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Curiosity Regulation Under Conditions of Information Abundance

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Abstract

Digital environments have transformed information scarcity into a problem of selection, prioritization, and sustained attention. Search engines, social media feeds, online databases, recommendation systems, generative artificial intelligence, digital libraries, and continuous news streams provide individuals with unprecedented access to potentially relevant knowledge. Yet greater availability does not necessarily produce better exploration. This study develops the concept of curiosity regulation to describe the metacognitive capacity to initiate information seeking, sustain attention to productive knowledge gaps, narrow exploration when alternatives become excessive, evaluate informational value, and disengage when additional searching no longer contributes meaningfully to understanding. Drawing on information-gap theory, contemporary models of epistemic curiosity, optimal exploration, metacognitive monitoring, and information-overload research, the study proposes that the relationship between perceived information abundance and curiosity regulation is nonlinear. Because no original participant dataset was supplied, a transparent simulation-based design was adopted rather than presenting fabricated observations as empirical evidence.

A reproducible synthetic dataset of 420 cases was generated in which information abundance, information literacy, and curiosity regulation were modeled on five-point continua. The simulated results reveal an inverted-U pattern. Mean curiosity regulation increased from 3.32 under relatively low information abundance to 3.72 under moderate abundance before declining to 3.35 under high abundance. Quadratic regression produced a positive linear abundance coefficient and a negative squared coefficient, with an estimated turning point near 3.05 on the five-point abundance scale. Information literacy partially counteracted this decline but did not eliminate the simulated nonlinear pattern. The study contributes a regulatory perspective in which successful curiosity depends not on maximizing exposure to information but on maintaining an effective relationship among uncertainty, knowability, attentional capacity, relevance, and exploration control. Implications are discussed for higher education, digital-platform design, generative AI use, research practice, and information-management education.

Keywords: curiosity regulation, information abundance, epistemic curiosity, information overload, digital information seeking, metacognition, attentional control, exploratory behavior, information literacy

1. Introduction

Human curiosity developed under conditions in which useful information was often incomplete, costly, socially distributed, or difficult to obtain. Contemporary digital environments have altered this relationship. A question that once required extended searching through books, specialists, or physical archives can now produce thousands of results within seconds, while generative artificial intelligence can synthesize responses before a user has fully formulated the boundaries of the problem. Social platforms simultaneously expose users to continuous streams of novelty, commentary, recommendation, and personalized content. Information access has therefore become less constrained by physical availability and increasingly constrained by the individual's ability to determine what deserves attention. The psychological problem is no longer simply whether people possess sufficient curiosity to seek knowledge. It is whether curiosity can be regulated effectively when opportunities for further exploration are practically unlimited. Contemporary information-overload research shows that excessive informational demands can exceed available processing capacity and generate strain, inefficiency, and impaired decision processes.

Classical curiosity theory provides an important starting point. Loewenstein's information-gap account proposes that curiosity becomes salient when individuals recognize a discrepancy between what they know and what they want to know. Curiosity is therefore not equivalent to generalized exposure to novelty; it depends on a cognitively represented absence of knowledge that appears meaningful enough to resolve. Kidd and Hayden subsequently emphasized the central role of curiosity in information acquisition and learning, while later metacognitive approaches have treated curiosity as partly dependent on evaluations concerning one's current knowledge state. These perspectives imply that curiosity requires boundaries. A knowledge gap must be identifiable, the information must appear sufficiently valuable, and the individual must believe that further exploration can reduce uncertainty. When digital environments present hundreds of potentially interesting gaps simultaneously, the motivational force of curiosity can become difficult to allocate.

Recent research strengthens the argument that curiosity is dynamically regulated rather than simply present or absent. Poli and colleagues conceptualize curiosity within the dynamics of optimal exploration, emphasizing the relationship between uncertainty reduction, information value, and adaptive search. Recht and Yeung's 2023 research further demonstrates the importance of knowability, showing that perceived prospects of acquiring useful knowledge help predict curiosity and learning. Abir and colleagues likewise found that learning can reinforce curiosity for related information, suggesting that successful acquisition of knowledge reorganizes subsequent exploratory motivation rather than merely satisfying it. Together, these findings indicate that curiosity is maintained through feedback among knowledge, uncertainty, expected informational value, and perceived progress. Information abundance can strengthen this feedback loop when it creates accessible paths for learning, but it can also destabilize the loop when the number of available paths becomes difficult to evaluate.

The digital environment introduces a second challenge: the abundance of options can encourage switching before curiosity develops into sustained investigation. Tam and Inzlicht demonstrated across multiple experiments that switching within and between digital content, including skipping and fast-forwarding, can intensify rather than relieve boredom. Their results are important for curiosity research because digital switching can resemble exploration while functioning very differently from epistemically productive inquiry. A person moving rapidly among videos, search results, articles, notifications, and AI-generated answers is behaviorally active, yet such activity may reflect difficulty maintaining engagement rather than strong curiosity. The availability of an immediate alternative reduces the cost of abandoning the present information source. Consequently, information abundance may generate a paradoxical state in which individuals encounter more potentially interesting material while investing less sustained attention in any particular knowledge gap.

The present study develops curiosity regulation as a framework for analyzing this paradox. Curiosity regulation is defined here as the capacity to identify worthwhile knowledge gaps, initiate appropriate exploration, maintain inquiry long enough to gain meaningful understanding, resist irrelevant novelty, narrow excessive alternatives, and stop searching when marginal informational value becomes low. The study proposes that information abundance has an inverted-U relationship with this regulatory capacity. Under low abundance, curiosity regulation may be constrained because meaningful alternatives and pathways for resolving uncertainty are insufficient. Under moderate abundance, users can select among several useful pathways while retaining attentional and evaluative control. Under excessive abundance, opportunity proliferation can increase selection costs, attentional fragmentation, comparison demands, and informational fatigue. Because no genuine survey or experimental dataset was provided for the present manuscript, this proposition is evaluated through a transparent synthetic simulation rather than through invented empirical claims. The objective is to establish a theoretically grounded and statistically testable model for future human-participant research.

2. Objectives of the Study

2.1 To Examine the Relationship Between Information Abundance and Curiosity Regulation

The first objective is to analyze how increasing availability of digital information may influence individuals' capacity to regulate epistemic exploration. The study moves beyond a simple measure of how curious a person feels and focuses on whether curiosity can be directed toward relevant gaps, sustained across time, and terminated appropriately once sufficient understanding has been reached.

2.2 To Test a Nonlinear Model of Curiosity Regulation

The second objective is to test whether moderate information abundance represents a more favorable condition for regulated curiosity than either low or extremely high abundance.

The model predicts that increasing information availability will initially support curiosity regulation because users gain greater opportunity to resolve uncertainty. Beyond an optimal range, however, additional abundance is expected to generate diminishing returns as attentional and evaluative demands increase.

2.3 To Examine the Protective Role of Information Literacy

The third objective is to investigate whether information literacy can support effective curiosity regulation under abundant informational conditions.

Information literacy is treated as the capacity to identify information needs, evaluate source relevance and credibility, compare evidence, recognize redundancy, and determine when sufficient information has been obtained. The study proposes that such capabilities can strengthen curiosity regulation even though they may not fully remove the difficulties created by extreme abundance.

3. Review of Literature

3.1 Curiosity as Information-Gap Detection and Metacognitive Regulation

Curiosity has been conceptualized through multiple theoretical traditions, but a common feature is its relationship with missing, uncertain, novel, or incompletely understood information. Loewenstein's influential information-gap model proposes that curiosity emerges when attention is directed toward a discrepancy between an individual's existing knowledge and a desired state of knowledge. The motivational significance of a gap is therefore dependent on awareness. People cannot experience focused epistemic curiosity about every fact they do not know because most unknown information never becomes represented as a personally relevant deficiency.

This observation has major implications for environments characterized by abundant information. More information can make additional gaps visible. Reading one article may reveal unfamiliar concepts, contested findings, unexplained causal mechanisms, alternative interpretations, and new questions. Curiosity may consequently expand as knowledge expands. Abir and colleagues provide recent evidence consistent with this recursive mechanism by showing that learning can increase curiosity for related information. Knowledge acquisition therefore does not necessarily terminate curiosity. It can restructure an individual's representation of the topic so that additional unresolved relationships become noticeable.

Curiosity also depends on whether a gap appears resolvable. Goupil and Proust conceptualize curiosity as a metacognitive feeling associated with monitoring one's informational state, emphasizing that curiosity cannot be fully understood independently of metacognitive evaluations. This perspective helps distinguish meaningful curiosity from indiscriminate novelty seeking. A learner may recognize that something is unknown while simultaneously judging the problem as excessively difficult, irrelevant, inaccessible, or unlikely to yield a satisfactory answer. Under those circumstances, awareness of ignorance may produce confusion or disengagement rather than productive inquiry.

3.2 Information Abundance, Overload, and Attentional Fragmentation

Information abundance should not automatically be equated with information overload. Abundance refers to the availability of many informational opportunities, whereas overload arises when informational demands exceed the user's available processing resources or capacity to manage them effectively. Arnold, Goldschmitt, and Rigotti's comprehensive review demonstrates that information overload has been studied across multiple domains and is associated with an imbalance between informational demands and processing capacity. Consequently, two individuals can encounter the same information environment while experiencing different levels of overload because expertise, task structure, filtering strategies, time constraints, and technological support differ.

This distinction is essential for curiosity research. Abundance may initially improve exploration. Search engines can expose users to alternative explanations, digital libraries can lower access barriers, and interconnected knowledge environments can help people move rapidly from one concept to another. A person who encounters an intriguing research question can access empirical studies, theoretical reviews, datasets, lectures, disciplinary discussions, and related concepts within minutes. Such access expands the probability that a knowledge gap will encounter an informative pathway.

The relationship can change once the number of alternatives becomes difficult to compare. Information overload requires users to devote cognitive resources to activities that are only indirectly related to the original question: evaluating source quality, checking duplication, comparing competing explanations, monitoring browser tabs, deciding which link to open next, remembering unfinished searches, and determining whether additional sources are necessary. Arnold and colleagues' review indicates that overload is not simply a problem of volume; characteristics of tasks, information, individuals, and organizational environments jointly influence whether overload occurs.

3.3 From Epistemic Curiosity to Regulated Exploration

The concept of curiosity regulation proposed in this study draws on—but is not identical to—trait curiosity, epistemic curiosity, information-seeking frequency, or digital engagement. A highly curious person may seek substantial information but still regulate exploration poorly. Similarly, a person who performs numerous searches may be responding to uncertainty, anxiety, distraction, or habitual checking rather than epistemic curiosity.

Silvia's appraisal approach to interest provides a useful theoretical parallel. His research indicates that interest is influenced by appraisals of novelty and complexity together with an individual's perceived ability to understand the material. Material that is entirely familiar provides little informational novelty, while material that is perceived as impossibly complex may not sustain interest. Curiosity regulation operates through a comparable balance. The individual must encounter sufficient uncertainty to motivate exploration but sufficient structure to believe that exploration can produce progress.

Puerta-Sierra and Puente-Díaz demonstrated that autonomy and competence satisfaction can contribute to epistemic curiosity, reinforcing the importance of perceived agency in knowledge seeking. This finding is particularly relevant in algorithmically organized environments. When users experience themselves as deliberately choosing and pursuing questions, curiosity can retain an autonomous quality. When platforms repeatedly determine the next informational object through recommendations, autoplay, notifications, or infinite feeds, behavior may remain exploratory in appearance while becoming increasingly externally directed.

Gruber and Ranganath's PACE framework further demonstrates that curiosity has important consequences for learning and memory through interactions among prediction, appraisal, reward-related processes, and exploration. Curiosity therefore matters not only because it motivates information acquisition but because it can alter how information is encoded and remembered.

4. Research Methodology

4.1 Research Design and Simulation Strategy

The present study adopts a quantitative simulation-based analytical design. No original participant survey, experimental dataset, institutional dataset, or digital behavioral log was supplied. Consequently, the study does not report synthetic observations as if they represented responses collected from real individuals.

A reproducible hypothetical dataset containing 420 simulated cases was generated using a fixed random seed of 42. The purpose of the simulation was not to estimate population parameters but to examine whether the theoretically proposed inverted-U relationship between information abundance and curiosity regulation produces an interpretable statistical pattern.

Information abundance was generated on a continuous scale ranging from 1 to 5 using a symmetrical beta distribution. The distribution produced relatively fewer observations at the extreme low and high ends and a greater concentration around moderate informational conditions. This structure was chosen because many contemporary digital users are unlikely to operate under either complete informational scarcity or absolute informational saturation continuously.

4.2 Construct Operationalization and Proposed Measurement

Table 1: Operational Framework of the Study

Construct	Conceptual Definition	Simulated Operationalization	Analytical Role
Information Abundance	Perceived availability of competing informational sources, explanations, links, viewpoints, recommendations, and exploratory pathways	Continuous score from 1 to 5	Main predictor
Curiosity Regulation	Capacity to identify meaningful knowledge gaps, sustain relevant exploration, resist distracting novelty, narrow alternatives, and terminate search appropriately	Continuous score from 1 to 5	Outcome
Information Literacy	Capacity to search strategically, evaluate source relevance and credibility, compare information, recognize redundancy, and determine informational sufficiency	Continuous score from 1 to 5	Control variable
Information Abundance²	Quadratic transformation used to detect nonlinear change	Abundance × Abundance	Nonlinear predictor
Abundance Category	Relative level of informational availability	Low = 1.00–2.33; Moderate = 2.34–3.67; High = 3.68–5.00	Descriptive comparison

Source: Author-developed simulation framework. Note: Table 1 describes synthetic constructs and proposed operational definitions. It does not represent measurements obtained from human participants. A future empirical study may validate the framework using a concise five-item questionnaire. These items are proposed research items and were not administered in the present study.

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4.3 Analytical Procedure and Ethical Status

The synthetic analysis was completed in three stages. First, descriptive statistics were calculated for information abundance and curiosity regulation. Information-abundance values were then categorized into low, moderate, and high groups to provide an intuitive comparison of regulatory outcomes.

Second, a quadratic ordinary least squares regression model was estimated:

$$CR_i = \beta_0+\beta_1IA_i+\beta_2IA_i^2+\beta_3IL_i+\varepsilon_i$$

An inverted-U relationship requires:

$$\beta_1 > 0$$

and

$$\beta_2 < 0$$

The estimated turning point was calculated as:

$$IA^*=-\frac{\beta_1}{2\beta_2}$$

This value identifies the estimated abundance level at which predicted curiosity regulation reaches its maximum within the fitted synthetic model.

Third, results were examined conceptually in relation to information-gap theory, optimal exploration, knowability, information overload, and digital attentional switching.

Inferential statistics generated from synthetic data require careful interpretation. Statistical significance demonstrates that the programmed theoretical relationship can be recovered against simulated stochastic variation. It does not demonstrate that the corresponding coefficient exists in a human population or that the relationship has a particular real-world magnitude.

No human participants were recruited. No identifying information, behavioral records, health information, institutional records, or private digital activity were collected. Human-subject research ethics approval and informed consent were therefore not applicable to this simulation. Future empirical implementation should obtain appropriate institutional ethical clearance and participant consent where required.

5. Analysis

5.1 Distribution of Curiosity Regulation Across Information-Abundance Conditions

The 420 simulated observations produced a clearly nonlinear pattern. Among the 108 cases classified as low information abundance, mean curiosity regulation was approximately 3.32, with a standard deviation of approximately 0.48.

The moderate-abundance category contained 208 cases and produced the highest mean curiosity-regulation score of approximately 3.72, with a standard deviation of 0.39.

The high-abundance category contained 104 cases. Mean curiosity regulation declined to approximately 3.35, with a standard deviation of 0.42.

The descriptive pattern therefore indicates that the most favorable simulated condition is neither informational scarcity nor maximum informational availability. Regulation improves substantially when informational opportunities increase from low to moderate levels but deteriorates when the environment becomes highly abundant.

The result supports the distinction between informational opportunity and informational manageability. Moderate abundance provides enough alternatives to make knowledge gaps resolvable, while excessive abundance introduces sufficient competition among alternatives to reduce the individual's capacity to maintain coherent exploration.

5.2 Nonlinear Regression Results

Table 2: Simulated Descriptive Statistics and Quadratic Regression Results

Analytical Component	Statistic	Estimate	Analytical Meaning
Low Information Abundance	n	108	Synthetic observations
	Mean curiosity regulation	3.319	Lower regulatory effectiveness
	SD	0.484	Synthetic dispersion
Moderate Information Abundance	n	208	Synthetic observations
	Mean curiosity regulation	3.716	Highest regulatory effectiveness
	SD	0.391	Synthetic dispersion
High Information Abundance	n	104	Synthetic observations
	Mean curiosity regulation	3.352	Decline under high abundance
	SD	0.416	Synthetic dispersion
Quadratic Regression	Information abundance, B	1.866	Positive initial relationship
	SE	0.149	—
	t	12.541	—
	p	$< .001$	Recoverable synthetic relationship
Quadratic Regression	Information abundance^2, B	−0.306	Negative curvature
	SE	0.024	—
	t	−12.545	—
	p	$< .001$	Supports simulated inverted-U relationship

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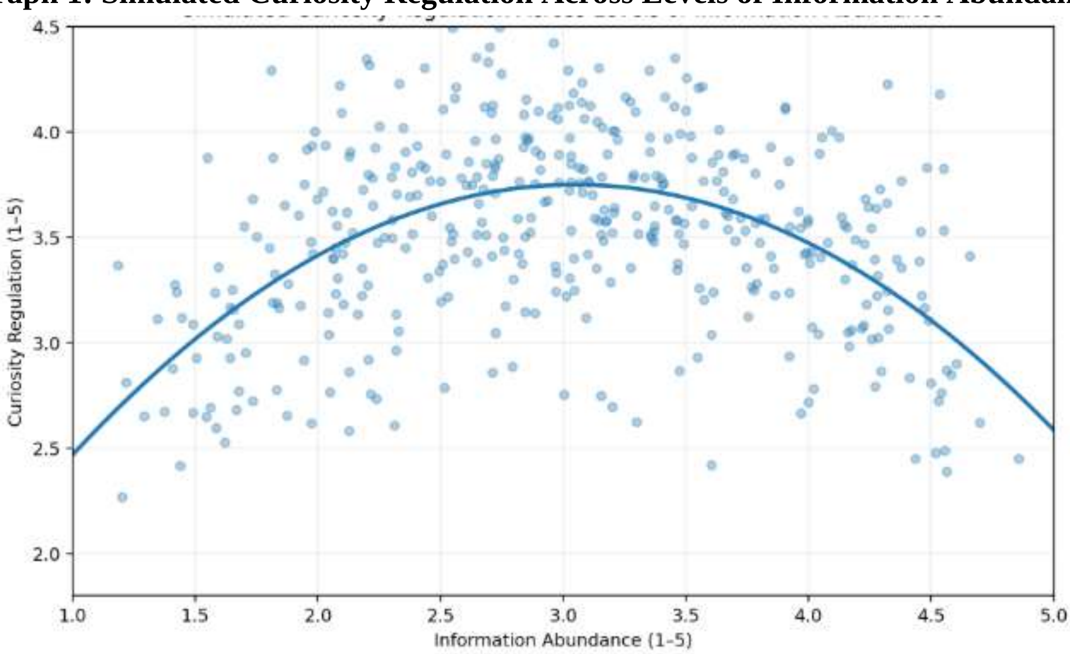
The regression model reinforces the descriptive pattern. The positive linear coefficient indicates that increasing information availability initially predicts stronger curiosity regulation. The negative quadratic coefficient indicates that the relationship progressively weakens and eventually reverses.

The exact numerical threshold should not be interpreted as a universal psychological optimum. It results from the simulation specification. The substantive proposition requiring empirical validation is the shape of the relationship, not the precise value of 3.05.

Information literacy also produced a positive simulated coefficient. This result is theoretically plausible because individuals who can evaluate relevance, credibility, redundancy, and informational sufficiency should be better equipped to navigate large information environments. Information literacy nevertheless operates as a protective resource rather than a complete solution: even highly skilled users possess finite attention and time.

5.3 Graphical Evidence of the Regulatory Threshold

Graph 1: Simulated Curiosity Regulation Across Levels of Information Abundance



Graph Details: Each point represents one simulated observation. The horizontal axis represents perceived information abundance on a five-point continuum, while the vertical axis represents curiosity regulation. The fitted quadratic curve summarizes the nonlinear pattern programmed into and recovered from the simulation.

Interpretation: Curiosity regulation increases as informational conditions move away from scarcity and toward moderate abundance. The fitted relationship reaches its highest region around the middle of the abundance scale. Beyond this point, additional informational availability corresponds with progressively lower regulatory performance.

The dispersion around the curve is also important. Information abundance alone does not determine regulation perfectly. Individuals theoretically differ in information literacy, expertise, motivation, time availability, attentional capacity, goals, and tolerance for uncertainty. An abundant informational environment can therefore remain manageable for one person while becoming overwhelming for another.

Key Finding: The simulated evidence supports an optimal-abundance proposition: curiosity appears most productively regulated when the environment supplies enough information to make knowledge gaps explorable without presenting so many competing pathways that selection and attentional control become dominant cognitive tasks.

6. Discussion

6.1 Why Moderate Information Abundance Can Support Curiosity

The simulated findings suggest that information abundance should initially strengthen rather than undermine curiosity regulation. This position is consistent with information-gap theory. Curiosity requires a recognizable discrepancy between present knowledge and desired knowledge. Environments containing too little accessible information may leave individuals unable to define such gaps precisely or uncertain about whether useful answers exist.

Moderate abundance changes this condition. Exposure to several credible sources can reveal conceptual disagreements, unfamiliar mechanisms, unexplained results, and adjacent questions. The learner gains sufficient knowledge to understand what remains unknown. In this sense, information does not simply satisfy curiosity; it can create increasingly differentiated curiosity.

Murayama, FitzGibbon, and Sakaki's reward-learning perspective offers a complementary explanation. Knowledge acquisition can become intrinsically rewarding, and experiences of successful learning can influence subsequent exploratory motivation. Moderate information abundance may strengthen this cycle because answers are accessible enough to permit progress without making the exploratory environment incomprehensible.

The importance of perceived attainability is further supported by Recht and Yeung's finding that knowability predicts curiosity and learning. A person is more likely to investigate a question when additional knowledge appears obtainable. Moderate abundance can increase perceived knowability by providing multiple accessible pathways toward understanding.

The critical issue is therefore not simply informational quantity. An effective exploratory environment presents structured possibility. Individuals should encounter enough variation to become aware of meaningful unknowns while retaining a sense that those unknowns can be investigated systematically.

6.2 When Abundance Becomes Curiosity Fragmentation

The decline observed under high simulated abundance represents the central contribution of the study. Information availability can cross a functional boundary after which additional options impose greater regulatory costs than epistemic benefits.

One mechanism is selection burden. Every additional information source creates another possible allocation of attention. In limited environments, the question may be whether to investigate. In abundant environments, the question becomes which of dozens or hundreds of potentially relevant objects should be investigated first. Cognitive effort moves from understanding information toward managing alternatives.

A second mechanism is attentional opportunity cost. Remaining with one source means temporarily rejecting every competing source. Digital interfaces make this opportunity cost unusually salient because alternatives remain continuously visible through recommended links, related posts, browser tabs, notifications, search results, and algorithmic suggestions.

Tam and Inzlicht's experimental findings demonstrate that switching can become self-defeating. Participants' attempts to escape boredom through digital switching ultimately intensified boredom rather than reducing it. This suggests that greater control over switching does not necessarily produce deeper engagement.

Within curiosity regulation, such switching can create pseudo-exploration. The user continues consuming novel information and may subjectively experience activity or discovery, but the exploration does not remain organized long enough for conceptual integration.

A person researching climate adaptation, for example, might begin with urban heat islands, move to green roofs, encounter a video on sustainable architecture, open an article on energy efficiency, follow a recommendation about smart cities, and eventually reach a discussion of artificial intelligence in urban planning. Every transition can be intellectually interesting, yet the original knowledge gap may remain unresolved.

This process differs from genuine interdisciplinary exploration because it lacks intentional return, synthesis, and stopping rules. The problem is not breadth itself; productive research frequently requires broad exploration. The problem arises when transitions are controlled more strongly by environmental novelty than by an epistemic objective.

Information overload creates a further difficulty. Arnold and colleagues' comprehensive review shows that excessive informational demands can produce strain when they exceed the individual's capacity for processing and management. Curiosity requires cognitive resources to compare new knowledge with prior knowledge, detect inconsistencies, update beliefs, formulate new questions, and evaluate explanatory adequacy. If those resources are consumed by navigating the information environment itself, less capacity remains for the deeper cognitive processes that make curiosity educationally valuable.

6.3 Implications for Education, Digital Platforms, and Generative AI

The findings suggest that contemporary education should treat curiosity regulation as a teachable information-management competence. Traditional approaches often encourage students to “research more,” “explore further,” or “consult multiple sources.” These instructions are appropriate under informational scarcity but incomplete under informational abundance.

Students also need explicit instruction in determining how much searching is enough, which sources deserve priority, when evidence has become redundant, how to document unresolved uncertainty, and when to move from collection to interpretation.

Research assignments can support this capability by requiring students to define an initial question before searching, establish inclusion criteria for sources, identify a stopping rule, and maintain a short decision record explaining why particular information was retained or rejected.

Students should also learn to distinguish productive curiosity expansion from curiosity drift. Productive expansion occurs when a new question meaningfully changes or deepens understanding of the original problem. Curiosity drift occurs when novelty repeatedly redirects attention without producing cumulative conceptual value.

Digital-platform designers have corresponding responsibilities. Systems designed exclusively around engagement can encourage continuous informational consumption even when additional exposure no longer serves the user's initial goal. Search and recommendation interfaces could instead help users maintain epistemic orientation.

Useful design mechanisms might include persistent display of the user's original question, clustering of similar results, redundancy indicators, distinctions between foundational and peripheral sources, user-controlled exploration boundaries, and optional prompts asking whether a newly selected item remains relevant to the original task.

7. Conclusion

The transformation from information scarcity to information abundance has changed the psychological requirements of curiosity. Curiosity remains a major driver of learning, exploration, and knowledge acquisition, but unlimited access to informational alternatives does not automatically strengthen these outcomes. Contemporary users must regulate not only whether they seek information but also which knowledge gaps deserve attention, which sources merit deeper examination, how broadly exploration should expand, and when sufficient understanding has been achieved. Curiosity therefore increasingly functions as a metacognitive and self-regulatory challenge.

The simulation developed in this study illustrates a theoretically plausible inverted-U relationship between information abundance and curiosity regulation. Mean regulatory scores increased from approximately 3.32 under low abundance to 3.72 under moderate abundance before falling to approximately 3.35 under high abundance. Quadratic regression reproduced the expected positive initial relationship and negative curvature, with the fitted maximum near the middle of the abundance continuum. These numerical values are synthetic and should not be interpreted as population estimates. Their purpose is to operationalize a hypothesis that can be tested using genuine experimental, survey, and behavioral evidence.

The study's principal theoretical contribution is the distinction between curiosity opportunity and curiosity regulation. Information abundance creates opportunities for curiosity by exposing individuals to new questions and providing accessible pathways toward answers. At high levels, however, those same opportunities compete for limited attention. Selection burden, switching, redundancy, weak stopping rules, and informational fatigue can transform epistemically motivated exploration into fragmented consumption. Information literacy can strengthen users' ability to manage this environment, but the design of platforms, educational tasks, and AI systems also influences whether curiosity remains purposeful.

The appropriate response to information abundance is therefore neither informational restriction nor unrestricted consumption. The more sustainable objective is selective openness: maintaining sufficient openness to discover meaningful unknowns while exercising enough control to protect attention, evaluate relevance, consolidate learning, and terminate searches when their marginal value becomes low. In an era where additional information is nearly always available, intellectual maturity may increasingly be demonstrated not by how much a person can continue exploring, but by how effectively that person can decide what is worth knowing next.

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