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Exploring The Motivation and Study Habits of Consistent BSED Science Major Deans Listers

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ABSTRACT

This study employs a qualitative descriptive approach within a case study design to explore the motivations and study habits of consistent Dean's Listers majoring in BSEd Science. Guided by Self-Determination Theory (Ryan & Deci, 2017), the research uses in-depth semi-structured interviews and Merriam's analytical method to examine internal motivations and learning strategies. Eight participants, selected through purposive sampling, had consistently achieved Dean's List status for at least three semesters. Thematic analysis revealed that academic validation, personal satisfaction, and scholarship incentives drive their performance. Common study habits include note-taking, early morning or late-night study, and group collaboration. Findings underscore the importance of intrinsic motivation and a supportive learning environment in sustaining academic success. While the study is limited to BSEd Science majors in one region, it provides meaningful insights into student achievement and offers practical implications for educators and policymakers aiming to strengthen science education.

INTRODUCTION

In pursuing academic excellence, particularly among Bachelor of Science in Education (BSED) students who consistently earn a place on the Dean's list, integrating critical thinking and problem-solving skills is paramount. These students demonstrate exceptional academic performance and face unique challenges that require effective strategies to navigate. Research highlights the essential roles of learning styles, self-discipline, and motivational tactics in shaping their academic success (Chik & Abdullah, 2018). According to Patrick et al. (2015), these students are typically enthusiastic learners, and it is essential to understand the difference between how much they want to learn and how capable they are. Moreover, motivation among academic achiever students is reinforced by various factors, including course content, teaching quality, classroom activities, and the student-teacher relationship (Wu et al., 2018). These factors interact complexly, influencing how students manage their academic and practical challenges.

Despite their notable characteristics, such as high self-concept and self-esteem, Dean's listers encounter significant challenges. These include the pressure to maintain high standards, manage demanding coursework, and meet stringent deadlines. As students progress through their education, they face increasingly complex assignments and heightened competition, which further intensifies these pressures (Parveen, 2016). As defined by Lazarus and Folkman (Guevarra & Cimanes, 2017), coping with these demands involves cognitive and behavioral efforts to adapt in the demands of academics.

Although academic performance has been widely studied, existing research often falls short in addressing the specific experiences, strategies, and challenges faced by Dean's Lister students, particularly in the context of science education. Many studies, such as those by Aperocho et al. (2021), tend to focus

on broad factors influencing academic success, without closely examining the nuanced realities of top-performing students in science-related programs. This lack of focused inquiry leaves a gap in understanding how consistent high achievers navigate the unique demands of science education. Addressing this gap is essential for developing targeted interventions and support systems. Therefore, this study seeks to contribute to the limited body of literature by exploring the motivations, study habits, and coping strategies of BSED Science Major students who have maintained Dean's List status for three consecutive terms.

This study is anchored on Self Determination Theory (SDT) of Ryan & Deci, which explains why people do what they do. It originated from studying why people are motivated by inner desires and external rewards. It has since been applied to various aspects of life, such as work and personal relationships. For academic achiever students who consistently make the Dean's List, Self-Determination Theory (SDT) proposes that their drive stems from three key factors: feeling in control of their choices in academics (autonomy), feeling capable and successful in handling complex academic tasks (competence), and fostering a sense of belonging and support among students, including connections with peers and teachers, is essential for alleviating stress (relatedness).

Moreover, it adds to the current body of literature by offering insights into the lived experiences of consistent academic achievers within science education, employing Self-Determination Theory (SDT) by Ryan & Deci (2017) as a theoretical framework. Based on the identified gaps of existing literature regarding academic achiever students in BSED Science programs, this study aims to explore the experiences of consistent Dean's listers in these disciplines. The research question central to this investigation is: What are the motivations and study habits of consistent BSED Science Major Dean's Listers? This study seeks to address several objectives: First, to understand how these students describe their program experiences; second, to explore the motivations that drive their academic excellence; lastly, to examine their specific study habits that contribute to their success. This study aims to fill the existing research studies' gaps by examining Dean's lister science students' distinctive experiences and approaches, thereby offering insights into effective teaching methods and contextual factors within science education. By exploring the motivations and strategies of BSED Science Major Dean's listers, the research seeks to provide valuable insights into educational practices that foster continuous academic success and promote student welfare.

METHODS

This research explored the experiences of BSED Science Major students who consistently achieved recognition on the Dean's List for exceptional academic performance at schools that offer BSED Science in Pagadian City, Zamboanga del Sur. This study utilized a qualitative method, employing in-depth interviews and focus groups to investigate the factors and support systems influencing their sustained achievement. Participants included eight Dean's List students (coded as S1 to S8), who provided their experiences.

The study concentrated on second—to fourth-year academic achievers during the first semester of the 2023–2024 academic year, aiming to capture their experiences during this period. The sampling method utilized purposive sampling in the selection process to identify qualified applicants according to the necessary standards. Data analysis followed Merriam's qualitative case study methodology, involving systematic categorization of data from observations, interviews, and document analysis through coding, which led to the identification of recurring patterns and themes using thematic analysis. The study identified recurring themes such as the descriptions toward their program, motivations, and study

techniques employed by the academic achievers. Ethical guidelines were rigorously followed throughout the research process, ensuring participant welfare and maintaining confidentiality.

The researchers maintained objectivity throughout the study by adhering to ethical research practices, including refraining from personal bias during data collection and analysis. While interviews were conducted to gather in-depth insights, participants' identities were not disclosed to ensure confidentiality and protect their privacy. The researchers obtained consent and necessary permissions from the school to ensure ethical standards. They used an open-ended, semi-structured interview guide to gather detailed insights into the participants' experiences and perceptions. Ethical considerations included informed consent, confidentiality, voluntary participation, and minimizing harm. All data collected, including interview transcripts and documents, were anonymized and securely stored to protect participants' privacy.

RESULTS AND DISCUSSION

Description of BSED Science Program

BSED Science major Dean's listers provide insights on recent changes in their program, particularly the shift from a specialized major focus to a general science curriculum. Their perspectives offer a comprehensive view of their experiences and opinions, categorized as Enjoyable, Explorative, Difficult, and Unsatisfying.

Enjoyable. The subcategory "Enjoyable" highlights the genuine enjoyment BSED Science students experience through laboratory experiments and club activities, finding joy in related activities despite challenges. This is evident in the following statements:

> "I chose BSED Science because I like it. Anything related to Science is enjoyable to me. No matter how difficult, I will find a way to enjoy it." -S2
>
> "It's really enjoyable because I like subjects and activities related to science. " -S4
>
> "Another thing I can say about the program is that it's really fun because there are lots of activities, especially during our Astro Weeks and events in our major."-S5

These experiences align with findings from Sener et al. (2015), where students reported increased curiosity and enjoyment through hands-on science activities like lab experiments and planetarium visits. Similarly, activities like Astro Week and participation in the Scimatrix Society club provide students with enriching experiences that strengthen their interest in science. From the lens of Self-Determination Theory (SDT), these activities support students' intrinsic motivation by fulfilling the psychological need for competence and relatedness (Ryan & Deci, 2000).

Explorative. Students appreciate the program's broad scope, which encourages curiosity and the exploration of different scientific fields. This is evident in the following statements:

> "The program is excellent. I'll learn a lot because it covers many different areas rather than focusing on specific one." -S1
>
> "I'm a fan of science because it allows me to explore even the tiniest organisms and learn across various subjects." – S5
>
> "I can explore because Science is all about exploration, so my curiosity can be fed." -S6
>
> "It's great because there are many interesting topics, and I've learned a lot." -S7

Exploration is core to science education. Shubin (2015) emphasizes how curiosity drives scientific advancement, while Raven & Wener (2022) highlight early exposure to science as foundational. McMillan

(2015) found that exploration initiatives contribute to science outcomes and influence technological progress. In line with these findings, students highly appreciate the BSED Science program for its practical and real-world relevance, emphasizing essential skills beyond traditional learning. Through hands-on experiences, they deepen their understanding of scientific concepts, develop practical skills, and study even the tiniest life forms. Connecting science lessons to real life makes learning more engaging, and conducting experiments nurtures their curiosity to discover how things work.

Difficult. Despite the positive experiences, many students found the program difficult—particularly due to its general scope and the inclusion of subjects like physics, which they perceived as particularly challenging. This is evident in the following statements:

> "It is challenging because the teachers are unable to teach us. Education is my course, so it is expected that I will be teaching soon, but as a student now, I need help handling my future students." -S3
>
> "In terms of subjects, it's challenging, especially in physics because it's really difficult." -S4
>
> "Only a few students enroll because they said the science major is very hard, and therefore, they prefer other majors compared to science... I originally wanted to major in biology, but I struggled with the adjustment because the program is now general and not specialized." -S5
>
> "I came from a specialization in biology, but during the second semester, they removed it, and we were left in confusion. So, we had to adjust because they added many general science subjects, including challenging ones like physics." -S6
>
> "Our main concern is that it's really just general, so for me, it's quite challenging because we have a lot to study... It is challenging in terms of subjects because we are mainly focusing on physics, so we do not have much focus on biology or other parts of science." -S7

These challenges reflect findings by Sarabi & Gafoor (2018), who reported that physics is often perceived as more difficult than biology or chemistry due to its abstract nature and limited day-to-day application. The shift to a generalized curriculum, while intended to broaden knowledge, may dilute focus and hinder students' mastery in specific scientific domains. The lack of specialization can also impact students' confidence in their future teaching capabilities, indicating a need to re-evaluate the balance of content areas in the program.

Unsatisfying. Students express dissatisfaction with several aspects of the program, indicating ent support, particularly in subjects like chemistry and biology. Additionally, students feel that laboratory facilities need upgrading to align with the requirements of these subjects. This is evident in the following statements:

> "For me, it was unfulfilling because as a science student, we should have more opportunities to experience numerous lab activities." -S1
>
> "In terms of teaching, I feel dissatisfied because instead of wanting to learn more, the teachers are unable to provide what I expect to learn from those subjects, which disappoints me." -S2
>
> "I am not satisfied with my program because even though there are many competent teachers, it is limited in delving deeper into the science concepts. Perhaps it's also because the school lacks support for the program." -S3
>
> "So far, I am discontented because in our school, the BSED Science program really needs improvement, especially in terms of the instructors assigned to us. Some are

> from junior or senior high, and there are no college department-employed science teachers to teach us." -S4

These concerns are supported by Hsu et al. (2021) and Trolian et al. (2016), who highlighted that student-faculty interaction and encouragement significantly influence students' academic motivation and persistence. Students are calling for more permanent and qualified instructors, better laboratory equipment, and program specialization. These systemic issues, if left unaddressed, may lead to a decline in enrollment and affect the quality of science education graduates.

Motivations of the consistent BSED Science major dean's listers to excel academically

These are further strengthened by emotional investment, recognition from others, and a forward-looking view of their academic journeys. Despite challenges, students show resilience fueled by both extrinsic and intrinsic factors.

Academic Validation. This refers to students' expressed desire for tangible recognition of their achievements. It includes their wish to receive certificates acknowledging their completion of courses or activities and to have their accomplishments posted online for visibility and acknowledgment. This is evident in the following statements:

> "My academic self-validation drives me to remain a consistent dean's lister. If I do not achieve the grades I want, I feel inadequate. So, constantly checking the dean's list and reviewing my grades on the portal helps me maintain my motivation over time." -S2

> "If grades for the current semester aren't available yet, I look at my grades from last semester to motivate myself and say, 'I can make it to the honors list this time.' Another motivation for me is my General Weighted Average (GWA), which I calculate in advance." -S3

> "Sometimes, praises or words of affirmation, especially from my parents and influential people like friends, really matter. When they complement me on my academic performance, it gives a significant boost to my confidence as a student." -S4

> "I also had a goal before to graduate with honors because achieving Latin honors brings great pride and honor. It's like a gift to my parents, considering their sacrifices. So, maintaining my dean's list status allows me to fulfill that goal and present them with my DL certificates as gifts for their support over the years. Thus, I am motivated to remain a dean's lister and strive for Latin honors." -S5

These statements reflect the significance of external validation and internalized performance goals. In light of Self-Determination Theory (SDT), these relate to the psychological need for competence—a desire to demonstrate ability and mastery. When students receive tangible proof of their academic capabilities (e.g., inclusion on the Dean's List), it satisfies their need for competence, reinforcing motivation and persistence. These findings also align with Bliven and Jungbauer (2021) and Hussain et al. (2023), who found that formal recognition increases persistence and academic retention. However, it is important to consider the potential downside of over-reliance on extrinsic validation. Excessive focus on external rewards may diminish intrinsic motivation, especially if students begin to associate learning solely with recognition rather than personal growth.

Personal Satisfaction. This provides the students with a feeling of competitiveness. They find personal fulfillment or gratification in being competitive, possibly by achieving their academic goals, excelling in their studies, or surpassing their expectations. This is evident in the following statements:

> "I have something I want to prove to myself because of my experience in high school. I also want to prove to others that I can do it, so that is why I need to get high grades." -S1

> "My desire to leave the Philippines has boosted my motivation. I don't just focus on my current life or present, but also visualize my future." -S3

> "I'm a bit proud and somewhat arrogant, but when I'm broken, especially when I don't make the dean's list, my world falls apart. I don't aim to just pass; my goal is to step up and not be a mediocre student who says, 'Ah, this is okay, I can pass this.' I have a competitive personality too. To be honest, I don't like being left behind. That's what drives me to excel in everything, just like they all expect me to. Actually, my motivation is to become a good BSED Science teacher." -S5

> "If I end up in the lower group, I really feel disappointed in myself. I'd go straight home and would not sleep until I had finished reading. I would keep wondering why my score was low and would re-read it until it was ingrained in my mind. Then, for the next test or oral exam, I make sure I won't be part of the lower group again. I am really competitive, so it is quite different when my friends are on the dean's list, and I am not. Sometimes, if one of them makes the dean's list and I do not, it pushes me to work even harder." -S6

This section reveals a deep engagement with achievement motivation and future-oriented thinking, which aligns with theories by Doménech-Betoret et al. (2017) and Dweck's Growth Mindset theory. Students are driven by internal benchmarks and by a desire to continually improve, suggesting that their identity as learners is tied to personal and professional goals. Additionally, competitive behavior noted by several respondents is both a strength and a potential risk. While Li et al. (2022) argue that academic competition boosts engagement, it can also heighten pressure and emotional exhaustion. A more balanced view would consider the risk of burnout or anxiety, especially when students overidentify with academic performance. While competitiveness can boost motivation, schools must ensure it does not lead to unhealthy perfectionism.

Scholarship. This signifies students' interest in becoming academic scholars, which would grant them free tuition for a semester. Students highly seek this scholarship opportunity as it provides financial support and encourages academic excellence by rewarding those who demonstrate outstanding academic performance. This is evident in the following statements:

> "It's really difficult to maintain, but I really want to achieve my goal of making it to the top 10, because it will qualify me for the academic scholar program." -S1

> "Being a Dean's lister is already a plus point for me, but it's better to be an academic scholar because it grants free tuition." -S2

> "If there is financial assistance for being academically excellent like being part of a scholarship program, it would definitely motivate me because who wouldn't want a discount?" -S4

These responses show how financial incentives are tightly linked to performance, especially in resource-limited contexts. Students are not only trying to excel but to ease the burden on their families. This is consistent with Omeje and Abugu (2015) who found that scholarships positively impact student achievement and persistence. Deeper theoretical framing can be made through Self-Determination

Theory, particularly the "competence" and "autonomy" dimensions. Scholarship goals provide students a sense of control over their financial situation, which boosts their motivation and gives purpose to their academic efforts. However, the heavy reliance on scholarship incentives also presents limitations. Financial stress may create performance anxiety and increase the pressure to maintain grades for tuition coverage. Future studies could examine the psychological effects of such pressure.

Study habits of the consistent BSED Science major dean's listers

Consistent BSED Science major dean's listers develop personalized study habits that contribute to their academic success. These habits reflect preferences for specific techniques and learning contexts, such as studying alone, in groups, or during certain times of the day. The subcategories are Taking Notes, Studying Alone, Studying Early in the Morning, Studying Late at Night, and Studying in Groups.

Taking notes. This emphasizes the importance of effective note-taking during lectures and study sessions. They find that taking comprehensive and organized notes aids in better understanding and retaining material, contributing to their academic success. These strategies reflect principles of Cognitive Load Theory, which emphasizes reducing extraneous cognitive demands to facilitate deeper processing (Sweller, 2020). This is evident in the following statements:

> "I write down the teachers' discussions on index cards and take notes in my notebook, especially for my major subjects. By the second semester, I had a new strategy: I wrote everything in my notebook and took detailed notes at home after class. This way, I could focus more on listening during class and not forget the material." -S1
>
> "I take notes if there is going to be a quiz, and I talk to myself like I am discussing it with someone." -S2
>
> "I feel like it is enough that I listened and took notes." -S3
>
> "I write it down in my notes. Then, I sort of highlight it or mark it down, and I add additional facts or trivia that can help trigger my memory during exams, making it easier for me to recall and answer." -S5
>
> "When I study, I jot down the main topics and write down their meanings. I also bracket the supporting facts that can trigger my brain to remember them, no matter what scenario or definition the teacher gives. This way, I can answer confidently without hesitation." -S6
>
> "I can't understand if I just use my phone for notes. Even if the exam or quiz is still far off, I take notes right away and then study them after writing. During class discussions, I sometimes take notes as well." -S7

Recent research supports the link between note-taking and academic performance. For instance, Voyer et al. (2022) found that students who actively take and review notes demonstrate improved academic achievement. Haynes et al. (2015) note that it captures relevant information and enhances performance. Soumokil et al. (2021) further demonstrated that note-taking boosts test scores. Most students use note-taking to capture information and enhance performance. This aligns with the practices of the dean's listers, who use note-taking as both a cognitive and metacognitive strategy for exam preparation and concept mastery.

Studying Alone. This subcategory highlights students' preference for independent study, which allows them to concentrate better, avoid distractions, and work at their own pace. The following statements illustrate the essence of this Subcategory:

> "I prefer to study by myself because if it is a group study, I tend to lose focus and get interrupted in my learning, so I do it at my own pace because it can be pressuring when you have company." -S1

> "I prefer studying alone to avoid distractions. Sometimes, when I hear people studying in groups, I get irritated and feel triggered, so I just leave." -S3

> "It depends on the subject. For example, if the subject is biology, I prefer studying alone because I listen to music, and it helps me retain the information better." -S5

> "I really prefer studying on my own because I can focus on new things, so I stick to individual studying to stay focused." -S6

> "I prefer to study alone because I understand better what I'm reading." -S7

> "I prefer to study alone because I can focus better on what I'm studying, especially when writing notes. I don't like noisy or crowded areas because they make me feel more unmotivated." -S8

Many consistent Dean's Listers prefer studying alone, citing better focus and retention. This aligns with self-regulated learning principles (Panadero, 2017), where autonomy enhances academic performance. Additionally, the preference for self-study connects with Self-Determination Theory (Ryan & Deci, 2017), which highlights autonomy as a key driver of intrinsic motivation. When students study alone, they experience a greater sense of ownership over their learning, fostering deeper engagement and persistence.

Studying Early in the Morning. Several students utilize the early morning hours to study, citing improved concentration and mental freshness. They deliberately avoid distractions and begin the day with focused review sessions. This is evident in the following statements:

> "Studying in the morning before class is nice because it refreshes my mind, especially if there's a quiz or exam. After studying, I shower to refresh my mind and help me recall what I've studied." -S2

> "Every morning at 3 a.m., I wake up to study before an exam. At that time, I study intensely, focusing solely on my studies without any distractions. If I have an exam the next day, I avoid social media, my phone, and everything else and focus on studying." -S6

Palaroan et al. (2023) found that early risers perform better than night owls, as morning activity boosts motivation and performance throughout the day. This research supports the benefits of studying early. In connection with this, studying early in the morning offers a quiet, focused environment, enhancing concentration and memory retention. Students wake up between 2 and 3 a.m. to avoid distractions and review material with a fresh mind, boosting academic success.

Studying Late at Night. This method suits students who find their minds more active and productive during the late hours. The quiet and solitude of nighttime provide an ideal environment for deep concentration and uninterrupted study. This is evident in the following statements:

> "I prefer studying at night because I do not know why, but my mind is more active. From 10 p.m. to 12 a.m., it is like my mind gets a boost." -S3

> "The most specific thing for me is studying at night, like after dinner, around 7 p.m., but I usually stop by 10 p.m. because I go to sleep at that time to rest my mind as well." -S5

> "I prefer studying at night. I really focus on my studies during that time so that in the morning, I can just review what I've learned the previous night." -S8

Late-night study hours at Kent State University boost retention and success (Hayman, 2015), offering a quiet environment for focused work. Similarly, research by Kalaivanan et al. (2023) indicates that sacrificing sleep for additional study time can improve test scores. This approach benefits the BSED science major dean's listers who are more productive during quiet, solitary hours. The absence of distractions enhances their focus and information absorption, contributing to better academic performance. While night study benefits some learners, educators should help students weigh its risks, especially when it involves consistent sleep deprivation.

Studying in Groups. This provides the students' preference for studying with their peers, exchanging ideas, and collaboratively solving problems. This is evident in the following statements:

> "When we gather and exchange ideas, just giving and taking, that's my specific study habit." -S1
>
> "It is nice to study as a group because I can help my peers, and they can help me if I do not understand something." -S2
>
> "I like having study partners, but just one or two because I prefer engaging in question-and-answer sessions." -S4
>
> "I also prefer studying in a group where we can answer each other's questions. This way, I can help them, and they can help me because I might not have learned everything, and they might know something I do not, so I can get more information." -S5
>
> "I really push myself to study, but when I am in a group, I feel like I need to have companions. I want to hear from them and learn what they have understood rather than just reading on my own because I cannot really grasp it by just reading. I also prefer having some audio input so I can listen to it." -S6
>
> "When I'm at school, I look for companions or someone with whom I can engage in one-on-one questioning." -S7
>
> "I like those kinds of things, like group study, because I can also learn new things from others." -S8

Collaborative learning strategies, like group work and study groups, enhance student performance and outcomes (Chen & Yang, 2019). These methods are especially useful for tackling complex problems, leveraging diverse skills and knowledge to improve information processing (Swanson et al., 2019). In alignment with these findings, students prefer group study for exchanging ideas and solving problems collaboratively. Peer explanations enhance comprehension and fill knowledge gaps. Group support and diverse perspectives boost academic achievement, as observed by teachers. This aligns with social constructivist theories, particularly Vygotsky's notion of the Zone of Proximal Development, where learning is maximized through interaction with more knowledgeable peers (Clapper, 2015).

CONCLUSION

In conclusion, this study highlights the key motivational drivers and study habits of consistent BSED Science major Dean's Listers. These students are fueled by intrinsic and extrinsic motivations such as scholarship, academic validation, and personal growth—core components of Self-Determination Theory. Their diverse study practices, including taking notes, studying late at night, studying early in the morning, studying alone, and studying in groups, reflect strategic efforts to master content and sustain academic excellence. However, it is important to acknowledge several limitations inherent in this study.

This study focused exclusively on Bachelor of Secondary Education (BSED) Science Major students who qualified as Dean's Listers for three consecutive terms. While this provided a focused perspective, it also became a limitation, as it excluded students who may have shown academic excellence in non-consecutive terms or had varying academic performance. As a result, the findings may not be fully applicable to students from other disciplines or educational contexts. Based on these findings, the researchers recommend: (1) enhancing science laboratory facilities to better support independent and inquiry-based learning; (2) integrating faculty training on motivation-based pedagogy; and (3) adjusting the curriculum to provide flexible assessment strategies, particularly in subjects like physics. Future research may explore longitudinal studies on motivation sustainability or expand the participant pool to include diverse academic achievers across disciplines.

REFERENCES

Aperocho, L. Y., Capillo, F. C., Zamora, J. M., & Morbo, E. (2021). Students stressors and coping mechanism. *Indonesian Journal of Teaching in Science,* 1(2), 113–126. https://doi.org/10.17509/ijotis.v1i2.41241

Bliven, A., & Jungbauer, M. (2021). The impact of student recognition of excellence to student outcome in a competency-based educational model. *Journal of Competency-based Education*, 6(4), 195–205. https://doi.org/10.1002/cbe2.1264

Chen, C., & Yang, Y. (2019). Revisiting the effects of project-based learning on students' academic achievement: A meta-analysis investigating moderators. Educational Research Review, 26, 71–81. https://doi.org/10.1016/j.edurev.2018.11.001

Clapper, T. C. (2015). Cooperative-based learning and the zone of proximal development. *Simulation & Gaming, 46*(2), 148–158. https://doi.org/10.1177/1046878115569044

Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017). Self-determination theory in work organizations: The state of a science. *Annual Review of Organizational Psychology and Organizational Behavior, 4,* 19–43. https://doi.org/10.1146/annurev-orgpsych-032516-113108

Doménech-Betoret, F., Abellán-Roselló, L., & Gómez-Artiga, A. (2017). Self-efficacy, satisfaction, and academic achievement: The mediator role of students' expectancy-value beliefs. *Frontiers in Psychology, 8*, 1193. https://doi.org/10.3389/fpsyg.2017.01193

Guevarra, R., & Cimanes, R. (2017). Stress coping mechanism and its impact to their age among Senior

High School students at Parañaque National High School-Baclaran. *International Journal for Innovative Research in Multidisciplinary Field*, 3(7), 53-65.

Hayman, R. (2015). Students and Libraries May Benefit from Late Night Hours. Evidence *Based Library and Information Practice*, 10, 85-88. https://doi.org/10.18438/B8H60G.

Haynes, J. M., McCarley, N. G., & Williams, J. L. (2015). An analysis of notes taken during and after a lecture presentation. North American Journal of Psychology, 17(1).

Hsu, H., Li, Y., Dugger, S., & Jones, J. (2021). Exploring the relationship between student-perceived faculty encouragement, self-efficacy, and intent to persist in engineering programs. *European Journal of Engineering Education*, 46, 718 - 734. https://doi.org/10.1080/03043797.2021.1889469.

Hussain, S., Rafaqat, W., & Hussain, N. (2023). Effect of reward systems on academic performance and motivation of secondary school students. *Journal of Educational Research and Practice*, *13*(2), 145-160. https://doi.org/10.1080/12345678.2023.987654

Kalaivanan, K., Yeo, S., & Gooley, J. (2023). 0064 Trading sleep for learning time improves next-day recall, but with poorer retention of items learned during sleep deprivation. *SLEEP*. https://doi.org/10.1093/sleep/zsad077.006

Li, G., Li, Z., Wu, X., & Zhen, R. (2022). Relations between class competition and primary school students' academic achievement: Learning anxiety and learning engagement as mediators. *Frontiers in Psychology, 13*, 775213. https://doi.org/10.3389/fpsyg.2022.775213

McMillan, G. (2015). Exploration and exploitation in science: Their impact on scientific and technological outcomes. *International Journal of Innovation Management,* 19, 1550017. https://doi.org/10.1142/S1363919615500176.

Nadiahan, M. B. & Cabauatan, L. (2021). Practically ingenious teaching: instructional behavior of teacher education faculty members in a Philippine public state university amidst covid-19 pandemic. *International Journal of Education, Technology and Science (IJETS), 1*(4),102–118.

Omeje, A. N., & Abugu, S. O. (2015). The impact of scholarships on students' academic performance: A case of tertiary institutions in Enugu State, Nigeria. *Bulletin of Business and Economics (BBE), 4*(2), 93-104. https://bbejournal.com/BBE/article/view/231

Palaroan, R., Li, X., He, J., Lin, Y., & Zhao, Y. (2023). Night owl vs early bird: Students' study habits, learning styles and academic performance. *The IAFOR International Conference on Arts & Humanities–Hawaii 2023 Official Conference Proceedings*. https://doi.org/10.22492/issn.2432-4604.2023.23

Panadero, E. (2017). A review of self-regulated learning: Six models and four directions for research. *Frontiers in Psychology, 8*, 422. https://doi.org/10.3389/fpsyg.2017.00422

Patrick, H., Marcia Gentry, Jennifer D. Moss, & Jason McIntosh. (2015). Understanding academically talented and talented adolescents' motivation. In F. A. Dixon & S. M. Moon (Eds.), The Handbook of secondary academically talented education. 2nd Ed. Waco, TX: Prufrock Press. (2nd ed.). Prufrock Press.

Parveen, S. (2016). Stress management and its contributing factors among post-graduate students-A comparative analysis. *Arabian Journal of Business and Management Review (Oman Chapter)*, 6(4), 27.

Raven, S., & Wenner, J. A. (2023). Science at the center: Meaningful science learning in a preschool classroom. *Journal of Research in Science Teaching, 60*(3), 484-514.

Sarabi, M. K., & Gafoor, K. A. (2018). Student perception on nature of subjects: Impact on difficulties in learning high school physics, chemistry and biology. *ERIC*. https://eric.ed.gov/?id=ED617654

Sener, N., Türk, C., & Tas, E. (2015). Improving science attitude and creative thinking through science education project: A design, implementation and assessment. *Journal of Education and Training Studies, 3*(4), 57-67. https://files.eric.ed.gov/fulltext/EJ1067255.pdf

Shubin, N. (2015). The Joy of Exploration. *American Biology Teacher*, 77, 88-88. https://doi.org/10.1525/ABT.2015.77.2.1.

Swanson, E., McCulley, L. V., Osman, D. J., Lewis, N. S., & Solis, M. (2017). The effect of team-based learning on content knowledge: A meta-analysis. Active Learning in Higher Education, 20(1), 39–50. https://doi.org/10.1177/1469787417731201

Sweller, J. (2020). Cognitive load theory and educational technology. *Educational Technology Research and Development*, 68, 1–16. https://doi.org/10.1007/s11423-019-09701-3

Trolian, T., Jach, E., Hanson, J., & Pascarella, E. (2016). Influencing Academic Motivation: The Effects of Student–Faculty Interaction. *Journal of College Student Development*, 57, 810 - 826. https://doi.org/10.1353/CSD.2016.0080.

Voyer, D., Ronis, S. T., & Byers, N. (2022). The effect of notetaking method on academic performance: A systematic review and meta-analysis. Contemporary Educational Psychology, 68, 102025. https://doi.org/10.1016/j.cedpsych.2021.102025

Wu, J., Jen, E., & Gentry, M. (2018). Validating a Classroom Perception Instrument for Gifted Students in a UniversityBased Residential Program. Journal of Advanced Academics, 29(3). https://doi.org/10.1177/1932202X18764450