



Learning Agility Among University Students in the Era of Digital Transformation: A Descriptive Study at Universitas Pendidikan Indonesia, Bandung

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Abstract. Learning agility, defined as the ability and willingness to learn from experience and apply that learning to new and challenging situations, has emerged as a critical competency for students navigating an increasingly digital academic environment. This study describes the level of learning agility among undergraduate students at Universitas Pendidikan Indonesia (UPI), Bandung, in the context of digital transformation. A quantitative descriptive approach was employed with 250 students selected through proportionate stratified random sampling. Data were collected using a structured questionnaire adapted from the Learning Agility Assessment Inventory developed by De Meuse, Dai, and Hallenbeck (2010), covering five dimensions: mental agility, people agility, change agility, results agility, and self-awareness. The findings indicate that all five dimensions fall within the moderate category, with mean scores ranging from 3.03 to 3.29 on a five-point scale. Self-awareness obtained the highest score ($M = 3.29$), while mental agility recorded the lowest ($M = 3.03$). Notably, tolerance for ambiguity, a core indicator of mental agility, was the only item to fall below the moderate threshold ($M = 2.52$), suggesting that students' capacity to navigate uncertain and complex situations remains underdeveloped. These results indicate that while students at UPI demonstrate a foundational level of adaptive learning capacity, targeted interventions are needed, particularly in developing cognitive flexibility and tolerance for ambiguity. This study contributes to the growing literature on student readiness in the digital era and offers practical implications for curriculum development and student support programs aligned with SDG 4 Quality Education.

Keywords: Digital Transformation, Higher Education, Learning Agility, SDG 4, Quality Education.

1 Introduction

Digital transformation has reshaped nearly every sector, and higher education is no exception. Universities today are no longer just knowledge repositories. They are expected to produce graduates who can navigate uncertainty, adapt to new tools and contexts, and keep learning long after commencement. Whether that expectation is

realistic depends, in part, on how ready students actually are to learn in this kind of environment. Benavides et al. [1] observed that digital transformation in higher education institutions goes beyond the adoption of technology; it demands that learners develop the capacity to think critically and adapt continuously to shifting requirements. This study examines learning agility among undergraduate students at Universitas Pendidikan Indonesia (UPI), Bandung. Learning agility, broadly understood as the ability to learn from experience and apply that learning to new and unfamiliar situations, has received growing attention in organizational and educational research [2]. Lominger International originally developed the construct in a leadership context [3], but its relevance to higher education has become increasingly apparent as universities grapple with rapid technological change and the demands of a knowledge-intensive economy.

The concept covers five interrelated dimensions. Mental agility refers to how well someone handles complexity and thinks through difficult problems. People agility describes the capacity to work effectively with diverse others. Change agility captures an individual's openness to experimentation and comfort with ambiguity. Results agility reflects the ability to deliver outcomes under challenging conditions. Self-awareness involves an accurate understanding of one's own strengths, limitations, and impact on others [2, 4]. Together, these dimensions paint a picture of a learner who is not just competent within a fixed domain but capable of growing beyond it.

Why does this matter now? The Indonesian government's commitment to SDG 4, Quality Education, has placed renewed pressure on institutions to develop graduates who are not only technically prepared but adaptable [5]. UPI, as one of Indonesia's leading education universities, occupies a particular position in this conversation. Its students will become teachers, counselors, and educational leaders. If they struggle with change agility or lack self-awareness, those gaps do not stay with them; they carry into classrooms and institutions. Knight et al. [6] argued that employability increasingly depends on dispositions rather than fixed knowledge stocks, a framing directly relevant to learning agility as an educational outcome.

Existing research on learning agility has concentrated heavily on corporate and managerial populations [7,8]. Studies involving university students remain comparatively limited, and those set in Indonesian higher education are scarcer still [9]. This study aims to fill part of that gap. Using a descriptive approach, it maps the current profile of learning agility across UPI's student population and examines how each dimension is distributed. The findings are intended to inform both curriculum design and student development programs at a moment when the pressure to produce adaptable graduates has rarely been higher.

2 Literature Review

2.1 Learning Agility: Origins and Core Construct

Learning agility was first articulated by Lombardo & Eichinger [3] as a predictor of leadership potential, defined as the willingness and ability to learn from experience and apply those lessons in first-time or unfamiliar situations. The construct emerged from decades of research at the Center for Creative Leadership, where repeated observations

showed that high-performing leaders shared not a fixed set of skills but a capacity to keep developing when conditions changed. This origin matters because it explains why learning agility is not simply another word for intelligence or academic achievement. A student can score well on every exam and still struggle when the context shifts in ways no textbook anticipated.

De Meuse et al. [2] later refined the construct and proposed the five-dimension framework that subsequent research has largely adopted. Each dimension addresses a distinct aspect of how a person learns and performs under novel conditions. Mental agility covers comfort with complexity and the ability to think through problems from multiple angles. People agility describes how well someone reads others, manages differences, and works across varied social contexts. Change agility reflects openness to experimentation and a genuine appetite for exploring new approaches rather than defaulting to familiar routines. Results agility captures the capacity to deliver outcomes under pressure, often by finding unconventional paths when conventional ones are blocked. Self-awareness involves an honest and calibrated understanding of one's own strengths, blind spots, and effect on others. Taken together, the five dimensions describe a learner who is not frozen by uncertainty but energized by it.

2.2 Learning Agility in Higher Education

Most early research on learning agility was conducted in corporate settings, tracking whether high-agility employees advanced faster, handled stretch assignments better, or proved more promotable over time. The evidence from those studies was reasonably consistent: learning agility predicted performance in ways that traditional assessments of cognitive ability did not fully capture [7]. The implication for universities was not immediately obvious to researchers, but practitioners in student development began drawing connections.

The shift became more explicit as higher education started grappling with its own version of the same problem. Curricula designed for stable professional contexts were producing graduates who arrived in workplaces that had already changed. Knight et al. [6] observed that employability increasingly depended on dispositions rather than knowledge stocks, a framing that aligns closely with what learning agility describes. More recent work extended this argument explicitly, proposing that universities should treat learning agility as both a developmental outcome and a dimension of student readiness for lifelong learning [10, 11].

Within the Indonesian context, research on learning agility in higher education remains limited. Most available studies are confined to organizational behavior or human resource development literature and do not examine student populations directly. This is a meaningful gap, given that Indonesian universities are operating under explicit national mandates to align graduate competencies with both industry 4.0 demands and the country's obligations under SDG 4.

2.3 Digital Transformation and Higher Education

Digital transformation in higher education refers to more than the adoption of new tools. It involves a fundamental rethinking of how institutions deliver learning, how students engage with knowledge, and what it means to be prepared for a digitally mediated

professional environment [1]. The COVID-19 pandemic accelerated a transition that was already underway, compressing years of gradual change into a period of months and exposing large variation in how ready both institutions and students were to adapt. Prensky [12] concept of digital natives framed early discussions, suggesting that younger generations had an inherent advantage in digital environments. That framing has since been contested. Kirschner & De Bruyckere [13] reviewed the evidence and found that digital familiarity does not automatically translate into effective digital learning. Students may know how to use a smartphone but still struggle with evaluating online sources, managing asynchronous workflows, or collaborating in virtual environments. The implication is that digital transformation creates a demand for learning agility precisely because it introduces conditions that are genuinely novel, where prior experience provides only partial guidance.

Selwyn [14] made a related point: the integration of technology into education does not resolve fundamental questions about pedagogy; it often intensifies them. Universities that respond to digital transformation primarily by digitizing existing practices are unlikely to produce the adaptable graduates that transformation demands. What changes is the context in which learning happens. What has to change alongside it is students' capacity to keep learning as that context keeps shifting.

2.4 SDG 4 and the Demand for Adaptive Learners

Sustainable Development Goal 4 calls for inclusive and equitable quality education and lifelong learning opportunities for all. For Indonesian higher education, this translates into specific obligations: ensuring that university graduates are not only credentialed but genuinely equipped for continued growth. The Indonesian Ministry of Education's *Merdeka Belajar Kampus Merdeka* policy reflects a similar logic, emphasizing flexibility, interdisciplinary exposure, and student agency as pathways toward more adaptable graduates.

Learning agility connects to SDG 4 in a direct way. A quality education, in the SDG framing, is not one that transfers a fixed body of knowledge efficiently. It is one that builds the capacity for lifelong learning, for navigating unfamiliar situations, and for contributing productively to communities facing change. These are not incidental outcomes. They are the point. Students who score high on change agility and results agility are, in a meaningful sense, closer to what SDG 4 envisions than students who are knowledgeable but brittle under novel conditions.

Several researchers have drawn this connection explicitly. Singh & Bhowmick [15] argued that agility-oriented education models are better aligned with the demands of sustainable development than traditional competency-based frameworks. Reimers [16] extended the argument in the context of UNESCO's work on education for sustainable development, noting that adaptive capacity is among the most important outcomes a university can cultivate. The evidence base for this claim is still developing, but the direction of the argument is consistent.

2.5 Theoretical Framework

This study adopts the learning agility framework developed by De Meuse et al. [2] and operationalized through the Learning Agility Assessment Inventory (LAAI). The five

dimensions, Mental Agility, People Agility, Change Agility, Results Agility, and Self-Awareness, provide the structural basis for measurement. The framework was selected over alternative constructs such as adaptability, resilience, or growth mindset not because those constructs are unrelated but because learning agility integrates them into a coherent model with an established measurement tradition.

The broader conceptual context draws on Mezirow [17] transformative learning theory, which holds that significant learning often involves revising the frames through which we interpret experience, and on Kolb [18] experiential learning cycle, which treats reflection on experience as a primary driver of development. Digital transformation provides the contextual pressure. Learning agility describes the individual capacity to respond to it. SDG 4 articulates why that capacity matters at scale.

What is notably absent from the existing literature is a descriptive account of where university students in Indonesia actually stand across these five dimensions. Before interventions can be designed or policies refined, that baseline needs to exist. This study attempts to establish it.

3 Methods

3.1 Research Design

This study used a quantitative descriptive design. The aim was not to test a hypothesis or establish causal relationships but to map the current profile of learning agility among undergraduate students at Universitas Pendidikan Indonesia (UPI), Bandung. Descriptive research of this kind is appropriate when a construct has not been previously measured in a given population and when the priority is establishing a reliable baseline rather than explaining variance [19]. Given the absence of prior data on learning agility at Indonesian universities, a descriptive approach was the logical starting point.

3.2 Population and Sample

The population consisted of undergraduate students across faculties at UPI. A total of 250 students participated in this study. Participants were selected using proportionate stratified random sampling, with strata defined by faculty affiliation to ensure representation across academic disciplines. This sampling strategy was chosen because learning agility may vary systematically across disciplinary contexts, and a purely random sample could have underrepresented smaller faculties. The final sample of 250 was determined based on the recommendation that samples of this size provide adequate statistical stability for descriptive analysis, including reliable estimation of means and standard deviations at the dimension level [20].

Inclusion criteria required that participants be enrolled as full-time undergraduate students at the time of data collection and that they complete all items in the instrument. Partially completed responses were excluded from the analysis.

3.3 Instrument

Learning agility was measured using the Learning Agility Assessment Inventory (LAAI), adapted from the framework developed by De Meuse et al. [2] and subsequently operationalized by Eichinger et al. [4]. The instrument covers five dimensions: Mental Agility, People Agility, Change Agility, Results Agility, and Self-Awareness. Each dimension is measured through a set of items rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Before data collection, the instrument was adapted for the Indonesian university context. Adaptation involved translation into Bahasa Indonesia by two bilingual researchers, back-translation by an independent translator, and a review of item content for cultural and contextual appropriateness. A pilot test with 30 students outside the main sample was conducted to check item clarity and internal consistency. Cronbach's alpha coefficients across the five dimensions ranged from 0.71 to 0.84, which meets the commonly accepted threshold of 0.70 for research instruments [21]. Content validity was assessed through expert review by three faculty members with backgrounds in educational psychology and human resource development.

3.4 Data Collection

Data were collected during the second semester of the 2023/2024 academic year. The questionnaire was administered online via Google Forms and distributed to sampled students through faculty coordinators. Participation was voluntary, and no incentives were offered. Students were informed of the study's purpose and assured of anonymity before completing the instrument. Response time averaged approximately 15 to 20 minutes.

4 Results and Discussion

4.1 Profile of Learning Agility Among UPI Students

Overall, the learning agility of students at the Indonesia University of Education falls into the moderate category (descriptive analysis categories in Tabel 1). Across the five dimensions measured, average scores ranged from 3.03 to 3.29, all falling within the range of 2.61 to 3.40 (see Table 2). No dimension reached the high category, nor did any fall into the low category. This means that students demonstrate sufficient adaptive learning capacity, but it is not yet optimal, particularly when considered in light of the demands of the digital transformation era, which requires rapid responses to change.

Table 1. Descriptive Analysis Categories

Value Range	Category
1.00 - 1.80	Very Low
1.81 - 2.60	Low
2.61 - 3.40	Moderate
3.41 - 4.20	High
4.21 - 5.00	Very High

Table 2. Average Scores for the Learning Agility Variable by Dimension

Dimension	Mean	Category
Mental Agility	3,0251	Moderate
People Agility	3,1499	Moderate
Change Agility	3,1737	Moderate
Results Agility	3,1898	Moderate
Self-Awareness	3,2932	Moderate

Self-Awareness received the highest score, while Mental Agility received the lowest. The difference between the two is not very large (0.27 points), but the pattern is consistent with the findings of De Meuse et al. [2], who found that self-awareness tends to be easier to develop in a formal educational context compared to the complex thinking skills that form the core of mental agility.

Mental Agility ($M = 3,0251$)

Mental agility received the lowest score among the five dimensions. Of the four indicators measured, the item regarding comfort in dealing with ambiguous problems received the lowest average score (2.52), which falls into the “low” category. This contrasts with the other three items, which ranged from 3.11 to 3.25.

This pattern warrants closer examination. Students are relatively comfortable thinking from various perspectives and shifting their viewpoints when encountering new arguments, but when there is no clear answer, discomfort sets in. De Meuse et al. [2] define mental agility as an individual’s comfort in dealing with complexity and ambiguity, including the ability to explain their thought processes to others. With the lowest score actually on the ambiguity indicator, these findings suggest that the most fundamental aspect of mental agility has not yet been adequately developed. In the context of digital transformation characterized by high uncertainty and problems that do not always have a single solution this weakness in tolerance for ambiguity can become a real obstacle. Kirschner & De Bruyckere [13] warn that adaptive cognitive abilities do not automatically develop simply because a person is exposed to technology; they need to be explicitly trained.

People Agility ($M = 3,1499$)

The score for people agility is slightly higher than that for mental agility, although it remains in the moderate category. The highest-scoring indicator in this dimension is the ability to actively seek feedback from others (3.24), while the indicator for the ability to communicate and collaborate with people who hold different viewpoints received the lowest score (3.09).

This finding is interesting because seeking input and truly collaborating with people who hold different viewpoints are two distinct things. Students appear to be more open to receiving feedback within established relationships than they are to working effectively with people outside their social circles. In the literature on learning agility, the ability to work across differences is considered one of the strongest predictors of success in an ever-changing work environment [7]. Gravett & Caldwell [8] also emphasize that high people agility requires not only openness to feedback but also the ability to manage differing perspectives productively.

Change Agility (M = 3,1737)

Change agility received the third-highest score. Three of the four indicators fell within the range of 3.15 to 3.27, but the indicator regarding the ability to adapt when academic policies or the curriculum change scored an average of only 3.00, right at the lower limit of the “moderate” category.

Students are relatively open to change in theory; they view change as an opportunity and are willing to try new methods. However, when change comes from outside their control such as academic policies or curriculum restructuring their adaptation scores drop. This pattern is relevant in the context of implementing the Merdeka Belajar Kampus Merdeka (MBKM) policy, which requires students to adapt to a learning system that is far more flexible and different from conventional models [22]. The fact that adaptation scores to policy changes are the lowest in this dimension indicates that there is still a gap between conceptual openness to change and practical readiness to face it.

Results Agility (M = 3,1898)

Results agility received the second-highest score. Of the four indicators, the drive to complete tasks with the highest quality received the highest score (3.34), while the ability to perform well under pressure scored exactly 3.00.

In other words, students are highly motivated to excel under normal conditions, but their performance under pressure is still not strong. The gap between the desire to do one's best and the actual ability to remain productive when resources are limited or deadlines are very tight is a relevant area for student development programs. De Meuse et al. [2] define results agility precisely as an individual's ability to perform under less-than-ideal conditions, rather than ideal ones; thus, these findings indicate that this dimension has not yet fully developed among UPI students.

Self-Awareness (M = 3,2932)

Self-awareness received the highest score among the five dimensions. Two indicators even approached the threshold for the “high” category: openness to feedback (3.39) and awareness of how emotions and attitudes influence academic performance (3.38).

The relatively higher scores on this dimension are consistent with the characteristics of students in formal educational settings, where self-reflection and acceptance of feedback from instructors are part of the academic routine. Mezirow [17] argues that educational environments that encourage structured critical reflection foster greater self-awareness in learners, as this process consistently requires individuals to reevaluate their frameworks of thought. UPI, as an educational institution focused on training educators, likely contributes to these scores, given that its curriculum emphasizes professional reflection.

5 Discussion

5.1 Implications for Digital Transformation and SDG 4

Overall, the learning agility profiles of UPI students reveal uneven capabilities. The most demanding cognitive dimension mental agility, as measured by tolerance for ambiguity is the weakest. Meanwhile, the most personal and reflective dimension self-awareness is actually the strongest.

This pattern has practical implications. Digital transformation does not merely require students to be self-aware or open to feedback; it demands the ability to think amid uncertainty, collaborate with people who are very different, and remain productive when conditions change suddenly. If self-awareness is the strongest dimension and mental agility is the weakest, then students may know they need to grow but lack the cognitive capacity to actually do so in complex situations.

This is relevant to SDG 4, which emphasizes quality education not merely as the transfer of knowledge but as the development of lifelong learning capacity [5]. Reimers [16] argues that adaptability is one of the most important educational outcomes that higher education institutions can produce. These findings suggest that moderate scores across all dimensions of learning agility indicate there is still significant room for both curricular and non-curricular interventions at UPI.

The MBKM program, which promotes off-campus learning experiences, theoretically has the potential to enhance change agility and people agility, as students are exposed to contexts, people, and problems different from their usual academic circles [22]. Whether this potential has been realized in students' learning agility profiles is a question worthy of further research.

6 Conclusion

This study aims to describe the learning agility profiles of students at the Indonesia University of Education (UPI) in the era of digital transformation. Based on a descriptive analysis of 250 students, it was found that the overall learning agility of UPI

students falls into the moderate category, with average scores across the five dimensions ranging from 3.03 to 3.29.

Of the five dimensions measured, self-awareness received the highest score ($M = 3.29$), followed by results agility ($M = 3.19$), change agility ($M = 3.17$), people agility ($M = 3.15$), and mental agility, which was the lowest ($M = 3.03$). This pattern indicates that UPI students are relatively stronger in dimensions that are reflective and personal in nature, but weaker in dimensions that require high cognitive abilities to deal with complexity and ambiguity.

The finding that warrants the most attention is the low score for tolerance of ambiguity within the mental agility dimension ($M = 2.52$), the only indicator categorized as low across the entire instrument. This is not a minor detail. The ability to think amid uncertainty is precisely the competency most needed in an environment that is constantly changing due to digital transformation. The fact that this indicator is the weakest point signals that the curriculum needs to provide more opportunities for students to grapple with problems that do not have a single answer.

This study has several limitations. The descriptive design does not allow for testing causal relationships between learning agility and other variables such as academic achievement, involvement in the MBKM program, or academic background. Additionally, the use of self-reports has the potential to introduce social desirability bias, where students tend to rate themselves more positively than their actual performance.

Based on these findings, several considerations arise. First, student development programs at UPI need to pay special attention to strengthening mental agility, particularly through open-ended, problem-based learning approaches that lack definitive solutions. Second, people agility specifically the ability to collaborate across differences needs to be facilitated more systematically, for example through interdisciplinary projects or activities involving interaction with diverse communities. Third, the results of this study can serve as a baseline for UPI to evaluate the extent to which the ongoing MBKM program contributes to improving students' learning agility.

For future research, a comparative study should be conducted between students who actively participate in the MBKM program and those who do not, to test whether off-campus learning experiences actually result in measurable differences in learning agility profiles. Additionally, research using a mixed-methods approach will help explain why tolerance for ambiguity remains a consistent weakness and identify which interventions are most effective in addressing it.

Acknowledgments. This work was supported by a research/community service grant from Universitas Pendidikan Indonesia under contract number 572/UN40.F7/PT.01.01/2026.

Disclosure of Interests. The authors have no competing interests to declare that are relevant to the content of this article.

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