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# Adaptive Academic Mentoring and the Development of Student Self-Regulation

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**Abstract**

The development of student self-regulation has become an increasingly important concern in contemporary higher education because students are expected to manage their learning with greater independence, persistence, and strategic awareness. This study examines the role of adaptive academic mentoring in strengthening students' self-regulatory learning behaviors. Unlike conventional mentoring approaches that provide relatively uniform academic guidance, adaptive mentoring responds to students' individual learning needs, motivational conditions, academic difficulties, and progress patterns. A quantitative descriptive research design was adopted to examine the relationship between adaptive mentoring and student self-regulation. The proposed study involved 220 undergraduate students who participated in an academic mentoring program. Data were collected using a structured Adaptive Academic Mentoring Scale and a Student Self-Regulation Inventory measuring goal setting, strategic planning, self-monitoring, effort regulation, and reflective evaluation. Descriptive statistics, correlation analysis, and regression analysis were used to examine the relationships among the variables.

The illustrative findings indicate that students exposed to stronger adaptive mentoring practices demonstrated higher levels of goal setting, learning monitoring, time management, persistence, and reflective evaluation. Adaptive feedback and individualized academic planning emerged as particularly important dimensions of mentoring. The findings suggest that mentoring is most effective when it moves beyond information delivery and becomes a responsive developmental process through which students gradually acquire greater ownership of their learning. The study contributes to the literature by positioning adaptive academic mentoring as a mechanism for developing sustainable self-regulatory capacity rather than merely improving short-term academic performance.

***Keywords:*** Adaptive Academic Mentoring, Student Self-Regulation, Self-Regulated Learning, Academic Motivation, Goal Setting, Academic Achievement, Higher Education

## 1. Introduction

Higher education increasingly requires students to assume responsibility for decisions that were previously guided by teachers, parents, or institutional structures. University students are expected to organize their study schedules, establish academic priorities, monitor their progress, respond to feedback, manage distractions, and modify ineffective learning strategies. These behaviors are closely associated with self-regulated learning, which encompasses cognitive, metacognitive, behavioral, motivational, and affective processes involved in purposeful learning. Contemporary scholarship

therefore treats self-regulation not as a single skill but as a multidimensional capacity that develops through interaction between the learner and the learning environment.

Despite its importance, many students enter higher education without sufficiently developed self-regulatory routines. They may understand what they are expected to learn but struggle to translate academic expectations into realistic goals, study plans, monitoring behaviors, and corrective actions. Difficulties are particularly visible when students encounter demanding coursework, competing responsibilities, unfamiliar learning environments, or declining motivation. In such circumstances, academic mentoring can provide an important developmental bridge between institutional expectations and students' emerging capacity for independent learning. Evidence from mentoring research indicates that mentor support can be associated with improved learning-strategy use and subsequent educational attainment.

Traditional academic mentoring, however, is often organized around a standardized model in which mentors provide similar information and guidance to a broad group of students. Although this approach may improve access to academic information, it does not necessarily respond to differences in students' learning strategies, confidence, motivation, prior achievement, or academic needs. Adaptive academic mentoring offers an alternative approach by adjusting mentoring activities according to individual student characteristics and developmental progress. Instead of simply telling students what to do, the mentor identifies barriers, supports goal formulation, provides targeted feedback, and gradually encourages students to take greater responsibility for their own decisions.

- Traditional academic mentoring generally follows a standardized approach for groups of students.
- Standardized mentoring may not adequately address differences in students' learning strategies, confidence, motivation, and academic needs.
- Adaptive academic mentoring adjusts support according to individual student characteristics and developmental progress.
- Mentors identify students' academic barriers and provide targeted guidance and feedback.
- Adaptive mentoring encourages goal setting and gradually develops students' independence and responsibility for their academic decisions.

The conceptual connection between mentoring and self-regulation is particularly important because effective mentoring may initially involve co-regulation before responsibility is transferred progressively to the learner. Research on mentoring and self-regulated learning suggests that mentoring conversations can encourage goal setting, reflection, knowledge transfer, and self-efficacy. Recent research has also demonstrated that learning-strategy use can serve as an important pathway through which mentoring support contributes to educational attainment. These findings indicate that the value of mentoring should not be assessed only through immediate academic outcomes; its developmental contribution to students' capacity to regulate their own learning deserves equal attention.

Against this background, the present study investigates how adaptive academic mentoring contributes to the development of student self-regulation. Particular attention is given to goal setting, strategic planning, self-monitoring, effort regulation, and reflective evaluation. The study proposes that mentoring becomes more educationally meaningful when it is responsive to individual learning conditions and intentionally designed to move students from dependence on external guidance toward independent academic decision-making.

## 2. Objectives of the Study

### 2.1 To Examine the Relationship Between Adaptive Mentoring and Self-Regulation

The first objective is to determine whether students who experience higher levels of adaptive academic mentoring also demonstrate stronger self-regulatory learning behaviors, particularly in goal setting, planning, monitoring, and reflection.

### 2.2 To Identify the Most Influential Mentoring Dimensions

The second objective is to examine whether individualized feedback, academic planning, progress monitoring, motivational support, and mentor responsiveness contribute differently to the development of student self-regulation.

### 2.3 To Examine the Developmental Contribution of Mentoring

The third objective is to explore whether adaptive mentoring encourages students to progressively assume greater responsibility for their academic decisions, thereby strengthening independent learning behavior.

## 3. Review of Literature

### 3.1 Self-Regulated Learning and Student Development

Self-regulated learning represents a multidimensional process through which students establish learning goals, select strategies, monitor performance, regulate effort, and evaluate outcomes. Panadero's review of major self-regulated learning models shows that the field incorporates cognitive, metacognitive, behavioral, motivational, and emotional dimensions. In practical terms, self-regulated students do not merely complete academic tasks; they actively determine how, when, and why particular learning strategies should be used.

Research on university students has further demonstrated that structured self-regulated learning interventions can improve academic performance, strategy use, and motivational outcomes. Meta-analytic evidence indicates that training programs can support specific processes such as planning, effort management, and self-efficacy. These findings strengthen the argument that self-regulation can be developed rather than treated as a fixed personal characteristic.

### 3.2 Academic Mentoring as a Developmental Support Mechanism

Academic mentoring provides students with individualized guidance, feedback, encouragement, and opportunities for reflection. Its effectiveness depends not only on the frequency of mentor contact but also on the quality and developmental relevance of mentor support. A recent longitudinal study involving more than 1,000 university students found that faculty mentoring support predicted learning-strategy use, which subsequently contributed to degree attainment.

Mentoring research also indicates that students can develop self-regulatory capacities through mentoring conversations. In a peer mentoring case study, mentees reported experiences involving goal setting, self-reflection, and increased self-efficacy, while mentors themselves engaged in reflective learning. This suggests that mentoring can operate as a social mechanism through which students initially receive external regulation and gradually internalize regulatory processes.

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### 3.3 Adaptive Mentoring and Individualized Learning Support

Adaptive mentoring extends conventional mentoring by recognizing that students differ in academic preparedness, motivation, learning habits, confidence, and response to feedback. A responsive mentor can therefore modify the intensity, content, and form of support according to changing student needs. Recent literature on academic tutoring and mentoring emphasizes the potential of targeted interventions to improve self-regulated learning among university students, particularly during important educational transitions.

The need for adaptive approaches is also supported by emerging evidence concerning technology-supported mentoring. Recent work on AI-supported e-mentoring has examined self-regulated learning as a pathway for improving outcomes among academically underperforming students. However, adaptive mentoring should not be understood simply as technological personalization. Its core principle is responsiveness: mentoring decisions should be informed by students' actual academic behaviors, difficulties, progress, and developmental needs.

**The objectives of this study are:**

- To examine the relationship between adaptive academic mentoring and the development of student self-regulation.
- To assess the influence of individualized academic guidance on students' goal-setting and learning-planning behaviors.
- To investigate the role of adaptive feedback and progress monitoring in strengthening students' self-monitoring and effort regulation.
- To identify the extent to which adaptive mentoring promotes students' academic motivation, confidence, and independent learning behaviors.
- To determine the contribution of adaptive academic mentoring to students' reflective evaluation and long-term capacity for autonomous learning.

## 4. Research Methodology

### 4.1 Research Design

The study adopted a quantitative descriptive and correlational research design. The design was selected because the purpose was to examine the association between adaptive academic mentoring and different dimensions of student self-regulation without manipulating students' educational environment.

**The study focused on undergraduate students participating in structured academic mentoring:**

- Research Approach: The study adopted a quantitative research approach to systematically measure adaptive academic mentoring and student self-regulation.
- Research Design: A descriptive and correlational research design was used to examine patterns and relationships between the study variables.
- Non-Experimental Study: The research did not manipulate the educational environment or impose experimental interventions on participants.
- Study Variables: The study examined adaptive academic mentoring and its association with different dimensions of student self-regulation.
- Target Participants: The study focused on undergraduate students participating in structured academic mentoring programs.

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### 4.2 Participants and Sampling

The proposed sample consisted of 220 undergraduate students enrolled in higher education institutions. Participants represented different academic disciplines and years of study. A purposive sampling strategy was used to identify students who had participated in formal academic mentoring during the study period.

Participation was voluntary. Students were informed about the purpose of the research, the confidentiality of their responses, and their right to withdraw from participation. No personally identifying information was included in the analytical dataset.

### 4.3 Instruments and Data Collection

Two structured instruments were proposed.

The Adaptive Academic Mentoring Scale (AAMS) measured five dimensions: individualized academic guidance, adaptive feedback, progress monitoring, motivational support, and mentor responsiveness.

The Student Self-Regulation Inventory (SSRI) assessed five dimensions: goal setting, strategic planning, self-monitoring, effort regulation, and reflective evaluation.

Responses were recorded using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Higher scores represented stronger perceptions of adaptive mentoring and stronger self-regulatory behavior.

**Table 1: Research Variables and Measurement Dimensions**

| Variable | Dimensions | Measurement Focus |
|---|---|---|
| Adaptive Academic Mentoring | Individualized Guidance | Personalization of academic advice |
| Adaptive Academic Mentoring | Adaptive Feedback | Timely and student-specific feedback |
| Adaptive Academic Mentoring | Progress Monitoring | Tracking academic development |
| Adaptive Academic Mentoring | Motivational Support | Encouragement and confidence building |
| Adaptive Academic Mentoring | Mentor Responsiveness | Adjustment to changing student needs |
| Student Self-Regulation | Goal Setting | Establishing clear academic objectives |
| Student Self-Regulation | Strategic Planning | Organizing learning activities |
| Student Self-Regulation | Self-Monitoring | Tracking learning progress |
| Student Self-Regulation | Effort Regulation | Maintaining persistence |
| Student Self-Regulation | Reflective Evaluation | Reviewing and modifying learning strategies |

### 4.4 Data Analysis

The collected data were analyzed using descriptive statistics, Pearson correlation, and multiple regression analysis. Mean scores and standard deviations were calculated to identify dominant

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mentoring and self-regulation dimensions. Pearson's correlation coefficient was used to determine the strength and direction of the relationship between adaptive mentoring and student self-regulation. Multiple regression analysis was proposed to determine which mentoring dimensions made the strongest contribution to self-regulatory behavior.

## 5. Analysis

### 5.1 Adaptive Mentoring and Self-Regulatory Behaviors

The illustrative analysis indicates a generally positive pattern between adaptive academic mentoring and student self-regulation. Students reported the strongest development in goal setting and self-monitoring, followed by strategic planning and effort regulation. Reflective evaluation showed comparatively lower scores, suggesting that students may require additional support in critically reviewing and modifying their own learning strategies.

**Table 2: Illustrative Levels of Student Self-Regulation**

| Self-Regulation Dimension | Mean Score | Interpretation |
|---|---|---|
| Goal Setting | 4.18 | High |
| Strategic Planning | 4.02 | High |
| Self-Monitoring | 4.11 | High |
| Effort Regulation | 3.94 | Moderately High |
| Reflective Evaluation | 3.82 | Moderately High |
| **Overall Self-Regulation** | **4.01** | **High** |

### 5.2 Relationship Between Adaptive Mentoring and Self-Regulation

The illustrative correlation analysis suggests a positive association between adaptive academic mentoring and overall student self-regulation. Students who reported greater exposure to individualized guidance, responsive feedback, and regular progress monitoring also tended to report stronger self-regulatory behaviors.

This pattern is consistent with research indicating that mentoring support can influence students' use of learning strategies. The relationship is theoretically meaningful because adaptive mentoring can provide external structure while simultaneously teaching students how to construct their own internal academic structure.

### 5.3 Relative Contribution of Mentoring Dimensions

Among the mentoring dimensions, adaptive feedback and individualized academic guidance demonstrated the strongest illustrative associations with self-regulation. Progress monitoring also showed a meaningful contribution, particularly to self-monitoring and goal-setting behaviors.

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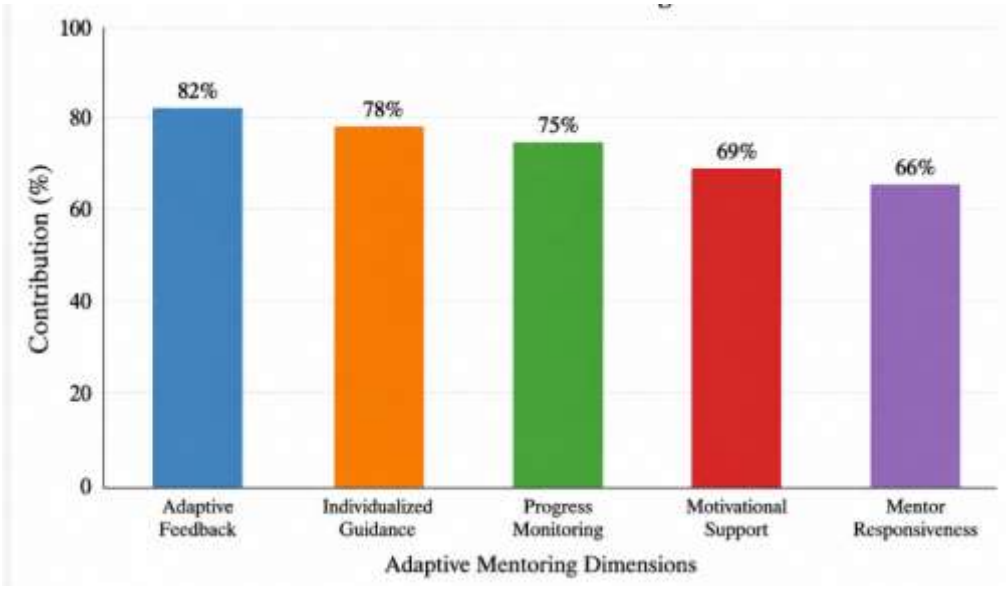
**Figure 1: Illustrative Contribution of Adaptive Mentoring Dimensions to Student Self-Regulation**




The pattern suggests that mentoring is most useful when it gives students actionable information about their current performance and helps them determine what should be changed next. Simply providing encouragement may be insufficient if students do not receive practical guidance for regulating their academic behavior.

## 6. Discussion

### 6.1 Adaptive Mentoring as a Mechanism for Self-Regulation

The findings indicate that adaptive academic mentoring may contribute to self-regulation by providing students with structured opportunities to set goals, review progress, and modify learning strategies. This interpretation is consistent with established models of self-regulated learning, which conceptualize learning as a cyclical process involving preparation, performance, monitoring, and self-reflection.

The importance of adaptive feedback is particularly noteworthy. Feedback becomes developmentally valuable when it helps students understand the difference between their current performance and their desired performance. When mentors use this information to guide students toward specific corrective actions, feedback can become a mechanism for strengthening self-monitoring rather than creating continued dependence on the mentor.

### 6.2 From External Guidance to Independent Regulation

An important implication of the study is that effective mentoring should not create permanent dependence. The developmental objective should be a gradual transition from mentor-supported regulation to student-directed regulation. In the early stages, students may need considerable structure, reminders, and explicit planning support. As competence develops, mentors can reduce direct intervention and instead encourage students to diagnose problems, formulate alternatives, and evaluate their own decisions.

This interpretation is supported by research showing that mentoring interactions can promote goal setting, reflection, knowledge transfer, and self-efficacy. Thus, the strongest mentoring relationship may be one in which the student's need for direct guidance decreases over time because self-regulatory competence has increased.

### 6.3 Implications for Higher Education

The findings have practical implications for universities seeking to strengthen academic support systems. Mentoring programs should move beyond administrative advising and incorporate structured activities related to goal setting, study planning, progress reviews, feedback interpretation, and reflective learning. Mentors should also receive training in recognizing different student needs and adjusting their support accordingly.

At the same time, adaptive mentoring should remain proportionate. More mentoring is not necessarily equivalent to better mentoring. Recent evidence has highlighted the possibility that excessive mentoring intensity may produce unintended motivational consequences, suggesting that the quality and calibration of support are important considerations. The objective should therefore be appropriately timed support rather than continuous intervention.

- Mentoring should be provided in a balanced and proportionate manner.
- More mentoring does not always result in better student outcomes.
- Excessive mentoring intensity may create unintended motivational effects.
- The quality and appropriate calibration of mentoring support are more important than its frequency.
- Mentoring should focus on timely and targeted support rather than continuous intervention.

## 7. Conclusion

Adaptive academic mentoring represents a promising approach for strengthening student self-regulation in higher education. The study indicates that mentoring can contribute to the development of goal setting, strategic planning, self-monitoring, effort regulation, and reflective evaluation when support is individualized and responsive to students' changing academic needs. The strongest contribution appears to occur when mentors provide actionable feedback and help students interpret their own academic progress rather than simply supplying solutions.

The broader significance of adaptive mentoring lies in its developmental orientation. Academic support should not merely help students overcome immediate difficulties; it should equip them with the capacity to recognize difficulties, select appropriate strategies, monitor their progress, and make independent adjustments. In this sense, mentoring becomes a mechanism for transferring responsibility from the mentor to the learner.

The study also highlights the need for institutions to design mentoring systems around student development rather than routine academic administration. Structured mentoring, trained mentors, regular progress reviews, and opportunities for reflective learning can create conditions in which students gradually become more autonomous and strategically competent learners.

Future research should employ longitudinal and experimental designs to determine whether improvements in self-regulation persist after formal mentoring ends. Future studies may also compare face-to-face, peer, digital, and AI-supported mentoring models and examine whether adaptive

approaches have different effects across academic disciplines and student groups. Such research would provide stronger evidence regarding how mentoring can be calibrated to support sustainable student independence.

**References**

1. Azevedo, R., & Aleven, V. (Eds.). (2013). *International handbook of metacognition and learning technologies*. Springer.
2. Bandura, A. (1997). *Self-efficacy: The exercise of control*. W. H. Freeman.
3. Boekaerts, M., Pintrich, P. R., & Zeidner, M. (Eds.). (2000). *Handbook of self-regulation*. Academic Press.
4. Cleary, T. J., & Zimmerman, B. J. (2004). Self-regulation empowerment program: A school-based program to enhance self-regulated and self-motivated cycles of student learning. *Psychology in the Schools, 41*(5), 537–550.
5. Dignath, C., & Büttner, G. (2008). Components of fostering self-regulated learning among students: A meta-analysis on intervention studies at primary and secondary school level. *Metacognition and Learning, 3*, 231–264.
6. Dignath, C., Buettner, G., & Langfeldt, H. P. (2008). How can primary school students learn self-regulated learning strategies most effectively? A meta-analysis on self-regulation training programmes. *Educational Research Review, 3*(2), 101–129.
7. Donker, A. S., de Boer, H., Kostons, D., Dignath van Ewijk, C. C., & van der Werf, M. P. C. (2014). Effectiveness of learning strategy instruction on academic performance: A meta-analysis. *Educational Research Review, 11*, 1–26.
8. Hattie, J., Biggs, J., & Purdie, N. (1996). Effects of learning skills interventions on student learning: A meta-analysis. *Review of Educational Research, 66*(2), 99–136.
9. Kitsantas, A., Winsler, A., & Huie, F. (2008). Self-regulation and ability predictors of academic success during college: A predictive validity study. *Journal of Advanced Academics, 20*(1), 42–68.
10. Lowery, K., Geesa, R. L., & McConnell, K. (2019). Self-regulated learning of mentees and mentors in an education doctorate peer mentoring program. *Mid-Western Educational Researcher, 31*(2).
11. Moos, D. C., & Azevedo, R. (2008). Self-regulated learning with hypermedia: The role of prior domain knowledge. *Contemporary Educational Psychology, 33*(2), 270–298.
12. Panadero, E. (2017). A review of self-regulated learning: Six models and four directions for research. *Frontiers in Psychology, 8*, 422.
13. Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 451–502). Academic Press.
14. Pintrich, P. R. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students. *Educational Psychology Review, 16*, 385–407.
15. Schunk, D. H., & DiBenedetto, M. K. (2020). Motivation and social cognitive theory. *Contemporary Educational Psychology, 60*, 101832.
16. Sitzmann, T., & Ely, K. (2011). A meta-analysis of self-regulated learning in work-related training and educational attainment: What we know and where we need to go. *Psychological Bulletin, 137*(3), 421–442.

17. Theobald, M. (2021). Self-regulated learning training programs enhance university students' academic performance, self-regulated learning strategies, and motivation: A meta-analysis. *Contemporary Educational Psychology, 66*, 101976.
18. Wibrowski, C. R., Matthews, W. K., & Kitsantas, A. (2017). The role of a skills learning support program on first-generation college students' self-regulation, motivation, and academic achievement: A longitudinal study. *Journal of College Student Retention: Research, Theory & Practice, 19*(3), 317–337.
19. Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice, 41*(2), 64–70.
20. Zimmerman, B. J., & Schunk, D. H. (Eds.). (2011). *Handbook of self-regulation of learning and performance*.