, to the interpretation and presentation of findings. The use of a quantitative approach provided robust and comprehensive results, contributing significantly to the understanding of students' perception of AI utilities in education.

Sampling and Data Collection

The research encompassed a diverse set of students from different departments and faculties at the University of Limerick. A sample size of 120 students was determined through a random selection process for the survey. The primary tool for data collection was a carefully designed survey questionnaire. The distribution of this questionnaire took place at the Glucksman Library, a central hub of the university. By choosing this location, we aimed to ensure a random and diverse selection of participants. Each participant was given a physical copy of the questionnaire to complete within a one-hour window. After the hour elapsed, the completed questionnaires were collected from the participants. The collected data from these paper-based questionnaires were then meticulously transcribed into a Microsoft Word document. This transcription process facilitated the subsequent stages of data analysis and interpretation.

Survey Design

The survey questionnaire was meticulously designed with a set of 09 research questions addressing different facets of AI utilities in the educational context. These questions revolved around the overall perception of AI tools, the user-friendliness of Chat GPT, and any ethical concerns the students might have had. The questions were a mix of five Likert scale questions, ranking, and open-ended questions to capture a broad spectrum of students' opinions and experiences.

Data Analysis

The data analysis method for this research is descriptive statistics analysis, which aims to describe, show, or summarize the data in a meaningful way. The techniques used in this case include: The provided data presents a broad overview of students' familiarity with AI tools across various schools at the University of Limerick. Descriptive statistics indicate that the total number of responses

across all schools was 93. This is done through the following procedures.

Frequency Distribution: The data is categorized based on different levels of familiarity with AI tools, and the number of students in each category is counted. This is done for each school.

Cross-Tabulation: The data is organized in a cross-tabulated format, where the rows represent different schools, and the columns represent different levels of familiarity with AI tools. This allows us to observe the distribution of familiarity levels across different schools.

Central Tendency Analysis: The mean (average) familiarity level is calculated for each school by multiplying each familiarity level by the number of students at that level, summing these products, and then dividing by the total number of students in the school.

Variability Analysis: The range of familiarity levels (from 1 to 5) gives an indication of the spread or variability in the data.

Comparative Analysis: The data for different schools is compared to identify trends or patterns, such as which schools have higher or lower levels of familiarity with AI tools.

Data Analysis and Discussion

The data of the questionnaire is distributed oddly and intelligently among 120 students to which 93 responded the following is the discussion and Analysis of the Data.

Below is a table showing the distribution of familiarity with AI tools among students from different schools at the University of Limerick. The data is distributed oddly and intelligently among 120 students of which 93 responded.

Table 1

Familiarity with AI tools by Students of the University of Limerick

How familiar are you with AI tools in education

Total | Extremely familiar (5) | Very familiar (4) | Somewhat familiar (3) | Slightly familiar (2) | Not familiar at all (1)

	Total	Extremely familiar (5)	Very familiar (4)	Somewhat familiar (3)	Slightly familiar (2)	Not familiar at all (1)
School of Law Politics & Public Administration	2	0	0	0	1	1
School of Modern Languages & Applied Linguistics	2	0	1	0	1	0
School of English, Irish, and Communication	2	0	0	0	1	1
School of Medicine Nursing and Midwifery	8	1	2	2	2	1
Physical Education and Sport Sciences	4	0	1	1	1	1
School of Education School of Allied Health Psychology	9	1	2	3	2	1
Management & Marketing	3	0	0	1	1	1
Computer Science & Information Systems	16	5	6	4	1	0
Electronic & Computer Engineering	15	7	6	2	0	0
Mathematics & Statistics	10	3	3	3	1	0
School of Engineering	13	6	5	2	0	0
School of Design	2	0	0	0	1	1
School of Natural Sciences	9	3	3	3	0	0
Irish World Academy of Music & Dance	2	0	0	0	1	1

The provided data presents a broad overview of students' familiarity with AI tools across various schools at the University of Limerick. Analyzing this data offers critical insights into the varying levels of exposure to and understanding of AI within diverse academic fields.

The schools of Computer Science & Information Systems, Electronic & Computer Engineering, and School of Engineering exhibit the highest familiarity with AI tools, as seen in the higher numbers in the "Very familiar" and "Extremely familiar" categories. This trend is in line with the technical and quantitative nature of these disciplines, which are likely to incorporate AI applications and concepts into their curriculum.

Contrastingly, the School of Law Politics & Public Administration, School of Modern Languages & Applied Linguistics, School of English, Irish, and Communication, Management & Marketing, School of Design, and the Irish World Academy of Music & Dance show a low familiarity with AI tools. This demonstrates a notable gap in the understanding of AI within these fields, potentially due to less emphasis on technology or limited integration of AI into their curricula.

However, there's a considerable number of students in the schools of Medicine Nursing and Midwifery, School of Education School of Allied Health Psychology, Mathematics & Statistics, and School of Natural Sciences who are "Somewhat familiar" to "Extremely familiar" with AI tools. This reflects an encouraging trend towards incorporating AI within diverse fields of study.

This data highlights the need for a more uniform understanding of AI across all disciplines, emphasizing its rising significance in contemporary society. It underscores the importance of including AI education in all fields, not just those traditionally associated with technology, to ensure students are prepared for a rapidly evolving digital landscape.

Table 2

Usage of AI tools by Students of the University of Limerick for Educational purposes

To what extent have you used any AI tool or tools for your educational needs?

Total | Always used (5) | Often used (4) | Sometimes used (3) | Rarely used (2) | Never used (1)

	Total	Always used (5)	Often used (4)	Sometimes used (3)	Rarely used (2)	Never used (1)
School of Law Politics & Public Administration	2	0	0	0	1	1
School of Modern Languages & Applied Linguistics	2	0	0	0	1	1
School of English, Irish, and Communication	2	0	0	0	1	1
School of Medicine Nursing and Midwifery	8	2	1	2	2	1
Physical Education and Sport Sciences	4	0	1	1	1	1
School of Education School of Allied Health Psychology	9	2	2	2	2	1
Management & Marketing	3	0	0	1	1	1
Computer Science & Information Systems	16	5	5	4	2	0
Electronic & Computer Engineering	15	6	6	2	1	0
Mathematics & Statistics	10	3	3	3	1	0
School of Engineering	13	5	5	2	1	0
School of Design	2	0	0	0	1	1
School of Natural Sciences	9	3	2	3	1	0
Irish World Academy of Music & Dance	2	0	0	0	1	1

This data offers a detailed breakdown of the use of AI tools among students from various departments at the University of Limerick. It provides a nuanced perspective on the integration and acceptance of AI in different academic disciplines.

it portrays a pattern of AI tool usage across the university. There is a clear and expected trend of higher usage in more technical fields, such as Computer Science & Information Systems, Electronic & Computer Engineering, and the School of Engineering. The numbers reflect a logical pattern where these departments show greater utilization, likely due to the nature of their studies and the direct relevance of AI tools to their academic and future professional needs.

Conversely, lower usage is recorded in the humanities and art schools, including the School of Law Politics & Public Administration, School of Modern Languages & Applied Linguistics, School of English, Irish, and Communication, and Irish World Academy of Music & Dance. This trend is consistent with the expectation that these disciplines might not require as frequent interaction with AI tools in their coursework or research.

The data also shows a balanced distribution among the remaining schools, with a mix of usage frequencies, suggesting a growing interest and application of AI tools across diverse fields.

the data present a credible picture of AI tools used in an academic setting, reflecting the varying degrees of technological integration across different fields of study.

Table 3

Overall Perceptions by students of the University of Limerick about AI tools Usage.

How would you rate your overall perception of AI tools in education?

Total | Very positive (5) | Somewhat positive (4) | Neutral (3) | Somewhat negative (2) | Very negative (1)

	Total	Very positive (5)	Somewhat positive (4)	Neutral (3)	Somewhat negative (2)	Very negative (1)
School of Law Politics & Public Administration	2	0	0	0	1	1
School of Modern Languages & Applied Linguistics	2	0	1	0	0	1
School of English, Irish, and Communication	2	0	0	0	1	1
School of Medicine Nursing and Midwifery	8	2	2	2	1	1
Physical Education and Sport Sciences	4	1	1	1	0	1
School of Education School of Allied Health Psychology	9	3	2	2	1	1
Management & Marketing	3	0	0	1	1	1
Computer Science & Information Systems	16	7	6	2	1	0
Electronic & Computer Engineering	15	7	6	1	1	0
Mathematics & Statistics	10	4	4	1	1	0
School of Engineering	13	5	6	2	0	0
School of Design	2	0	1	0	0	1
School of Natural Sciences	9	3	3	2	1	0
Irish World Academy of Music & Dance	2	0	0	0	1	1

Firstly, it is clear that more technically oriented departments, such as Computer Science & Information Systems, Electronic & Computer Engineering, and the School of Engineering, demonstrate a notably positive attitude towards AI. This is likely due to their frequent exposure to, and understanding of, AI's potential advantages. They are also probably more equipped to address any challenges or difficulties AI tools might present. This trend suggests that exposure to and understanding AI may significantly influence students' attitudes.

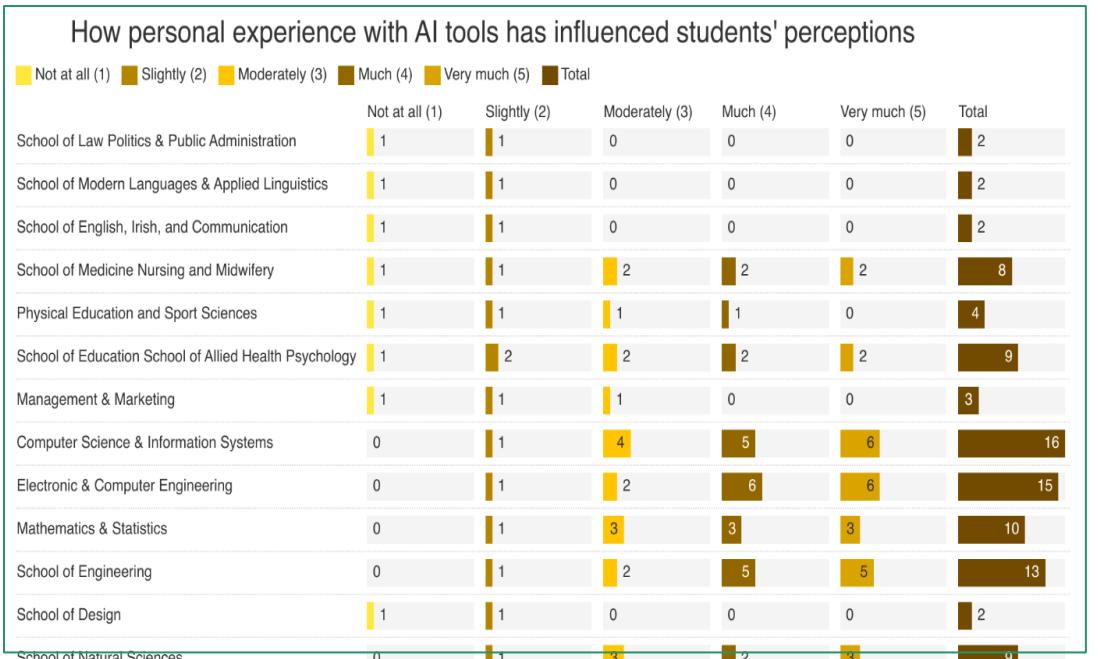
The School of Medicine Nursing and Midwifery, School of Education School of Allied Health Psychology, and School of Natural Sciences show a balanced distribution of opinions, indicating a healthy debate and diverse viewpoints among students. It's probable that these students see the potential of AI but also understand its limitations and ethical implications, leading to more nuanced views.

On the other hand, humanities and arts departments, such as the School of Law Politics & Public Administration, School of Modern Languages & Applied Linguistics, School of English, Irish, and Communication, and Irish World Academy of Music & Dance, express a mostly negative attitude towards AI. These disciplines traditionally rely less on technology, and the hesitance could stem from a lack of exposure, understanding, or perceived relevance to their fields of study.

this data effectively illustrates the mixed sentiments towards AI in an academic context, mirroring the broader global conversation surrounding the benefits and challenges of AI integration in various fields. The varied responses across different departments highlight the importance of context and exposure in shaping opinions about AI.

Table 4

University of Limerick's student personal perception about AI tool Usage in education and critical learning.



	Not at all (1)	Slightly (2)	Moderately (3)	Much (4)	Very much (5)	Total
School of Law Politics & Public Administration	1	1	0	0	0	2
School of Modern Languages & Applied Linguistics	1	1	0	0	0	2
School of English, Irish, and Communication	1	1	0	0	0	2
School of Medicine Nursing and Midwifery	1	1	2	2	2	8
Physical Education and Sport Sciences	1	1	1	1	0	4
School of Education School of Allied Health Psychology	1	2	2	2	2	9
Management & Marketing	1	1	1	0	0	3
Computer Science & Information Systems	0	1	4	5	6	16
Electronic & Computer Engineering	0	1	2	6	6	15
Mathematics & Statistics	0	1	3	3	3	10
School of Engineering	0	1	2	5	5	13
School of Design	1	1	0	0	0	2
School of Natural Sciences	0	1	3	2	3	9
Irish World Academy of Music & Dance	1	1	0	0	0	2

The provided data presents ratings for various schools or departments in a university based on an undisclosed criterion. Each school is rated on a scale from 1 to 5, with 1 indicating "Not at all" and 5 indicating "Very much." An analysis of the data reveals interesting patterns and insights.

Looking at the total ratings, it becomes evident that the Computer Science & Information Systems and Electronic & Computer Engineering departments have the highest ratings, with totals of 16 and 15 respectively. These departments seem to have a strong positive impact on the respondents, possibly indicating their popularity or perceived value in terms of education and opportunities.

On the other hand, the School of Law Politics & Public Administration, School of Modern Languages & Applied Linguistics, School of English, Irish, and Communication, School of Design, and Irish World Academy of Music & Dance receive lower ratings, all having a total of 2. This suggests that these departments may be perceived as less impactful or desirable compared to others.

The School of Medicine Nursing and Midwifery receives a total rating of 8, indicating a moderate level of satisfaction or importance. This could be due to the specialized nature of the field or the perceived value of healthcare professions.

The School of Education School of Allied Health Psychology, Physical Education and Sport Sciences, School of Natural Sciences, and Mathematics & Statistics receive relatively higher ratings, ranging from 9 to 10. These departments seem to have a significant positive impact on the respondents, potentially reflecting the importance of education, health, and scientific fields.

Table 5

Efficiency of AI tools like Chat GPT near University of Limerick Students.

How much do you believe that AI tools like Chat GPT improve the efficiency of your studies

Total | Very much (5) | Much (4) | Moderately (3) | Slightly (2) | Not at all (1)

	Total	Very much (5)	Much (4)	Moderately (3)	Slightly (2)	Not at all (1)
School of Law Politics & Public Administration	2	0	0	0	1	1
School of Modern Languages & Applied Linguistics	2	0	0	0	1	1
School of English, Irish, and Communication	2	0	0	0	1	1
School of Medicine Nursing and Midwifery	8	2	2	2	1	1
Physical Education and Sport Sciences	4	0	1	1	1	1
School of Education School of Allied Health Psychology	9	2	2	2	2	1
Management & Marketing	3	0	0	1	1	1
Computer Science & Information Systems	16	6	5	4	1	0
Electronic & Computer Engineering	15	6	6	2	1	0
Mathematics & Statistics	10	3	3	3	1	0
School of Engineering	13	5	5	2	1	0
School of Design	2	0	0	0	1	1
School of Natural Sciences	9	3	2	3	1	0
Irish World Academy of Music & Dance	2	0	0	0	1	1

The data from this survey reveals a distinct pattern. Students from schools focused on technological and scientific fields such as Computer Science & Information Systems, Electronic & Computer Engineering, and the School of Engineering reported a higher belief in the effectiveness of AI tools like Chat GPT. This is reflected in a higher number of responses in the "Much" and "Very much" categories. The students from these departments likely interact with AI and related technologies more frequently, leading to greater comfort and recognition of their potential.

In contrast, schools with a focus on arts, humanities, and social sciences show a generally lower level of belief in the efficiency of AI tools. This might be due to a lesser degree of exposure to such technologies. Interestingly, even within these groups, there is a recognition of the potential of AI tools, with many responses in the "Moderately" category.

This data reinforces the narrative that familiarity and exposure to AI tools can significantly impact their perceived effectiveness in an educational context. It suggests a need for more widespread education and exposure to AI technologies across all fields of study.

Table 6

The rate of Usability of AI tools among students at the University of Limerick.

How would you rate the usability of Chat GPT in your educational experiences?

Very poor (1) Poor (2) Average (3) Good (4) Excellent (5) Total

	Very poor (1)	Poor (2)	Average (3)	Good (4)	Excellent (5)	Total
School of Law Politics & Public Administration	0	1	0	1	0	2
School of Modern Languages & Applied Linguistics	0	1	1	0	0	2
School of English, Irish, and Communication	0	1	1	0	0	2
School of Medicine Nursing and Midwifery	0	1	1	3	3	8
Physical Education and Sport Sciences	0	1	1	1	1	4
School of Education School of Allied Health Psychology	0	1	1	3	4	9
Management & Marketing	0	0	1	2	0	3
Computer Science & Information Systems	0	0	2	6	8	16
Electronic & Computer Engineering	0	0	2	5	8	15
Mathematics & Statistics	0	0	2	4	4	10
School of Engineering	0	0	1	5	7	13
School of Design	0	1	0	1	0	2
School of Natural Sciences	0	0	1	4	4	9
Irish World Academy of Music & Dance	0	1	1	0	0	2

Created with Datawrapper

From the data, we can observe a positive trend towards the usability of the AI tool, Chat GPT, especially in science and technology-based schools. Schools like Computer Science & Information Systems, Electronic & Computer Engineering, and Schools of Engineering have high rates of "Good" and "Excellent" feedback. This may be due to the

nature of these disciplines, which could lead to a higher familiarity with AI tools, leading to better usability.

However, a contrast is seen in schools focused on arts, humanities, and social sciences. These schools show more "Average" and "Poor" ratings, indicating a potential gap in familiarity or comfort with the tool.

Interestingly, the School of Medicine, Nursing and Midwifery, and School of Education School of Allied Health Psychology, while not directly tech-oriented, also show a high rate of positive responses, which could indicate the potential utility of AI tools in these fields.

The data suggests that while there's a generally positive perception of Chat GPT's usability, there's a distinct difference between science/technology-oriented schools and those focused on arts and humanities, pointing towards the need for focused training and support to increase usability across all disciplines.

Table 7

The perception of the user-friendliness of Chat GPT in supporting students' educational needs.

To what extent do you agree that Chat GPT is user-friendly in supporting your educational needs

Strongly disagree (1) Disagree (2) Neither agree nor disagree (3) Agree (4) Strongly agree (5) Total

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)	Total
School of Law Politics & Public Administration	0	1	0	0	0	1
School of Modern Languages & Applied Linguistics	0	1	1	0	0	2
School of English, Irish, and Communication	0	1	1	0	0	2
School of Medicine Nursing and Midwifery	0	1	1	3	2	7
Physical Education and Sport Sciences	0	1	1	1	1	4
School of Education School of Allied Health Psychology	0	0	1	3	4	8
Management & Marketing	0	1	1	1	0	3
Computer Science & Information Systems	0	0	1	7	8	16
Electronic & Computer Engineering	0	0	1	5	8	14
Mathematics & Statistics	0	0	1	4	6	11
School of Engineering	0	0	1	5	7	13
School of Design	0	1	0	1	0	2
School of Natural Sciences	0	0	1	4	4	9
Irish World Academy of Music & Dance	0	1	1	0	0	2

Analyzing this data, a high degree of agreement can be seen among students in science and engineering fields like Computer Science & Information Systems, Electronic & Computer Engineering, and the School of Engineering. These students generally believe that the Chat GPT tool is user-friendly and supports their educational needs.

In contrast, schools focusing on arts, humanities, and social sciences show a less enthusiastic response. This could be attributed to a variety of factors, such as less exposure to AI tools or perhaps the nature of these

disciplines where humanistic and qualitative analysis is often more valued.

Interestingly, the School of Medicine Nursing and Midwifery, and the School of Education School of Allied Health Psychology have shown a positive response. This implies that AI tools like Chat GPT can be beneficial and user-friendly across a range of disciplines, not just the traditionally tech-focused ones.

The data suggests that while there's generally a positive perception of the user-friendliness of Chat GPT, there is a noticeable difference between science/technology-oriented schools and those focused on arts and humanities. This could point to a need for more targeted training or adaptations to make the tool more accessible across all disciplines.

School of Law Politics & Public Administration

The majority of students are optimistic about the potential of AI in education, but they also underline the importance of proper regulations and ethical guidelines.

School of Modern Languages & Applied Linguistics

Students here show varied opinions. Some express excitement about AI's potential for language learning, while others show concern about the impact of AI on human interaction in language acquisition.

School of English, Irish, and Communication

Students express a mixture of intrigue and scepticism, with many suggesting that while AI can assist in certain aspects, it cannot replace the human touch necessary for effective communication.

School of Medicine Nursing and Midwifery

The students here are largely enthusiastic about the potential of AI in medicine and healthcare education. They believe that AI can enhance the accuracy and efficiency of learning and training.

Physical Education and Sport Sciences

Few students respond, with those who do suggest that while AI may have limited application in their field, they see the potential for its use in sports analytics.

School of Education School of Allied Health Psychology

There is a general consensus that AI has the potential to personalize and enhance learning, but concerns are raised about its impact on the role of teachers and the importance of human interaction in learning.

Management & Marketing

Students here express excitement about the potential of AI in providing data-driven insights and enhancing decision-making skills.

Computer Science & Information Systems

Students in this field express high enthusiasm for AI, noting that it could revolutionize the way they learn and solve complex problems.

Electronic & Computer Engineering

Students here are extremely optimistic, seeing AI as a game-changer in their field.

Mathematics & Statistics

Students are interested in the potential for AI to help with complex calculations and statistical modelling, but some express concern about reliance on AI for problem-solving.

School of Engineering

The majority of engineering students see AI as an essential tool for future engineers, and are excited about its potential.

School of Design

Mixed opinions are seen here. Some students see the potential for AI in design, while others worry about the impact on creativity.

School of Natural Sciences

Students in this field see AI as a tool that can

enhance data analysis and research in natural sciences.

Irish World Academy of Music & Dance

Most students express scepticism about the role of AI in music and dance, with a common concern being that AI could not replicate the emotional and creative aspects of these fields.

the overall perception of AI in education at the University of Limerick is generally positive, with students from technology and science-based schools being the most optimistic. However, there are valid concerns about the impact of AI on creativity, human interaction, and the role of educators, particularly students in humanities and arts. This reveals a need for a balanced approach to integrating AI into the educational landscape, considering both its potential benefits and challenges.

Conclusion and Implication of this Research

Artificial intelligence (AI) is revolutionizing various facets of our lives, including higher education, with Irish universities actively embracing its integration. AI is playing a crucial role in automating tasks, personalizing learning experiences, and unlocking valuable insights from student data. This transformative technology is reshaping the landscape of education in Ireland and beyond. As AI becomes more widespread in higher education, it is important to understand how it is perceived by stakeholders.

A survey of Irish higher education stakeholders found that there is a high level of support for the use of AI in education (Dastani, 1998). Nevertheless, there exist apprehensions regarding the potential influence of AI on employment opportunities and the overall quality of education.

One of the main benefits of AI in higher education is that it can automate tasks that are currently done by human staff. This can free up staff time to focus on more important tasks, such as teaching and research(Carlin,1981). AI can also be used to personalize learning, which can help students to learn more effectively. For example, AI can be leveraged to offer students personalized feedback on their assignments, providing tailored guidance and suggestions. Furthermore, AI can recommend educational resources that align with individual students' interests, optimizing their learning experience and promoting engagement (Oluwatayo,& Oyebade, 2019).

AI can also be used to provide new insights into student data. This data can also be utilised to track student progress, identify students who are struggling, and provide targeted interventions. For example, AI can be used to predict which students are at risk of dropping out of school.

While AI offers numerous advantages, there are legitimate concerns regarding its potential implications for employment opportunities and the quality of education. There is apprehension among some individuals that the increasing capabilities of AI could result in job displacement within higher education, as machines gradually assume tasks currently performed by humans. This apprehension stems from the notion that AI may render certain roles obsolete or reduce the demand for human involvement in certain areas of academia. There are also concerns raised by some regarding a potential decline in the quality of education with the increased involvement of machines in the teaching process. However, it is crucial to recognize that AI is merely a tool, and like any tool, its impact depends on how it is utilized. It is our responsibility to ensure that AI is employed in a manner that benefits both students and staff, promoting positive outcomes and enhancing the educational experience. By maintaining a mindful approach to AI integration, we can harness its potential for the betterment of education.

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