



Algorithmic Mediation and Student Creativity: Large Language Models, Academic Writing, and the Convergence of Ideas in Irish Higher Education

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Abstract

The growing use of large language models in higher education has intensified debate about their influence on student writing and creative development. Existing research has often focused on the practical value of these systems for brainstorming, drafting, and improving efficiency in academic tasks. Less attention has been given to whether regular reliance on algorithmic support affects students' confidence in generating ideas independently or contributes to greater similarity in written work. This study examines these questions through a quantitative survey of 150 undergraduate and postgraduate students from three Irish institutions: University College Cork, the University of Galway, and Maynooth University. Participants came from a range of disciplinary backgrounds, and the sample was broadly balanced by gender, comprising 78 female and 72 male students. The survey explored patterns of generative AI use, perceptions of creative self-efficacy, and student views on similarity in academic ideas and written work. The findings indicate a mixed pattern. Many respondents associated ChatGPT with faster idea generation, improved productivity, and useful support during drafting. At the same time, a notable proportion reported greater difficulty developing ideas without assistance and expressed concern that their work was becoming more similar to that of other students using the same tools. Overall, 68.7 per cent believed that their ideas had become more similar to those of other ChatGPT users, while 72.0 per cent reported that ideas they had initially regarded as original later appeared to reflect common AI-generated suggestions. These findings suggest that the educational benefits of AI-assisted writing may coexist with concerns about originality, cognitive dependence, and reduced diversity in academic expression. The study contributes to current debates on cognitive offloading, standardisation in academic writing, and creative development in AI-mediated learning environments, and points to the need for pedagogical approaches that preserve independent thinking and intellectual diversity.

Keywords: ChatGPT, Large Language Models, Creative Cognition, Intellectual Homogenisation, Higher Education Policy, Generative Artificial Intelligence, Cognitive Delegation, Irish Universities

Introduction

The increasing use of large language models in higher education has changed how many students approach academic writing and idea generation. Tools such as ChatGPT are now used for brainstorming, summarising sources, organising arguments, drafting text, and revising written work. Their rapid adoption has generated debate about whether they support student learning or weaken the development of independent thinking. Some researchers argue that generative artificial intelligence can assist students in starting difficult tasks, improving fluency, and reducing linguistic barriers, including for less confident writers and second-language users (Doshi and Hauser, 2024; Fisher et al., 2025). Others suggest that regular reliance on such systems may encourage dependence on machine-generated suggestions and narrow the range of ideas students develop for themselves (Anderson et al., 2024; Liu et al., 2024). This tension frames the present study. In educational research, creativity is commonly understood as the capacity to produce ideas or outputs that are both novel and appropriate to their context (Sternberg and Lubart, 1998; Runco and Jaeger, 2012). This definition remains useful in the context of AI-assisted writing because it directs attention beyond surface fluency and towards the processes through which students generate, evaluate, and refine ideas. Amabile's (1982) componential theory of creativity is helpful here. It distinguishes between domain-relevant knowledge, creativity-relevant processes, and task motivation. In the present context, that distinction matters because a tool may improve the fluency or structure of written work without strengthening the student's own capacity for independent ideation. In higher education, creativity is not only a property of the finished product. It is also part of intellectual development. Recent research has produced mixed findings on the relationship between generative AI and student writing. Some studies indicate that AI tools can improve drafting efficiency, support early-stage ideation, and enhance the perceived quality of written work (Mei et al., 2025; O'Toole and Horvát, 2024). Other studies suggest that these gains may be accompanied by greater similarity across outputs. AI-assisted work may appear polished when considered individually, yet show convergence in structure, framing, and conceptual direction when examined across groups of users (Padmakumar and He, 2024; Anderson et al., 2024). The issue, therefore, is not only whether AI improves immediate performance, but whether it also contributes to standardisation in academic expression. This concern is supported by emerging evidence on homogenisation. Anderson et al. (2024) found that ideas produced with large language model support clustered more closely than those generated through conventional creativity tools. Doshi and Hauser (2024) similarly reported that AI-assisted narratives were often evaluated favourably while also displaying greater similarity to one another than narratives written without AI support. These findings do not show that AI uniformly reduces creativity. They do, however, suggest that immediate gains in fluency and productivity may coexist with reduced diversity at the collective level. Within higher education, this matters because originality is not merely an individual attribute. It also contributes to the intellectual environment in which students compare perspectives, encounter difference, and develop judgement.

A related issue concerns what happens when AI support is removed. Experimental studies by Liu et al. (2024) and Zhou et al. (2025) suggest that some short-term gains associated with ChatGPT use may weaken when access to the tool is withdrawn, while patterns of similarity may remain visible. These findings are informative, but they should be interpreted carefully. Much of this work has been conducted under controlled conditions, using limited tasks and short exposure periods. Such designs are useful for identifying possible effects, but they do not fully capture how students understand and use these systems in routine university settings. This gap is important because most student engagement with generative AI occurs in everyday educational contexts shaped by assessment pressure, time limits, disciplinary expectations, and varying levels of digital confidence. The present study addresses this issue

through a quantitative survey of 150 undergraduate and postgraduate students from three Irish universities: University College Cork, the University of Galway, and Maynooth University. Participants were drawn from a range of disciplinary backgrounds, and the sample was broadly balanced by gender, comprising 78 female and 72 male students. The study examines three related areas: patterns of ChatGPT use, students' perceptions of its influence on creative thinking and creative self-efficacy, and reported signs of ideational convergence, including perceived similarity to peers and difficulty generating ideas independently. The study does not assume that ChatGPT either improves or weakens creativity in any simple or uniform way. Instead, it examines how students describe its benefits and limitations in their own academic work. By focusing on routine educational practice rather than experimental settings alone, the study extends current discussion of creativity, cognitive offloading, and standardisation into contexts that more closely reflect institutional reality. In doing so, it contributes to wider debates about how higher education should respond to generative AI, not only in relation to efficiency and academic integrity, but also in relation to intellectual development and the preservation of cognitive diversity.

Literature Review

Creativity and originality in AI-mediated academic work

Generative AI has renewed longstanding questions about how creativity should be defined and assessed in educational settings. Traditional scholarship continues to describe creativity in terms of novelty and appropriateness (Sternberg and Lubart, 1998; Runco and Jaeger, 2012). These criteria remain useful, but they become more difficult to apply when students work with systems capable of producing plausible and well-structured text on demand. Boden's (1998) distinction between psychological creativity and historical creativity is helpful in this context. A response may feel new and useful to an individual student while offering little originality in a broader disciplinary sense. This distinction is important for academic writing because a student may experience AI-generated suggestions as helpful or even inventive, while those same suggestions remain highly familiar across a population of users. In higher education, this issue is tied to broader questions of authorship, originality, and judgement. Research in university contexts has shown that generative AI is increasingly discussed not only as a productivity tool but also as a challenge to established assumptions about writing, critical thinking, and independent learning (Irfan, Murray and Ali, 2023a; Irfan et al., 2023). Student-focused work in Irish higher education also suggests an ambivalent pattern, with learners recognising both the usefulness of AI tools and the uncertainty they create around originality, self-reliance, and academic standards (Irfan, Murray and Ali, 2023b). This suggests that creativity in AI-mediated environments cannot be understood simply by examining outputs. It must also be considered in relation to how students interpret and use these tools in the process of producing academic work.

Mechanisms through which AI may shape creative thinking

Several theoretical perspectives help explain how generative AI may influence student creativity. One is cognitive offloading. External tools can reduce the mental demands associated with planning, drafting, and idea development. In some circumstances this may be beneficial, as it allows students to begin difficult tasks more easily or manage complexity more effectively. At the same time, repeated delegation of these activities may reduce active engagement in the very processes through which students develop ideas for themselves. Research on AI use in higher education has repeatedly identified this tension, showing that students often value efficiency and support while also expressing concern about dependency and reduced ownership of their work (Irfan, Murray and Ali, 2023a; Irfan, Aldulaylan and Alqahtani, 2023). A second mechanism is anchoring. When a language model provides an

initial structure, phrase, or argument, that suggestion may shape the range of options the user subsequently considers. In academic writing, this matters because the first output generated by the system can become the basis for the rest of the task. Rather than expanding the space of possible ideas, AI may narrow it by encouraging students to work within the conceptual frame already provided. Scholarship on prompting and AI literacy indirectly supports this concern by emphasising that meaningful use of AI requires active evaluation, revision, and selective adaptation rather than passive acceptance of generated content (Irfan and Murray, 2023a; Irfan and Murray, 2023b). A third mechanism is standardisation at the collective level. When many students rely on the same systems, trained on similar corpora and designed to produce highly plausible responses, their outputs may begin to converge. This possibility matters for higher education because academic writing is not assessed only in terms of correctness. It is also valued for independence, originality, and disciplinary judgement. AI therefore operates not just as an individual aid, but as a socio-technical system that may influence the broader pattern of ideas and expressions circulating within educational settings.

Empirical evidence on convergence and homogenisation

Recent empirical work has begun to examine whether AI-assisted writing produces more homogeneous outputs. Existing studies suggest a mixed pattern. On one hand, generative AI often improves fluency, coherence, and perceived quality. On the other, these gains may coincide with greater similarity across responses. Anderson et al. (2024) found that outputs generated with large language model support were more clustered than outputs produced through conventional creativity techniques. Doshi and Hauser (2024) similarly reported that AI-assisted narratives were often rated positively while also showing higher levels of similarity than narratives written without AI support. These findings support the argument that gains in efficiency and polish do not necessarily translate into broader diversity of thought. This concern is also relevant to educational research on student experience. Studies in higher education report that students frequently describe AI as useful, accessible, and time-saving, yet they also express concern about over-reliance, weakened independent thinking, and uncertainty about the boundaries of legitimate use (Irfan, Murray and Ali, 2023b; Irfan, Aldulaylan and Alqahtani, 2023). These concerns do not prove that AI reduces originality in every case. They do indicate, however, that students themselves recognise a possible tension between support and sameness. Research on AI literacy adds an important dimension to this discussion. Bacha, Ali and Irfan (2026) found uneven levels of AI literacy among journalism and mass communication faculty, while Irfan (2025) argues that students require structured guidance if AI is to support rather than replace critical judgement. These studies suggest that convergence may arise not only from the design of language models, but also from the conditions under which they are used. Where AI literacy is weak, users may be more likely to accept generic outputs uncritically. Where guidance is stronger, students may be better able to challenge, adapt, and move beyond machine-generated suggestions.

Pedagogy, institutional context, and creative development

The educational effects of generative AI depend heavily on context. Studies on AI integration in higher education consistently argue that outcomes are shaped by pedagogy, staff development, and institutional guidance rather than by the technology alone (Irfan, Murray and Ali, 2023a; Bacha, Ali and Irfan, 2026; Irfan and Murray, 2023a). This matters for creativity because AI is unlikely to have a uniform effect across all settings. In environments where educators explicitly address prompting, evaluation, authorship, and verification, AI may function as a scaffold that supports reflection and development. In less structured settings, it may encourage shortcut learning and surface-level completion. Policy research reinforces this point. Work focused on Ireland and Europe argues that AI in higher education requires governance that addresses accountability, transparency, bias, privacy, human

oversight, and disciplinary variation (Irfan, Murray and Ali, 2023c; Irfan et al., 2023; Irfan et al., 2025). These issues are relevant to creativity because institutional frameworks shape how students use AI, what forms of engagement are encouraged, and whether independent judgement remains central to academic work. The Higher Education Authority's policy framework on generative AI (2025) is also relevant in this regard because it frames AI integration in terms of academic integrity, inclusion, human oversight, AI literacy, data governance, and sustainable pedagogy. This wider policy context helps situate the present study within current Irish debates about how higher education should respond to generative AI while preserving intellectual standards.

Gaps in the literature and research questions

Despite the rapid growth of scholarship on AI in higher education, several gaps remain. First, much of the existing literature focuses on usability, ethics, policy, literacy, and general teaching and learning outcomes rather than on creativity and ideational convergence as specific research problems (Irfan, Murray and Ali, 2023a; Irfan, Murray and Ali, 2023b; Bacha, Ali and Irfan, 2026). Second, although this work provides useful evidence on student attitudes and institutional concerns, it does not fully explain whether routine use of ChatGPT contributes to perceived similarity in students' ideas or reduces confidence in independent ideation. Third, experimental studies on homogenisation have identified possible convergence effects, but they often rely on controlled tasks rather than the everyday university settings in which students normally use these tools. The present study addresses this gap by examining ChatGPT use among students at University College Cork, the University of Galway, and Maynooth University. It focuses on three interrelated areas: patterns of use, perceived effects on creative thinking and creative self-efficacy, and signs of ideational convergence reported by students themselves. In doing so, the study narrows the broader debate on generative AI to a more specific question about originality, confidence, and similarity in ordinary academic practice.

Three research questions guide the investigation:

RQ1: What are the patterns of ChatGPT usage among university students at University College Cork, the University of Galway, and Maynooth University, including frequency of use, typical applications, and perceived benefits?

RQ2: How do students perceive ChatGPT's influence on their creative thinking processes, including effects on idea generation, originality, and creative self-efficacy?

RQ3: What evidence exists for perceived homogenisation in students' ideational patterns, including observed similarity to peers' ideas and difficulty generating original concepts independently?

Methodology

Research design

This study used a cross-sectional survey design to examine how students use ChatGPT in their academic work, how they perceive its effects on creative thinking and creative self-efficacy, and whether they report signs of similarity in ideas and written outputs. A survey design was appropriate because the aim was to investigate everyday student practice across ordinary university contexts rather than behaviour under controlled experimental conditions. The study therefore focused on self-reported experiences and perceptions rather than direct measurement of creative performance.

Sample and sampling strategy

The study population comprised undergraduate and postgraduate students enrolled at three Irish universities: University College Cork, the University of Galway, and Maynooth University. A stratified quota sampling approach was used to secure variation across institution, field of study, and level of study. The final sample included 150 students, with 50 participants drawn from each university. Of the total sample, 78 identified as female and 72 as male. Participants ranged in age from 18 to 36 years, with a mean age of 22.1 years and a standard deviation of 2.9. Students were drawn from six disciplinary areas: Business and Management (n = 34), Engineering and Computing (n = 32), Social Sciences (n = 28), Humanities and Arts (n = 24), Natural Sciences (n = 18), and Health Sciences (n = 14). The sample included students at different stages of study, from first-year undergraduate to doctoral level. Participants were recruited during October and November 2025 through institutional email circulation, student society social media channels, and campus recruitment stands. A small participation incentive was offered in recognition of the time required to complete the survey.

Instrument development

Data were collected through a structured online questionnaire developed for the purposes of this study. The instrument was designed in light of existing research on student uses of generative AI, AI literacy, creative self-efficacy, and concerns relating to originality, dependency, and similarity in AI-assisted work. The item pool was informed by the literature reviewed in earlier sections and by the specific aims of the present study, which focused on perceptions of creative thinking, independent ideation, and convergence in student work. To strengthen content validity, the draft questionnaire was reviewed by four academic colleagues with expertise in educational technology, creativity research, survey design, and higher education policy. Their feedback led to revisions in wording, sequencing, and item clarity. The revised version was then pilot tested with 18 university students who were not included in the final sample. Pilot feedback was used to refine wording further and improve response clarity.

Survey structure and measures

The final questionnaire consisted of six sections. The first section gathered demographic information, including age, gender, institution, discipline, and level of study. The second examined patterns of ChatGPT use, including frequency of use, common tasks, and estimated weekly use. The third addressed perceived benefits, including support with idea generation, time saving, understanding difficult material, and confidence in beginning academic tasks. The fourth focused on creative thinking and creative self-efficacy, including perceived originality, confidence in producing ideas independently, and views on intellectual ownership. The fifth explored perceived convergence, including whether participants felt their ideas or written work were becoming more similar to those of other students using ChatGPT. The final section invited short open-ended reflections on the perceived effects of ChatGPT on participants' thinking and writing. Most attitudinal items were measured using five-point Likert scales ranging from strongly disagree to strongly agree. Frequency items used ordered response categories, and task-use questions allowed multiple selections where appropriate.

Data collection procedures

Data collection was carried out during November and December 2025 using Qualtrics. Participants accessed the questionnaire through a study link circulated during recruitment. Before beginning the survey, each participant was provided with an information sheet outlining the purpose of the study, the voluntary nature of participation, and the use of anonymised and aggregated data in reporting. Electronic consent was obtained before

participation. Steps were taken to reduce the likelihood of duplicate responses by distributing the survey through controlled access routes. Ethical approval was obtained from the relevant research ethics committees at the participating institutions.

Data analysis

Quantitative data were analysed in SPSS version 29. Descriptive statistics were used to summarise participant characteristics, patterns of ChatGPT use, and levels of agreement with survey items. Means and standard deviations were calculated for Likert-scale items where appropriate, and percentage distributions were reported to support interpretation. For selected items, response categories were collapsed into broader agreement categories in order to present the findings more clearly. Inferential analysis was exploratory. Independent-samples t-tests were used to examine gender-based differences, while one-way analysis of variance was used to compare responses across institutions and disciplinary groups. Where statistically significant disciplinary differences were identified, Tukey post hoc tests were used to examine pairwise contrasts. Responses to the open-ended items were analysed thematically to provide additional interpretive context for the survey findings. The analysis followed the stages outlined by Braun and Clarke, including familiarisation, initial coding, theme development, review, and refinement. These qualitative responses were not treated as a standalone qualitative dataset. Instead, they were used to contextualise and illuminate patterns identified in the survey results.

Methodological limitations

Several limitations should be noted. First, the cross-sectional design does not permit causal inference. The study captures reported experiences and perceptions at one point in time and cannot establish whether ChatGPT use causes changes in creativity or originality. Second, the study relies on self-reported data. Participants' perceptions of creativity, dependency, or ideational similarity may not correspond directly to observable performance. Third, although the sample includes students from three universities and a range of disciplinary fields, it was not designed to be statistically representative of the wider student population in Ireland. Fourth, responses may have been influenced by recall bias or social desirability, especially in relation to independent thinking, originality, and reliance on AI tools. The findings should therefore be interpreted as an account of student perceptions and reported practices rather than as a direct test of measurable cognitive change.

Findings

Patterns of ChatGPT use

Use of ChatGPT was widespread across the sample. Of the 150 participants, 146 reported having used ChatGPT at least once, and 134 reported having used it within the previous month. Reported frequency of academic use varied. Thirty-eight participants reported daily use, 52 reported using it several times a week, 36 reported weekly use, and 24 reported rare or no use. Because the final category combines infrequent use with non-use, it should not be interpreted as indicating non-use alone. Participants reported an average of 5.1 hours of ChatGPT use per week ($SD = 4.2$), with responses ranging from 0 to 22 hours. No statistically significant gender differences were found for usage frequency, $t(148) = 0.91$, $p = .36$, or weekly hours of use, $t(148) = 1.24$, $p = .22$. Differences across disciplinary groups were borderline, $F(5,144) = 2.31$, $p = .05$, with Engineering and Computing students reporting the highest average weekly use ($M = 6.8$ hours) and Humanities and Arts students the lowest ($M = 3.4$ hours). No statistically significant differences were observed across institutions, $F(2,147) = 1.42$, $p = .24$.

Table 1. Reported uses of ChatGPT by task type (N = 150, multiple responses allowed)

Task type	n	%
Academic uses		
Explaining concepts	118	78.7
Brainstorming ideas	114	76.0
Summarising readings	109	72.7
Drafting written assignments	104	69.3
Checking grammar and style	99	66.0
Generating research questions	88	58.7
Coding	68	45.3
Translating texts	62	41.3
Non-academic uses		
Learning personal interests	89	59.3
Planning and organisation	81	54.0
Creative projects	69	46.0
Personal writing	63	42.0
Entertainment	54	36.0

The most commonly reported uses were explaining concepts, brainstorming ideas, and summarising readings. This suggests that students used ChatGPT mainly as a support tool for understanding and beginning tasks rather than only for highly specialised functions.

Perceived benefits of ChatGPT

Participants reported strong practical benefits from ChatGPT use. The highest levels of agreement were recorded for time saving, support with idea generation, and help with understanding difficult concepts. Lower agreement was observed for the statement that ChatGPT provides original and creative ideas. This pattern suggests that students largely viewed the tool as useful and efficient, but not always as a source of originality in itself.

Table 2. Perceived benefits of ChatGPT (N = 150)

Item	Mean	SD	Agree/Strongly agree n	Agree/Strongly agree %
Using ChatGPT helps me generate more ideas than I could on my own	4.4	0.7	133	88.7
Using ChatGPT improves the quality of my academic work	4.2	0.8	122	81.3
Using ChatGPT saves me time on academic tasks	4.6	0.6	140	93.3
Using ChatGPT helps me overcome writer's block or creative blocks	4.3	0.8	126	84.0
Using ChatGPT helps me understand complex concepts more easily	4.4	0.7	132	88.0
Using ChatGPT improves my confidence in tackling challenging assignments	4.0	1.0	110	73.3
The ideas ChatGPT provides are generally original and creative	3.8	1.1	98	65.3

Item	Mean	SD	Agree/Strongly agree n	Agree/Strongly agree %
I can usually improve upon ChatGPT's suggestions to make them my own	4.1	0.9	116	77.3

A statistically significant gender difference was found for perceptions of originality. Male participants rated ChatGPT's ideas as more original on average ($M = 4.0$, $SD = 0.9$) than female participants ($M = 3.5$, $SD = 1.1$), $t(148) = 2.94$, $p < .01$. This result concerns perceived originality rather than any direct assessment of originality in student work.

Creativity, ownership, and independent thinking

Responses relating to creativity and independent thinking were more mixed than those relating to usefulness and efficiency. Just over half of participants agreed that they felt genuinely engaged in creative thinking when using ChatGPT. At the same time, notable proportions reported difficulty generating ideas without it, concern that reliance on the tool might reduce their creativity, and uncertainty about whether AI-assisted work felt fully their own.

Table 3. ChatGPT and perceived creative processes (N = 150)

Item	Mean	SD	Agree/Strongly agree n	Agree/Strongly agree %
When I use ChatGPT, I feel I am genuinely engaged in creative thinking	3.5	1.2	82	54.7
Since I started using ChatGPT regularly, I find it harder to generate ideas without it	3.9	1.1	98	65.3
I worry that relying on ChatGPT is making me less creative overall	3.7	1.2	91	60.7
When I try to be creative on my own, my ideas often resemble what ChatGPT would generate	3.6	1.1	88	58.7
I have noticed that my ideas are becoming more similar to those of my classmates who also use ChatGPT	4.0	1.0	103	68.7
Sometimes I think an idea is my own, then realise ChatGPT suggested something similar earlier	4.1	0.9	108	72.0
I feel a sense of ownership over work I produce with ChatGPT assistance	3.3	1.2	70	46.7
I am confident in my ability to be creative without using AI tools	3.5	1.1	82	54.7
Using ChatGPT has changed how I think about my own creativity	3.9	1.0	98	65.3
I would describe my relationship with ChatGPT as collaborative rather than dependent	3.6	1.1	86	57.3

These results indicate that participants often distinguished between using ChatGPT effectively and experiencing that use as fully creative or fully owned. The strongest agreement was recorded for the view that an apparently original idea might later prove similar to a previous AI suggestion, and for the perception that ideas were becoming more similar among users. By contrast, fewer than half of participants reported a strong sense of ownership over AI-assisted work.

Table 4. Gender differences in selected creativity-related perceptions

Item	Male M (SD)	Female M (SD)	t	p
I feel a sense of ownership over work I produce with ChatGPT assistance	3.5 (1.2)	3.0 (1.1)	2.54	< .05
I am confident in my ability to be creative without using AI tools	3.7 (1.1)	3.2 (1.0)	2.78	< .01
The ideas ChatGPT provides are generally original and creative	4.0 (0.9)	3.5 (1.1)	2.94	< .01

Male participants reported higher levels of perceived ownership, greater confidence in unaided creativity, and more positive evaluations of the originality of ChatGPT's ideas.

Table 5. Confidence in unaided creativity by disciplinary area

Discipline	Mean	SD
Humanities and Arts	2.9	1.1
Social Sciences	3.3	1.1
Business and Management	3.4	1.0
Natural Sciences	3.6	1.1
Health Sciences	3.7	1.0
Engineering and Computing	3.8	1.1

ANOVA: $F(5,144) = 3.64, p < .01$

Post hoc Tukey comparisons indicated statistically significant differences between Humanities and Arts and Engineering and Computing ($p < .01$), and between Humanities and Arts and Health Sciences ($p < .05$). Students in Humanities and Arts reported the lowest confidence in their ability to be creative without AI tools, while students in Engineering and Computing reported the highest.

Perceived similarity and convergence

Participants frequently reported that ChatGPT tends to generate similar responses across users and that sustained use may contribute to greater similarity in ideas and written work. These responses are consistent with the broader pattern shown in Table 3, where many participants also reported growing similarity between their own ideas and those of other ChatGPT users.

Table 6. Reported observations of similarity and convergence (N = 150)

Item	Most relevant response category	n	%
Have you ever noticed that ChatGPT tends to give similar responses to different people asking similar questions?	Often/Very often	112	74.7

Item	Most relevant response category	n	%
Have you ever discussed ChatGPT use with classmates and discovered you received nearly identical suggestions?	Often/Very often	96	64.0
Do you feel that your ideas have become more similar to those of peers who also use ChatGPT?	Slightly/Much more similar	103	68.7
Have you ever submitted an idea you thought was original, only to discover it was a common ChatGPT suggestion?	Several times/Frequently	84	56.0
In your observation, do students who use ChatGPT heavily tend to produce work that looks similar to each other?	Slightly/Much more similar	109	72.7
Have you ever deliberately avoided using ChatGPT because you wanted your work to be more original?	Often/Always	60	40.0

Table 7. Agreement with the statement: “If everyone uses ChatGPT, everyone’s ideas will start to look the same” (N = 150)

Response	n	%
Strongly disagree	4	2.7
Disagree	9	6.0
Neutral	20	13.3
Agree	62	41.3
Strongly agree	55	36.7

Overall, 117 participants (78.0 per cent) selected either agree or strongly agree with the statement that widespread ChatGPT use would make students’ ideas look more similar. At the same time, only 60 participants (40.0 per cent) reported often or always avoiding ChatGPT in order to preserve originality. This suggests that awareness of possible convergence did not consistently lead to avoidance of the tool.

Open-ended responses

The open-ended responses added context to the survey findings. Four recurring themes were evident: the tension between efficiency and independent thinking, the influence of AI suggestions on later ideation, reduced confidence in unaided creativity, and awareness of similarity across student work. Many participants described ChatGPT as useful at the beginning of tasks, especially when they were unsure how to start or wanted clarification of a difficult idea. At the same time, several responses suggested that initial AI suggestions could shape the direction of later thinking. Concerns about ownership also appeared repeatedly, with some participants indicating that even substantial rewriting did not always produce a strong sense that the final idea was fully their own. Other responses focused on similarity across student work, with participants describing AI-assisted outputs as competent and useful, but also generic or flattened in tone. These comments do not provide direct evidence of cognitive change. They do, however, support the quantitative findings by showing that many students understood their use of ChatGPT in mixed terms, recognising both its practical value and its possible implications for originality, ownership, and intellectual distinctiveness.

Discussion

Interpreting the findings

This study examined how students at three Irish universities use ChatGPT and how they understand its relationship to idea generation, originality, ownership, and similarity in academic work. Taken together, the findings show a mixed pattern. Participants described ChatGPT as useful across a range of academic tasks, yet many also associated regular use with lower confidence in generating ideas independently, weaker feelings of ownership over AI-assisted work, and greater similarity between their work and that of peers using the same tool.

The high level of reported use suggests that ChatGPT is no longer marginal in student practice. Most participants had used it, and many reported using it regularly for brainstorming, summarising readings, drafting, and explaining concepts. This matters because the educational implications of generative AI are likely to depend less on occasional use than on repeated use within routine study practices. Participants strongly endorsed the practical advantages of the tool, most notably time saving, help with idea generation, and support with understanding difficult material. These immediate benefits help explain why students continue to use ChatGPT even when they also express reservations about originality or dependence.

At the same time, the findings indicate that students do not experience these advantages as straightforward. Many participants reported finding it harder to generate ideas without ChatGPT, worrying that regular reliance on it might reduce their creativity, and questioning whether some ideas were fully their own. Large proportions also reported that their ideas were becoming more similar to those of classmates who used ChatGPT, and that ideas they initially regarded as original later seemed to reflect common AI-generated suggestions. These are perceptions rather than direct measures of cognitive change or textual similarity. Even so, they are important because they show that students themselves recognise a possible tension between efficiency and independent thinking.

The findings on ownership deserve close attention. Fewer than half of participants reported a strong sense of ownership over work produced with ChatGPT assistance. This suggests that the issue is not limited to whether AI improves the quality of final outputs. It also concerns how students relate to the ideas and arguments they submit. In higher education, authorship is not only a matter of producing text. It also involves judgement, responsibility, and a sense of intellectual agency. Where students feel uncertain about whether work is fully their own, the educational implications extend beyond performance and into questions of engagement and academic self-understanding.

The group differences should be interpreted cautiously. Male participants reported greater confidence in unaided creativity, stronger feelings of ownership, and more positive views of the originality of ChatGPT's suggestions. Humanities and Arts students reported lower confidence in their ability to be creative without AI tools than Engineering and Computing students. The present study cannot determine why these differences appeared. They may relate to disciplinary conventions, prior digital familiarity, or different understandings of what counts as creativity in different fields. The main point is that responses to ChatGPT were not uniform across the sample.

The open-ended responses support this interpretation. Participants often described a trade-off between convenience and distinctiveness. ChatGPT was seen as helpful in getting started, clarifying ideas, and reducing uncertainty, but some students also felt that once an initial

suggestion had been presented it became difficult to move beyond it. Others described a weaker sense of confidence in their own ability to generate ideas independently. These comments do not establish lasting cognitive effects, but they do suggest that students experience ChatGPT as something that can shape the direction of thought rather than simply assist with expression.

Relation to existing literature

The findings are broadly consistent with recent research showing that generative AI can support short-term productivity and idea development while also raising concerns about dependency, standardisation, and originality. The present study does not test creativity experimentally, and it does not analyse student writing directly. Its value lies in showing that students themselves often describe ChatGPT in both positive and uneasy terms. In this respect, the study aligns with work that presents generative AI in education as both enabling and constraining, offering immediate support while also raising concerns about over-reliance, sameness in output, and weakened confidence in independent thinking (Anderson et al., 2024; Doshi and Hauser, 2024; Zhou et al., 2026; Irfan, Murray and Ali, 2023a; Irfan, Murray and Ali, 2023b).

The results also speak to the discussion of cognitive offloading raised earlier in the paper. Participants often valued ChatGPT because it made it easier to begin tasks, organise ideas, and reduce the effort associated with academic writing (Irfan *et al.*, 2026). At the same time, many reported lower confidence in generating ideas without support. The study does not show that AI weakens cognition in any direct or universal sense. It does, however, suggest that students perceive a shift in how cognitive work is distributed between their own thinking and external assistance. This interpretation is consistent with prior work on AI use in higher education and with guidance-oriented scholarship that emphasises the need for critical engagement, rather than passive acceptance, when using AI tools in educational settings (Irfan and Murray, 2023a; Irfan and Murray, 2023b; Irfan, 2025).

The findings are also relevant to the literature on homogenisation. A substantial proportion of respondents believed that widespread use of ChatGPT could make students' ideas more alike, and many reported that their own work was becoming more similar to that of peers who used the same tool. These are perceptual findings rather than objective measures of textual similarity. Even so, they complement existing experimental work by showing that concerns about convergence are already visible at the level of student experience (Anderson et al., 2024; Padmakumar and He, 2024; Doshi and Hauser, 2024). They also extend earlier Irish higher education work on student perceptions by suggesting that concerns about AI are not limited to ethics, usability, or academic integrity, but may also include perceived effects on originality, ownership, and distinctiveness in academic work (Irfan, Murray and Ali, 2023b; Irfan, Aldulaylan and Alqahtani, 2023).

At the same time, the present study should not be treated as confirmation of stronger claims about lasting cognitive change. A cross-sectional survey can identify patterns of use and reported experience, but it cannot establish whether ChatGPT causes durable reductions in originality or creative capacity. The contribution of the study is therefore not causal proof. It is a closer account of how students understand the benefits and possible costs of ChatGPT within routine academic practice.

Theoretical implications

The study has three main theoretical implications. First, it suggests that discussions of creativity in AI-mediated education should not focus only on the apparent quality of final

outputs. The findings indicate that students distinguish between producing work that appears strong and feeling that they are thinking creatively while producing it. This distinction matters because product-centred definitions of creativity may miss changes in ownership, confidence, and process, all of which are relevant to educational development and to how students interpret their own agency within academic work (Amabile, 1982; Runco and Jaeger, 2012; Irfan, 2025).

Second, the findings support the view that ChatGPT should be understood as part of a socio-technical practice rather than as a neutral tool operating in isolation. Its effects appear to depend on how students use it, the kinds of tasks for which they use it, and the expectations surrounding academic performance. The more useful question is therefore not whether ChatGPT is simply good or bad for creativity, but under what conditions it supports learning and under what conditions it may narrow independence or variation. This reading is compatible with research that frames AI in higher education as a pedagogical and institutional issue, not merely a technical one (Irfan, Murray and Ali, 2023a; Irfan, Murray and Ali, 2023c; O'Sullivan et al., 2025).

Third, the study suggests that perceived homogenisation may matter educationally even where objective textual similarity has not yet been established. If students believe that their work is becoming less distinctive, this may shape their sense of ownership and their willingness to develop ideas beyond the most readily available formulation. Future theoretical work on AI and creativity should therefore attend not only to outputs, but also to perceptions of distinctiveness, authorship, and self-efficacy within learning environments. This point also connects to work on prompting and AI literacy, which suggests that the educational consequences of AI depend partly on whether users critically assess and revise generated material rather than merely adopt it (Irfan and Murray, 2023b; Bacha, Ali and Irfan, 2026; Irfan, 2025).

Practical implications

The findings have implications for teaching, assessment, and institutional guidance. For teaching, the results suggest that AI literacy should involve more than technical familiarity with prompts or outputs. Students may also need guidance on when to use ChatGPT, when to delay its use, and how to preserve space for independent idea generation before consulting automated suggestions. Teaching strategies that separate brainstorming, drafting, revision, and reflection more clearly may help students identify which parts of a task are being supported and which still depend on their own judgement. This view is consistent with prior work on AI literacy, prompt engineering, and critical engagement in higher education, which argues that meaningful educational use of AI requires structured guidance rather than simple access to tools (Irfan and Murray, 2023a; Irfan and Murray, 2023b; Irfan, 2025; Bacha, Ali and Irfan, 2026).

For assessment, the findings raise questions about what is being evaluated when students submit AI-assisted work. If students themselves express uncertainty about ownership and originality, then assessment design may need to place greater weight on process, explanation, and reflective justification rather than relying only on polished final texts. This does not imply that AI use should be rejected. It does suggest a need for clearer expectations around authorship, contribution, and intellectual engagement. Earlier Irish higher education work on AI use and policy supports this need for clearer frameworks linking academic integrity to pedagogy and student development (Irfan, Murray and Ali, 2023b; Irfan, Murray and Ali, 2023c; O'Sullivan et al., 2025).

For institutions, the findings suggest that policy should address more than misconduct or permissibility. Students appear to need practical guidance that acknowledges both the usefulness and the limits of ChatGPT. Institutional responses are likely to be more effective where they combine academic integrity guidance with support for critical engagement, authorship, and independent thinking. This is also consistent with the HEA policy framework and with related work on AI governance and higher education policy in Ireland and beyond (Irfan, Murray and Ali, 2023c; Irfan et al., 2023; O’Sullivan et al., 2025).

Limitations and future research

The findings should be interpreted in light of several limitations. The study was cross-sectional and based on self-reported data, so it cannot establish causal effects or directly measure creativity. The sample included students from three universities and several disciplinary areas, but it was not designed to be statistically representative of all students in Ireland. The open-ended responses added interpretive depth, but they did not constitute a separate qualitative study.

Future research could address these limitations in several ways. Longitudinal work would help determine whether perceptions of dependency, ownership, or similarity change over time. Experimental studies and text-based analyses could examine whether perceived convergence corresponds to measurable similarity in written outputs (Anderson et al., 2024; Padmakumar and He, 2024; Zhou et al., 2026). It would also be useful to investigate whether disciplinary culture, prior digital familiarity, or prompting skill influence how students use AI and how they evaluate its role in their own thinking. Research on AI literacy and teacher preparation suggests that differences in training and critical awareness may be important here, especially where institutional support is uneven (Bacha, Ali and Irfan, 2026; Irfan, 2025). Comparative work across different AI systems may also help clarify whether the patterns observed here are closely tied to ChatGPT or reflect broader features of large language model use in higher education.

Conclusion

This study examined how students at University College Cork, the University of Galway, and Maynooth University use ChatGPT and how they understand its effects on idea generation, originality, ownership, and similarity in academic work. The findings show that ChatGPT is widely used and strongly valued for practical reasons. Participants reported that it saved time, supported idea development, and helped them engage with difficult concepts. These benefits help explain why the tool has become part of routine academic practice.

At the same time, the results point to a more complicated pattern. Many participants reported uncertainty about the originality of AI-assisted ideas, lower confidence in generating ideas without support, and a sense that work produced with ChatGPT may be becoming more similar across users. Fewer than half reported a strong sense of ownership over work completed with ChatGPT assistance. These findings do not show that ChatGPT directly or permanently reduces creativity. They do, however, indicate that students experience a tension between the immediate usefulness of the tool and the desire to retain independence, distinctiveness, and authorship in their academic work. This tension is consistent with broader work in higher education that presents AI as both a support mechanism and a challenge to existing assumptions about creativity, authorship, and learning (Irfan, Murray and Ali, 2023a; Irfan, Murray and Ali, 2023b; O’Sullivan et al., 2025).

The main contribution of the study lies in showing that this tension is visible not only in theoretical debate or experimental research, but also in students’ own accounts of everyday

university use. In that sense, the question for higher education is not simply whether generative AI should be adopted or resisted. It is how such tools can be integrated in ways that support learning without reducing opportunities for independent thought and original judgement.

A considered response to generative AI therefore requires more than either enthusiasm or prohibition. It requires pedagogical approaches, assessment practices, and institutional guidance that recognise both the value and the limits of algorithmic support. The challenge is not to remove AI from higher education altogether, but to ensure that its use does not displace the forms of thinking through which students develop confidence in ideas they can genuinely claim as their own.

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A few entries in your earlier list were duplicates or misdated. The largest correction is that the “Creative scar without generative AI...” article should appear once under Zhou et al. (2026) rather than separately under Liu et al. and Zhou et al.