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Self-identity formation and risks among university students in the age of artificial intelligence

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Abstract

Artificial intelligence increasingly participates in the activities through which university students learn what they can do, explain who they are, and imagine who they might become. This theoretical review examines the formation of self-identity through AI-supported learning, writing, social interaction, and career exploration. It connects identity development and narrative identity with research on human agency, motivation, cognitive offloading, algorithmic mediation, and generative AI. The central argument is that AI becomes relevant to identity when students interpret technologically mediated experiences as evidence about their abilities, commitments, social worth, or future prospects. AI can widen opportunities for participation and experimentation, especially when it makes unfamiliar tasks and forms of expression accessible. Risks emerge when students delegate judgments they need to develop, adopt generated accounts of their lives without examining them, or treat algorithmic evaluations as authoritative descriptions of personal potential. Institutional assessment practices and unequal access influence these processes. The review proposes an educational approach that combines explicit decisions about delegation, opportunities to demonstrate learning across assisted and independent tasks, recognition of diverse voices, and accountable governance of student data. It also identifies research designs capable of separating immediate performance gains from changes in identity over time. Universities can support students' self-authorship by making the relationship between assistance, achievement, and responsibility visible throughout learning.

Keywords: self-identity, university students, generative artificial intelligence, student agency, narrative identity, higher education

I. INTRODUCTION

A student who uses artificial intelligence to revise an essay encounters a question that extends beyond whether the new paragraph is accurate. The revision changes the evidence through which the student and others judge the student's abilities. Similar questions arise when a coding assistant completes a difficult function, a chatbot interprets a personal conflict, or a career application recommends a professional pathway. Each interaction can enter an ongoing account of personal competence and direction. University students develop self-understanding through academic work, relationships, and decisions about the future. As AI participates in those activities, it becomes part of the circumstances under which self-identity takes shape.

Self-identity concerns the continuity and meaning people give to their lives, the commitments they recognize as their own, and their understanding of their place among others. The concept includes more than a momentary feeling of confidence. A student can feel reassured by an AI-generated answer while remaining uncertain about being a capable learner. Another can struggle with an assignment while developing a stronger commitment to a discipline. These differences matter because educational discussions frequently move from better task performance to claims about empowerment without examining how

students interpret their experiences. The formation of identity involves that interpretation and its connection to subsequent action.

Research on AI in higher education provides reasons to examine this process closely. Zawacki-Richter et al. (2019) identified a weak connection between many AI applications and educational perspectives, alongside limited critical attention to risks. More recent student research addresses perceived usefulness, concerns about accuracy, and expectations about personal development (Chan & Hu, 2023). Such findings establish that students recognize several consequences of AI use. They leave open how repeated experiences become durable beliefs about who students are. An identity perspective links educational technologies to the development of commitments and personal responsibility across university life.

This review develops the argument that AI affects self-identity through the interpretation of mediated experience. Students encounter an output or recommendation, attribute its value to particular sources, and use that attribution to revise their understanding of themselves. Their response then influences later choices about effort, disclosure, relationships, and aspiration. The analysis draws on foreign-language scholarship in identity theory, educational psychology, human-computer interaction, and AI research. It treats generative AI as a central case while considering recommendation systems and algorithmic evaluation where they shape the same developmental processes. The resulting framework connects the formation of identity to identifiable practices and institutional conditions.

II. SCOPE AND CONCEPTUAL APPROACH

The article is a theoretical narrative review organized around mechanisms of identity formation. Foundational literature supplies concepts of exploration, commitment, narrative continuity, agency, and possible selves. Contemporary research supplies evidence about AI-supported performance, student perceptions, dependence on assistance, creative production, and interaction with social chatbots. These bodies of work address different populations and outcomes. Their integration therefore requires a clear distinction between findings reported by individual studies and propositions developed here about university students. The review uses the latter to formulate explanations and research questions, without treating them as established causal effects.

Literature selection prioritized English-language original studies and established theoretical works that explain identity development or examine relevant forms of AI use. Contemporary evidence receives particular attention where it identifies differences between assisted performance and learning, or between intended and experienced forms of interaction. The synthesis proceeds from developmental concepts to specific encounters with AI, then examines the social conditions under which those encounters acquire meaning. This approach places findings from different research traditions in a common explanatory

framework. Its unit of analysis is the process connecting an interaction, the student's interpretation of that interaction, and subsequent participation or commitment.

Terminological precision is necessary because several adjacent concepts can otherwise become interchangeable. Self-esteem concerns evaluations of personal worth; self-efficacy concerns beliefs about the ability to perform particular actions; academic identity concerns belonging and recognition within educational roles. Self-identity concerns the broader organization of these experiences into an account of the person. Student agency denotes students' capacity to influence their learning and conduct through purposeful action. Self-authorship is used here to describe taking responsibility for the reasons and commitments through which one understands and directs one's life. AI refers to the broader technological category, and generative AI denotes systems that produce content in response to inputs.

III. IDENTITY DEVELOPMENT IN UNIVERSITY LIFE

University life places students in settings where earlier identifications encounter new demands. Students select fields, join communities, experience evaluation, and consider work beyond graduation. Erikson's (1968) account connects identity to the relationship between personal development and social circumstances. Marcia (1966) operationalized identity through differences in exploration and commitment. Together, these approaches direct attention to how students arrive at commitments and whether alternatives have received serious consideration. AI enters this process when it offers explanations, representations, or plans that students can adopt while deciding what kind of learner or professional they intend to become.

The developmental significance of university experience also varies across social conditions. Arnett (2000) described emerging adulthood as a period of identity exploration in settings that permit extended transitions into adult roles. Access to such exploration depends on material and cultural circumstances. Students supporting relatives, combining employment with study, or facing restrictive career options have different opportunities to experiment. AI assistance may reduce some immediate costs of exploration, such as the effort needed to understand an unfamiliar discipline. The time and resources required to pursue the resulting possibilities remain unevenly distributed. Any account of AI-mediated identity must therefore consider the conditions under which an apparent option becomes a practical choice.

Narrative identity provides a way to understand how particular experiences acquire personal meaning. McAdams and McLean (2013) describe identity as an evolving life story that connects a reconstructed past with an imagined future. An examination result or failed project becomes consequential through its place in that story. Students may interpret failure as evidence of unsuitability, an episode of learning, or a reason to change direction. AI can supply language for each interpretation. Generated explanations become relevant to identity when students incorporate them into autobiographical accounts and use them to justify future decisions. The effect depends on the relation between the explanation and the student's own experience.

Giddens (1991) places reflexive self-understanding within social conditions that require people to maintain accounts of their lives across changing circumstances. University students already encounter multiple expectations from families, disciplines, employers, and peers. AI adds a readily available source of descriptions and advice to this environment. A chatbot can suggest how to explain a setback, describe a personal strength, or present an aspiration to an audience. This availability changes the practical work of constructing a coherent account. Students gain access to formulations they may struggle to produce, while also encountering ready-made interpretations that can become accepted through repetition.

Agency and motivation explain why these processes have educational consequences. Bandura (2001) connects agency with intentionality, forethought, self-regulation, and reflection within social structures. Ryan and Deci (2000) identify autonomy, competence, and relatedness as basic psychological needs in motivation and development. These frameworks help distinguish different experiences of receiving assistance. Students can endorse the purposes of an AI-supported activity and understand their contribution to its outcome. They can also experience a successful outcome as disconnected from their capacities or choices. The identity implications emerge through how assistance affects ownership of goals and interpretations of competence over time.

IV. HOW AI PARTICIPATES IN THE FORMATION OF SELF IDENTITY

4.1 Learning performance and the interpretation of competence

Academic competence becomes part of identity through repeated encounters with difficulty and feedback. Generative AI changes these encounters by supplying explanations, examples, and partial solutions at the point of need. Chan and Hu's (2023) survey of university students in Hong Kong documented perceived benefits for learning support, writing, and idea generation, alongside concerns about dependence and personal development. Students thus encounter AI as a resource for doing academic work and as an object of judgment about how learning should occur. Whether a successful task supports a stronger learner identity depends partly on how the student explains that success.

Consider a student who has previously avoided statistics. An AI explanation makes a regression model understandable, and the student then applies the reasoning to another dataset. The experience can support a revised belief that statistical work is accessible with appropriate assistance. If the same student repeatedly submits generated analyses without understanding the assumptions, the completed tasks supply weaker evidence about transferable competence. These are illustrative pathways, not findings from a single experiment. They show why identity research should examine the attribution of success and subsequent behavior, including whether students choose more demanding work or become increasingly reluctant to proceed without assistance.

Evidence about dependence gives this distinction practical force. Darvishi et al. (2024) examined AI assistance in university peer feedback and found that students tended to rely on assistance more than to acquire the corresponding practices. Their intervention involved specific feedback-support functions rather than contemporary general-purpose chatbots. The study nevertheless establishes an important educational possibility: improved behavior during assistance can coexist with limited persistence after its removal. For identity formation, the proposed consequence is a gap between visible achievement and the student's confidence in acting independently. Research must measure that consequence directly, including students' accounts of ownership and capability.

Students also compare their abilities with the speed and fluency of generated outputs. This comparison changes the reference point against which effort is judged. A novice may interpret a rough first draft as evidence of personal inadequacy when a system produces polished prose immediately. Another may use the contrast to identify a particular skill worth practicing. Teachers influence which interpretation becomes credible by explaining how expertise develops and by making the purpose of practice explicit. The identity question concerns what students learn about themselves from the comparison, especially when the production process behind the machine's output remains largely invisible.

4.2 Writing and autobiographical interpretation

Writing connects academic participation with the formation of a recognizable voice. Students discover positions through selecting evidence, deciding what a sentence commits them to, and responding to criticism. AI-generated text can help students enter unfamiliar genres and express ideas across linguistic barriers. It can also supply the substantive position that a student subsequently presents as personal judgment. The resulting issue concerns the student's relationship to the argument: whether they understand its reasons, accept its commitments, and can revise it when challenged. This relationship makes authorship a developmental question alongside its conventional treatment in academic integrity procedures.

Autobiographical writing creates a particularly direct route into self-identity. Personal statements, reflective assignments, and scholarship applications ask students to organize experience into accounts of motivation and growth. A generated narrative can make a complicated experience easier to communicate. It may also introduce a persuasive explanation that the student had never considered or endorsed. A model might turn uncertain career exploration into a story of lifelong vocation. The student then encounters a polished representation that others may reward. The theoretical risk arises when institutional approval makes that representation harder to question, even though it fits the person's history poorly.

Students retain interpretive agency when they examine generated language against the details of their lives. They can ask whether a description preserves ambiguity, assigns motives accurately, or makes an event appear more decisive than it was. Rejecting an attractive formulation is itself an exercise of judgment. Narrative development therefore depends on access to opportunities for discussion and revision, including

conversations with people who know the student over time. Such encounters provide forms of accountability that a single generated response cannot supply. The educational task is to help students explain why a particular account represents their experience and what remains unresolved within it.

4.3 Recognition through platforms and algorithmic evaluation

Identity develops through social recognition as well as private reflection. Social network sites organize profiles and connections through which people present themselves and encounter audiences (boyd & Ellison, 2007). Contemporary AI features participate in selecting content, proposing descriptions, and interpreting patterns of activity. Bucher's (2017) concept of the algorithmic imaginary directs attention to how people understand and feel about algorithmic operations. Students act partly on these understandings. A belief that certain forms of presentation receive greater visibility can influence what they disclose, which achievements they emphasize, and which aspects of themselves they leave out.

Algorithmic classifications become consequential when institutions use them to organize opportunities. An educational recommendation may describe a student as requiring support; a career application may rank professional matches; a dashboard may mark participation as weak. Each classification simplifies a person for a particular purpose. Its developmental effect depends on whether students and institutional actors treat it as provisional information or a stable description of the student. The proposed mechanism is recursive: a label shapes available activities, those activities generate further data, and the resulting record appears to confirm the original classification. This pathway requires empirical investigation within specific educational systems.

Noble's (2018) analysis of search demonstrates how commercial and social arrangements can reproduce unequal representations of groups. Bender et al. (2021) likewise identify risks associated with the data and scale of language models. For students, these arguments raise questions about the cultural assumptions embedded in descriptions of success, professionalism, and intelligence. A generated recommendation can appear personalized while reproducing conventional expectations about who belongs in a role. Universities need procedures through which students can examine such descriptions, compare alternatives, and challenge consequential classifications. These procedures affect whether recognition supports exploration or narrows its terms.

4.4 Relationships and imagined futures

Conversational systems can offer a space to articulate concerns before discussing them with another person. Students may use them to rehearse a difficult conversation, explore an unfamiliar identity, or find words for an experience they have been reluctant to disclose. Earlier digital identity research already examined experimentation across mediated settings (Turkle, 1995). Generative dialogue adds responsive language that can adapt to the user's account. Its identity relevance lies in how students interpret the

response: as a provisional conversational resource, an authoritative interpretation, or evidence that their feelings and choices have received meaningful recognition.

Research on social chatbots shows that relational responses vary across systems and users. Croes and Antheunis (2021) found that interaction with Mitsuku did not automatically develop into friendship. Laestadius et al. (2024) examined accounts of harm connected to emotional dependence on Replika. These studies concern particular technologies and populations rather than university students as a whole. They establish that perceived responsiveness and relational experience deserve analysis instead of assumption. For student identity, a useful question is whether chatbot interaction supports engagement with other relationships or increasingly becomes the primary setting in which personal experience is interpreted and affirmed.

Career imagination provides another route from interaction to identity. Markus and Nurius (1986) explain how possible selves connect present motivation with hopes and fears about the future. AI can help students investigate pathways, identify unfamiliar roles, and compare the demands of different occupations. It also supplies new reference points for judging the future value of current skills. Noy and Zhang's (2023) experiment demonstrated productivity gains on professional writing tasks, offering evidence about changes in task performance. Students' interpretations can extend beyond those findings to broader expectations about occupational worth. Career education should help them distinguish evidence about tasks from conclusions about entire professions or personal futures.

The proposed process also has a temporal dimension. A single successful interaction can produce relief, while repeated interactions can establish expectations about what is possible without assistance. Students may initially use a system to overcome an obstacle, later incorporate it into a routine, and eventually regard that routine as necessary for being a competent participant. The transition depends on opportunities to compare experiences and revise interpretations. Identity research should therefore follow episodes as they accumulate, including occasions when the system is unavailable, produces an error, or conflicts with advice from someone the student trusts. These moments can expose assumptions that otherwise remain unexamined.

V. DEVELOPMENTAL OPPORTUNITIES

AI can expand identity exploration by reducing the initial cost of participation. A student with limited programming experience can investigate an idea using explanations and worked examples. A multilingual student can compare alternative ways to express a position before entering a seminar discussion. Students who have hesitated to ask basic questions can revisit explanations privately. These activities matter developmentally when they lead to participation in practices that previously seemed inaccessible. The resulting opportunity concerns an expanded range of experiences from which students can form

commitments. Its value depends on what happens after entry, including feedback, sustained practice, and recognition from others.

The opportunity is especially clear when assistance makes substantive contributions easier to recognize. Language difficulties can obscure a student's disciplinary understanding; unfamiliarity with a genre can conceal a thoughtful argument. AI-supported revision can reduce these barriers when the student retains control of the claim and checks the resulting language. Institutions then face a responsibility to assess the relevant learning objective. If a course evaluates historical reasoning, linguistic polish alone provides an incomplete basis for judgment. Clear criteria allow students to understand which abilities their achievement demonstrates, helping them incorporate success into a more accurate account of their competence.

Creative assistance offers both individual benefits and questions about shared expression. Doshi and Hauser (2024) found improved evaluations of individual stories under AI assistance alongside reduced collective diversity in the experimental output. Their findings concern a particular writing task, not student identity. They nevertheless identify a condition worth examining in education: students can experience an individual improvement while the range of work produced across a group becomes more similar. Classroom discussion can make this visible by comparing suggestions and examining choices. Students then have opportunities to identify where their interests depart from common formulations and to develop reasons for those departures.

AI also creates opportunities to practice the management of assistance. Students increasingly need to decide which activities to delegate, what evidence to verify, and when to seek a different form of help. Learning to make these decisions can support an identity grounded in responsible participation within complex work. Bandura's (2001) account includes proxy and collective agency, providing a theoretical basis for recognizing that purposeful action often involves others and supporting systems. An educational application follows: students need experiences in which they explain the distribution of work and remain answerable for the outcome. Such experiences can make interdependence compatible with a clear sense of personal responsibility.

Opportunities for identity exploration can also emerge through deliberate comparison of competing positions. In a seminar, students can use generated responses to examine how a question changes when approached from different theoretical traditions. The educational value lies in identifying assumptions and deciding which interpretation is justified. A student who has treated disagreement as personal failure can come to understand it as part of disciplinary participation. This outcome requires a classroom where reasons receive attention and revision is recognized as learning. Without those conditions, producing several perspectives can remain a display of fluency that has little connection to the student's commitments or understanding.

VI. RISKS TO SELF IDENTITY

6.1 Dependence and unstable interpretations of achievement

Cognitive offloading reduces the internal demands of a task by using external resources (Risko & Gilbert, 2016). In university learning, the developmental consequences depend on which demands are transferred and what opportunities remain to practice. Delegating transcription can preserve attention for analysis. Delegating the selection and evaluation of evidence in every assignment removes occasions to develop those abilities. An identity risk follows when students encounter repeated success without acquiring a clear understanding of the contribution they can reproduce. The relevant concern is the organization of practice and attribution across tasks, which cannot be inferred from use frequency alone.

A student who experiences this gap may respond by concealing uncertainty. Good grades and polished outputs create expectations that later performance must sustain. Asking an elementary question can then seem inconsistent with the identity already presented to teachers or peers. Continued delegation becomes a way of maintaining that presentation. This is a theoretical feedback process connecting achievement, expectations, and avoidance. It explains why an intervention focused only on reducing tool access can miss the underlying difficulty. Students also need credible opportunities to acknowledge what they understand, identify what they need to learn, and experience progress without losing recognition.

The opposite interpretive error also deserves attention. Students can attribute every achievement to the system and discount their own work in setting goals, selecting material, evaluating suggestions, and revising the result. Such attribution can weaken confidence even when learning has occurred. Institutions should therefore make contributions discussable. A short explanation of a rejected recommendation, an error discovered in an output, or a revision justified with evidence reveals aspects of competence that a final product conceals. These practices provide a more concrete basis for self-evaluation and help students understand the abilities involved in assisted work.

6.2 Premature commitment and narrowing of expression

AI can supply clear answers at moments when students are still exploring values and aspirations. A career recommendation or personality description may organize uncertainty into a plausible story. The risk is premature closure when students treat that story as sufficient reason for commitment. Marcia's (1966) distinction between exploration and commitment provides the relevant developmental question. Has the student examined alternatives and their consequences, or adopted a readily available account because it appears confident and personalized? The same concern applies when generated arguments make it easy to take a position without encountering the experiences and disagreements through which commitments become informed.

Expression can narrow through repeated accommodation to generated conventions. Students may learn that an acceptable personal statement requires a dramatic turning point or that a professional voice requires particular vocabulary. These expectations can pressure them to reshape experience into recognizable templates. The issue is concrete when a narrative leaves out family responsibilities, uncertainty, or forms of knowledge that fit poorly within the template. Students then face a choice between accurate representation and anticipated approval. Institutional evaluation helps create this choice, especially when assessors reward fluent accounts of personal development without examining whether students can explain and defend the experiences they describe.

Language and cultural differences affect whose expression is regarded as credible. Liang et al. (2023) found bias against non-native English writing in the detectors they tested. This evidence is specific to those tools and samples, and it should guide evaluation of detection systems through independent testing. The identity consequence proposed here arises when an accusation leads students to doubt whether their own voice will receive recognition as legitimate academic work. Fair procedures require opportunities to present process evidence and respond to concerns. Students' standing within an academic community should be considered through evidence that can be examined and challenged.

6.3 Relational dependence and loss of control over personal accounts

Responsive dialogue can encourage disclosure because the interaction is accessible and feels less socially demanding. The resulting risk concerns a growing dependence on predictable affirmation or personalized responses when making sense of difficulties. Students may become less willing to enter conversations where another person has separate needs, remembers previous actions, or disagrees. Laestadius et al.'s (2024) analysis gives grounds for examining harmful dependence in specific relational systems. Extending that question to university life requires attention to students' existing relationships, reasons for use, and changes over time. A single report of emotional support gives little information about the direction of the longer process.

Commercial control introduces another vulnerability. Students can invest personal meaning in an interaction whose availability, memory, and response style are controlled elsewhere. Changes to the service can alter the continuity of an account that has become important to the user. The identity issue concerns dependence on an institutionally unaccountable setting for personal interpretation. Universities should ensure that students have accessible human relationships in which concerns can be discussed over time. Peer communities, academic advising, and counseling each supply different forms of continuity and responsibility; their educational value increases when AI-mediated interaction becomes a routine part of student life.

Personal data also shape the conditions for experimentation. Exploring an identity often requires room to change one's mind without every tentative statement becoming consequential in another setting. Prompts

about family conflict, sexuality, finances, or uncertainty can reveal more than an ordinary assignment. When data move across contexts, students can lose control over which account of themselves reaches which audience. This creates an institutional question about collection, retention, access, and secondary use. Consent should specify the purpose of processing and provide meaningful alternatives where participation in education would otherwise require disclosure. Control over personal records supports the practical freedom to explore.

6.4 Unequal opportunities and insecurity about the future

Students differ in the resources available for effective AI use. Access includes reliable tools and the knowledge needed to evaluate results, alongside time, disciplinary expertise, and support from other people. A fluent output can benefit a student who already knows how to check it more than one who lacks the relevant background. The identity implication is a possible divergence between groups: some gain opportunities for ambitious work, while others become dependent on outputs they cannot assess. This proposition should be tested by measuring assistance practices and learning conditions directly. Subscription status alone provides an incomplete account of the resources involved.

Institutional reactions can intensify these inequalities. Ambiguous rules create uncertainty about which assistance is acceptable and how disclosure will be judged. Students with access to informal advice can negotiate that uncertainty more easily. Others may avoid useful assistance or conceal routine use because they cannot predict the response. An identity cost arises when participation requires persistent uncertainty about whether one is regarded as a legitimate student. Universities can reduce this cost through explicit examples tied to learning objectives, consistent procedures, and opportunities to discuss borderline cases. Such clarity also improves the evidence available when genuine concerns about authorship arise.

Occupational uncertainty places additional pressure on identity. Students commit years of effort to fields whose practices may change substantially. Highly visible demonstrations of automation can invite broad conclusions about the value of that effort. Evidence of productivity effects on particular writing tasks, such as Noy and Zhang's (2023) findings, does not by itself determine the future organization of a profession. Students need opportunities to examine how tasks connect to responsibility, institutional trust, and social needs. Career guidance can then support revisable commitments grounded in actual work, reducing dependence on generalized predictions about replacement or permanent advantage.

These risks can reinforce one another across university life. A student uncertain about disciplinary competence may accept a narrow career recommendation because it promises a clear direction. Generated application materials can then present that direction as a settled identity, and favorable feedback may increase the cost of reconsideration. Alternatively, critical feedback and supportive advising can interrupt the sequence by making another interpretation available. This example illustrates why risks should be studied in relation to actual trajectories. Examining one attitude toward AI at a single moment cannot

establish how dependence, recognition, and commitment interact as students move between academic and professional settings.

VII. EDUCATIONAL AND INSTITUTIONAL RESPONSES

Universities can make the relationship between assistance and learning explicit at the level of individual tasks. An instructor can identify which decisions students are expected to practice and which forms of support are compatible with those objectives. For an argumentation assignment, generating a list of possible objections may be appropriate while outsourcing the evaluation of evidence defeats the purpose of the task. Students should be able to explain these distinctions in relation to their work. This creates a basis for responsible choice and gives them language for understanding why a difficult activity contributes to their development.

Assessment should gather evidence about both the quality of assisted work and the understanding students can carry into new situations. A course can combine an AI-supported project with a discussion of decisions and a later transfer task. These components answer different questions: what the student can achieve with resources, how the student judges those resources, and what learning persists. The combination is especially useful where final products reveal little about the process. It also gives students more accurate feedback for identity development. A strong assisted outcome and an uncertain explanation identify a learning need that a single grade would conceal.

Reflective activities should require concrete accounts of decisions. Students can identify an output they rejected, explain a factual correction, or describe how assistance changed their approach. Generic declarations that AI was useful offer little evidence of agency. A brief commentary tied to an actual decision is more informative and places less pressure on students to produce a polished autobiography of growth. Reflection can include unresolved questions about attribution or confidence. Teachers should evaluate the quality of examination and reasoning, allowing students to report difficulty without treating that report as evidence of weak character or lack of belonging.

AI literacy should include evaluation and social understanding alongside operational skill. Long and Magerko (2020) connect literacy to competencies for understanding, interacting with, and critically evaluating AI. Within university curricula, students can compare outputs against disciplinary evidence, inspect how prompt wording changes recommendations, and identify the purposes embedded in a system's design. They also need practice deciding when additional expertise is required. These activities connect literacy with self-identity by making students active interpreters of technologically mediated experience. The goal is a defensible account of what a system contributes and which responsibilities remain with the user and institution.

Universities should preserve settings where students encounter diverse forms of recognition. Seminars, laboratories, fieldwork, artistic practice, and community projects reveal abilities through sustained participation. Peers and teachers can respond to the reasoning, care, persistence, and judgment that a polished product leaves invisible. These settings also expose students to disagreement and reciprocal obligation. AI may support preparation for such encounters, but their educational value comes from participation with people who can question claims and observe development. Funding and workload arrangements matter here: meaningful recognition requires time for feedback and relationships, particularly for students who have limited access to support outside the university.

Governance should connect the handling of student data to avenues for challenge. Students need to know when an AI system contributes to a consequential decision and how to request an explanation or correction. Procurement should examine the intended educational purpose, data practices, accessibility, and evidence of differential performance across groups. Institutions should also provide workable alternatives when students have reasons to decline a service. These arrangements give practical meaning to agency by ensuring that students can question the systems that describe and evaluate them. Participation in governance can itself become an educational experience in collective responsibility for technological choices.

Curriculum design can make these commitments cumulative across a degree. Early courses can teach students to explain when assistance was useful and to check simple claims. Later courses can require judgments about ambiguous evidence, responsibility for collaborative work, and the consequences of a recommendation for other people. Final projects can bring those practices together through a substantive product and an account of the decisions behind it. A coordinated progression makes expectations easier to understand and reduces repeated negotiation of incompatible rules. It also gives students a record of development that they can use when explaining their abilities to themselves and future employers.

VIII. RESEARCH AGENDA

Research on identity requires designs that follow interpretation and action over time. Longitudinal studies can connect patterns of AI use with changes in commitments, self-efficacy, narrative accounts, and participation. Measures should distinguish the frequency of use from the activities delegated and the reasons for delegation. Interviews and learning records can identify whether an episode of assistance changes how students approach later difficulty. Baseline measures are necessary because students' prior confidence and uncertainty influence their choice of tools. Following transitions between courses and into employment would reveal whether immediate experiences become durable parts of self-understanding.

Experimental work can test proposed mechanisms by varying how assistance is organized. Students might receive direct answers, prompts for explanation, or support that gradually decreases, followed by comparable transfer activities. Outcome measures should include performance, attribution of success,

willingness to attempt a new task, and the ability to explain decisions. Different disciplines will require different indicators of competent judgment. Studies can also examine whether transparent assessment rules change disclosure and perceived legitimacy. These designs would identify which conditions connect assistance with ownership, providing a firmer basis for claims that a technology supports or undermines identity development.

Cross-cultural research should examine the social meaning of autonomy and commitment within actual institutions. Family responsibility, national labor markets, language hierarchies, and disciplinary traditions influence how students understand a worthwhile future. Chinese university contexts provide opportunities to study these relations without assuming that findings from other settings transfer unchanged. Comparative designs should investigate the same proposed mechanism while allowing its meaning to differ across groups. Research with multilingual students, disabled students, and students balancing paid work would also clarify how assistance interacts with existing barriers. Their experiences are necessary for evaluating who gains room to explore and who faces new constraints.

Research should also investigate how students recover from unsettling experiences. Discovering that a highly praised assignment contains generated errors can disrupt confidence and trust in assessment. A false accusation of misconduct can raise questions about belonging. A change in a conversational service can interrupt a relationship experienced as supportive. Following what students do afterward would clarify which institutional responses help them rebuild a credible account of their abilities and choices. Recovery is especially informative because it reveals the resources that support identity when routine expectations fail. It also directs attention to practices that universities can improve through advising, feedback, and fair review procedures.

IX. CONCLUSION

Artificial intelligence enters university students' self-identity through experiences of achievement, expression, recognition, and anticipation. Its developmental significance emerges when students interpret these experiences as evidence about their capacities and commitments. The same form of assistance can support exploration in one setting and encourage avoidance in another because attribution, assessment, and social relationships shape what students learn from it. This review connects those processes within an account of identity formation and identifies dependence, premature closure, unequal recognition, and constrained control over personal data as risks requiring specific investigation.

Universities can respond through tasks that make delegation discussable, assessments that reveal transferable understanding, and relationships that recognize students across time. These practices give students opportunities to judge assistance, acknowledge uncertainty, and revise commitments through experience. Institutional accountability also matters because students form identities within systems that

allocate attention and opportunity. The educational priority is to ensure that students can explain their decisions, understand the contributions behind their achievements, and participate in shaping the conditions under which they are evaluated. Those capacities support self-authorship as AI becomes part of everyday academic and professional life.

References

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*(5), 469–480. https://doi.org/10.1037/0003-066X.55.5.469

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 52*, 1–26. https://doi.org/10.1146/annurev.psych.52.1.1

Bender, E. M., Gebru, T., McMillan-Major, A., & Shmitchell, S. (2021). On the dangers of stochastic parrots: Can language models be too big? In *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency* (pp. 610–623). Association for Computing Machinery. https://doi.org/10.1145/3442188.3445922

boyd, d. m., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication, 13*(1), 210–230. https://doi.org/10.1111/j.1083-6101.2007.00393.x

Bucher, T. (2017). The algorithmic imaginary: Exploring the ordinary affects of Facebook algorithms. *Information, Communication & Society, 20*(1), 30–44. https://doi.org/10.1080/1369118X.2016.1154086

Chan, C. K. Y., & Hu, W. (2023). Students' voices on generative AI: Perceptions, benefits, and challenges in higher education. *International Journal of Educational Technology in Higher Education, 20*, Article 43. https://doi.org/10.1186/s41239-023-00411-8

Croes, E. A. J., & Antheunis, M. L. (2021). Can we be friends with Mitsuku? A longitudinal study on the process of relationship formation between humans and a social chatbot. *Journal of Social and Personal Relationships, 38*(1), 279–300. https://doi.org/10.1177/0265407520959463

Darvishi, A., Khosravi, H., Sadiq, S., Gašević, D., & Siemens, G. (2024). Impact of AI assistance on student agency. *Computers & Education, 210*, Article 104967. https://doi.org/10.1016/j.compedu.2023.104967

Doshi, A. R., & Hauser, O. P. (2024). Generative AI enhances individual creativity but reduces the collective diversity of novel content. *Science Advances, 10*(28), Article eadn5290. https://doi.org/10.1126/sciadv.adn5290

Erikson, E. H. (1968). *Identity: Youth and crisis*. W. W. Norton.

Giddens, A. (1991). *Modernity and self-identity: Self and society in the late modern age*. Stanford University Press.

Laestadius, L., Bishop, A., Gonzalez, M., Illenčík, D., & Campos-Castillo, C. (2024). Too human and not human enough: A grounded theory analysis of mental health harms from emotional dependence on the social chatbot Replika. *New Media & Society, 26*(10), 5923–5941. https://doi.org/10.1177/14614448221142007

Liang, W., Yuksekgonul, M., Mao, Y., Wu, E., & Zou, J. (2023). GPT detectors are biased against non-native English writers. *Patterns, 4*(7), Article 100779. https://doi.org/10.1016/j.patter.2023.100779

Long, D., & Magerko, B. (2020). What is AI literacy? Competencies and design considerations. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems* (pp. 1–16). Association for Computing Machinery. https://doi.org/10.1145/3313831.3376727

Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology, 3*(5), 551–558. https://doi.org/10.1037/h0023281

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist, 41*(9), 954–969. https://doi.org/10.1037/0003-066X.41.9.954

McAdams, D. P., & McLean, K. C. (2013). Narrative identity. *Current Directions in Psychological Science, 22*(3), 233–238. https://doi.org/10.1177/0963721413475622

Noble, S. U. (2018). *Algorithms of oppression: How search engines reinforce racism*. New York University Press.

Noy, S., & Zhang, W. (2023). Experimental evidence on the productivity effects of generative artificial intelligence. *Science, 381*(6654), 187–192. https://doi.org/10.1126/science.adh2586

Risko, E. F., & Gilbert, S. J. (2016). Cognitive offloading. *Trends in Cognitive Sciences, 20*(9), 676–688. https://doi.org/10.1016/j.tics.2016.07.002

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68–78. https://doi.org/10.1037/0003-066X.55.1.68

Turkle, S. (1995). *Life on the screen: Identity in the age of the Internet.* Simon & Schuster.

Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education: Where are the educators? *International Journal of Educational Technology in Higher Education, 16*, Article 39. https://doi.org/10.1186/s41239-019-0171-0