Challenges and Coping Strategies in Licensure Examination Among Electrical Engineering Graduates

Bless G. Ampuan
Department of Electrical Engineering, University of Eastern Philippines, Catarman, Northern Samar Philippines
bless.ampuan@uep.edu.ph

***Abstract*— This quantitative study employed a descriptive survey design utilizing a stratified sampling technique. Slovin's formula was applied to determine the sample size from each batch, resulting in a total sample size of 70. Findings revealed that distraction and creating a relaxed study environment is the most prevalent challenges and coping strategies, respectively. Major challenges were encountered such as the numerous formulas to memorize, financial issues and societal expectations which contributed to the difficulties of the graduates in their preparation. Major coping strategies such as early preparation, practice by solving more problems, understanding the formula, preparing a study plan, and the use of review materials gathered from the review center are the major contributors to the successful electrical engineering students, implicating a significant factor in passing the licensure examination. This study aimed to enhance the productivity of graduates in licensure exams and contribute to higher passing rates.**

***Keywords*— Board exam, engineering students, memorization, problems, strategies, techniques, topnotcher.**

***JEET Category*— Research Paper**

I. INTRODUCTION

ENGINEERING plays a big role in the world of modernization. One of its fields is the electrical engineering. It is a fast-changing field that demands ongoing education to remain current with technological advancements (Sibanda, 2024), and a well-defined field with specific laws that must be understood to meet its core principles and to uncover that may not be apparent to the casual observer (Serafin, 2024). Innovative teaching strategies such as gallery walk, poster presentations, and case-based active learning have been shown to enhance student engagement and performance in engineering classrooms (Kumbhar et al., 2024, More & Kadam, 2022). Similarly, strengthening critical thinking and adopting persuasive learning strategies have been emphasized as crucial for preparing 21st century learners to meet the demands of engineering education (Prapulla et al., 2022, Alok et al., 2020). Furthermore, self-regulated learning (SRL) has been identified as a key strategy for engineering students and faculty in improving focus and readiness (Vedhathiri, 2021), while empirical evidence shows that critical thinking skills are essential for success in electrical engineering and computer science courses (Asif et al., 2024).

The engineering licensure exam is significant in engineering courses. It is considered a tool for measuring and ensuring the quality of engineers to be deployed in the country and abroad, hence, passing the said exam is one of the greatest achievements in one's life (Mohammed, 2017). In the Philippines, licensure exam results significantly impact a school's performance, as schools are expected to consistently exceed the national passing rate (Abaigar & Varela, 2021). According to the "New Electrical Engineering Law" or Republic Act 7920, to officially register as an electrical engineer in the Philippines, applicants must have passed the Registered Electrical Engineer (REE) Licensure Examination. The said examination covers three groups of subjects Mathematics Subjects, Engineering Sciences and Allied Subjects, and Electrical Engineering Professional Subjects weighing 25%, 30% and 45%, respectively. The passing general weighted average shall be seventy per cent (70%) with no grade below fifty (50%) in any group of subjects mentioned above. This examination is held twice a year and is regulated by the Professional Regulatory Commission (PRC) spearheaded by the Board of Electrical Engineering (BEE).

However, passing this exam requires adequate preparation and is one of the crucial parts for electrical engineering graduates how are they going to prepare for the licensure examination considering the massive number of subjects? It takes time, self-discipline, patience and determination and is impossible without prayers, support and encouragement (Manalo & Obligar, 2013). The licensure exam preparation is crucial, resulting in some difficulties for the exam takers which covers psychological preparedness, self-motivation, study techniques, time management, and coping mechanisms which are all relevant in different courses (Sumicad et al., 2023). Research also indicates that integrating active learning and SRL strategies into exam preparation can strengthen students' ability

B. G. Ampuan
Department of Electrical Engineering, University of Eastern Philippines, Catarman, Northern Samar Philippines.
bless.ampuan@uep.edu.ph

to overcome these challenges (Vedhathiri, 2021; Kumbhar et al., 2024).

Moreover, students encounter specific and real issues during exams which leads to mental stress and distress that shows a negative impact on their performance, such as inadequate physical environment, poor management and administration of exams and several technical errors which contribute to discomfort and dissatisfaction to students (Sadiq & Saeed, 2017). Some of the problems encountered are the capability to comprehend questions in exams, hours allotted in reading review materials, conflict of schedule in review classes and one's work, family pressure, and lack of financial support (Lacanilo & Carpio, 2022).

This study aimed to determine the challenges encountered and coping strategies by electrical engineering graduates during their licensure examination. This can provide enhancement to the support systems, mitigate the challenges, and improve the performance of the electrical engineering graduates.

II. METHODOLOGY

A. Participants

The Bachelor of Science in Electrical Engineering (BSEE) is one of the university's offered engineering programs and is well-known for producing board placers and numerous licensure exam passers. Hence, this study sought to determine the challenges and coping strategies of the successful electrical engineers of the University of Eastern Philippines – Main Campus who passed the licensure exam from 2010 to 2019.

Stratified sampling was employed in this study to ensure that the sample was representative of the entire population of successful electrical engineering graduates from the University of Eastern Philippines, which divides the population into subgroups or strata based on the year when they passed the exam and then selects samples from each stratum, and utilizing Slovin's Formula, as in (1), to compute the sample size from each batch (N) which allows for more accurate and reliable findings, with a 10% margin of error (e).

$$n = \frac{N}{1+Ne^2} \quad (1)$$

Since there are 235 who passed the Registered Electrical Engineers Licensure Examination, for batches 2010-2019, the total sample size from each batch is 70.

B. Instrumentation

A qualitative approach was used in this study, utilizing a survey questionnaire. The questionnaire was formulated by the researchers and validated by an expert in this university and it was encoded to Google Forms.

C. Data Collection and Data Analysis

This study was approved by the university through the university Research, Development, and Extension (RDE) Office. The Google forms were sent to the successful electrical engineers through their respective Facebook Messengers. The data gathered from the Google form were converted and tabulated in Microsoft Excel and analyzed using frequency counts and percentages.

TABLE I
CHALLENGES ENCOUNTERED BY THE ELECTRICAL ENGINEERING GRADUATES

Challenges	Frequency	Percentage
Distractions	44	62.86%
Inadequate concentration	40	57.14%
Numerous formulas to memorize	37	52.86%
Financial Problems	35	50.00%
Societal expectations	33	47.14%
Tardiness	24	34.29%
Numerous take-home exercises provided by the review center	23	32.86%
Homesick distress	20	28.57%
Inadequate readiness	19	27.14%
Time mismanagement	18	25.71%
Deficient problem solving capabilities	14	20.00%
Discrepancies in review materials	13	18.57%
Lack of wakefulness in review classes	8	11.43%
Deficient reading capabilities	6	8.57%
Health issues	3	4.28%

III. RESULTS AND DISCUSSION

A. Challenges Encountered

Table I enumerates the list of challenges encountered by the respondents during their board exam preparation.

The most frequent problem faced among electrical engineering graduates is distractions (62.86%), indicating a significant issue in the licensure exam preparation. Similar findings by Baranao et al. (2022) concluded that this is a concern as it can lower the concentration of students, especially during blended learning, and Cabahug et al. (2024) added that bad study habits contribute to exam difficulties. Distractions happen when something pulls a person or group away from what they should be focusing on, making it harder for them to take in important information (Soyemi, 2020). These are common to college students as they do not study in an isolated environment (Brady et al., 2021). This is because some of students get distracted if they feel tired, fatigued, hungry, emotional, and anxious about tasks they need to accomplish ahead (Baranao et al., 2022), and the use of phones during study session (Soyemi, 2020).

Poor concentration (57.14%) is also common issue among electrical engineering graduates, indicating that some of them encountered difficulties in concentration. This supports the findings of Cabahug et al. (2024), who found that the absence of concentration on topics contributes to the difficulties of the examination. Based on the findings of this study, most of the distracted student (62.86%) get poor concentration (57.14%).

A close proportion among electrical engineering graduates encountered numerous formulas to memorize (52.86%),

indicating a significant problem in retaining the volume of formulas. While memorizing formulas is crucial for problem-solving, serving as the foundation of engineering courses (Abaigar & Varela, 2021), it also presents a significant challenge for students (Morado & Varela, 2020). This is related to the findings of Pillado (2020), who concluded that memory retention is a significant factor and highly affects the performance of students in mathematics. Students are finding it hard to remember the material because they often get distracted (Podila, 2019). This corresponds also to the first finding of the study that the "distraction" which earned as the most frequent problem encountered, caused the problem on the memorization of formulas among electrical engineering graduates, considering that engineering subjects deals with numerous formulas. A mathematical disposition study on engineering students conducted by Morado & Varela (2020) revealed that some students possessed a positive disposition towards mathematics studies. This finding contradicts on the present study's results, likely due to the broader subject coverage Specifically, the present study, encompassing formulas across all subjects, appears to lead to less effective formula memorization compared to Morado and Varela's study, which focused solely on Calculus and found it to be efficacious.

Half of electrical engineering graduates encountered financial problems (50.00%), indicating that these are a common issue among the electrical engineering examinees. This is because of the economically disadvantaged backgrounds among engineering students (Banawis et al., 2023). Similar challenges have been reported among criminology (Lacanilo & Carpio, 2022), accountancy students (Micabalo & Cruspero, 2022) and nursing students (Jose et al., 2011). Another similar study highlighted that the socio-economic factors contributes to the exam difficulties among professional teacher examinees (Cabahug et al., 2024). This reveals that financial problems are a widespread challenge encountered by the students across various field of study.

Nearly half of the electrical engineering graduates are affected by the weight of societal expectations (47.14%), indicating an effect on their performance in the exam. Part of these is the peer relationships, which Hang-Phuong Nguyen-Thi et al. (2024) and Swanson et al. (2011) reported that these are linked to adolescents' mental health instability. Another societal expectations' issue is the family pressure which is reported by Lacanilo & Carpio (2022) as a common challenge among criminology examinees. Ramirez et al. (2024) added that some criminology topnotchers faced these significant pressures also during their exam.

Almost the same proportion for tardiness (34.39%) as a significant issue but not that most pressing than the others. This complements the study of Garciano (2024), highlighting the problem encountered by the teachers on the tardiness of the students which may affect the productivity of the students in school.

Cabahug et al. (2024), who found that study habits can contribute to the examination difficulties of students. This corresponds to the the findings of the present study, indicating that numerous take-home exercises provided by the review center (32.86%) are issues for a substantial proportion of respondents which is a significant concern for some in their study preparation, and over a quarter proportion of respondents encountered homesick distress (28.57%) which is the issue of the sudden new environment of the affected respondents.

TABLE II
COPING STRATEGIES BY THE ELECTRICAL ENGIEERING GRADUATES

Coping Strategies	Frequency	Percentage
Create a relax study environment	53	75.71%
Early preparation	43	61.43%
Understand the formula	42	60.00%
Practice by solving more problems	42	60.00%
Prepare a study plan	40	57.14%
Use of review materials gathered from the review center	39	55.71%
Move away from the situation and remember what is important to me	36	51.43%
Set an alarm for the review class	35	50.00%
Apply several problem-solving strategies	34	48.57%
Keep in touch with my friends and family back home and stay motivated	33	47.14%
Taking notes while reading	29	41.43%
Take enough sleep before the review class	31	44.29%
Eliminate distractions and tried to focus on the moment	26	37.14%
Prayer	21	30.00%
Awareness on Health Education	7	10.00%

However, some of the electrical engineering graduates raised issues on inadequate readiness (27.14%) which is a concern for some. Similar findings to the reports presented by Liaw et al. (2020) reflecting that lack of preparation is one of the weaknesses in passing the engineering exam.

A notable issue but not as highly encountered as the others is time mismanagement (25.71%), a less relevant issue is the deficiency in problem-solving capabilities (20.00%) which suggests that the respondents might be equipped in these skills during their undergraduate study, a minor concern for the others is the discrepancies in review materials (18.15%) which indicates that the relevance of reliable resources, and a smaller portion of respondents encountered a lack of wakefulness in review sessions (11.43%) which suggests a less frequent problem.

However, there is a smaller proportion of respondents were deficient in reading capabilities (8.57%). This reflects that

among the electrical engineering graduates, most of them are good in reading. This slightly contradicts the study of Lacanilo & Carpio (2022), who discovered that students are moderately affected by their ability to comprehend questions. This difference may be due to the distinct nature of exams in the Criminology Licensure Exam and Electrical Engineer Licensure Exam. The engineering exam focuses more on problem-solving.

Some respondents brought up the health condition problems (4.28%) as part of their struggles. Though this is not common, but it was reported that the chronic physical conditions are a growing population which may be associated with poor mental well-being and prone to suicidal ideation among Canadian school-attending young adults (Virk et al., 2023). Zając et al. (2023) added that the Australian undergraduate student mental health problems are very alarming as one of the causes of drop-outs among Australian universities. In the Philippines, it was reported that the majority of the university students experienced moderate to severe levels of depression and anxiety symptoms, particularly in the aftermath of the COVID-19 pandemic (Bangalan & Claudette, 2024).

B. Coping Strategies

Table II shows the list of coping strategies employed to address the challenges encountered among electrical engineering graduates. Findings revealed that most of them employed the creation of relaxed study environment (75.51%) to minimize distractions, suggesting that a conducive learning environment may enhance the focus and productivity of the students. This aligns with prior studies which emphasize the role of learning strategies in transforming engineering education (Alok et al., 2020) and the importance of SRL in supporting student achievement (Vedhathiri, 2021). Several studies reported the critical necessity of a conducive learning environment for student academic achievement in the Philippines (Ramos, 2022, Chan-Anteza, 2020) and also in other countries like Nigeria (Madudili, 2021). Ramos (2022) added that designing the conducive learning environment directly influenced the struggles experienced by the students, especially during the new normal.

More than half of the electrical engineering graduates employed an early preparation (61.43%) to mitigate the inadequate readiness, indicating that a proactive planning strategy could be effective. Active learning methods such as Think-Aloud Pair Problem Solving have also been proven to boost student readiness and problem-solving efficiency (More & Kadam, 2022). The same key strategy employed by Filipino criminology exam topnotchers, implicating the importance of thorough preparation (Ramirez et al., 2024).

The same proportion of respondents employed the understanding of the formula and practice by solving more problems (60.00%), to mitigate the numerous formulas to memorize and deficient-problem-solving skills, respectively, indicating that hands-on practice and deeper comprehension are significant in mastering the subjects. This finding resonates with the empirical evidence that critical thinking directly impacts performance in engineering courses (Asif et al., 2024).

A close one, respondents created a structured study plan (57.14%) which highlights the relevance of organization and time management. Comparable findings by Prapulla et al. (2022) revealed that balance and efficiency serve as essential strategies among engineering learners seeking to strengthen their critical thinking skills. Similarly, Ramirez et al. (2024) reported that criminology topnotchers employed the same approach, further affirming the effectiveness of structured and well-managed study practices across disciplines.

Some the electrical engineering graduates utilized the review materials gathered in the review center (55.71%) to mitigate the problem on the discrepancies on the review materials among review centers, indicating the relevance of the comprehensive and reliable materials in the review center.

Near a half proportion of the respondents takes time to reflect on personal priorities to aid poor concentration, indicating that prioritizations are effective in managing the external pressures. Ramirez et al. (2024) reported that goal-setting is one of the coping strategy of some criminology topnotchers.

Half of the respondents used reminders such as alarms for study sessions or reviews (50.00%) to mitigate tardiness. Ramirez et al. (2024) reported that the importance of review session participation among criminology topnotchers.

Less than a half proportion of electrical engineering graduates employed various problem-solving strategies (48.57%) to aid deficiency on problem solving capabilities, and keeps in touch with friends and family (47.14%) to minimize homesick distress which indicates the role of social support in enhancing the emotional aspects of the students. Banawis et el. (2023) emphasized that parental support is crucial for students to adapt quickly.

Some of the electrical engineering graduates takes enough sleep before the review class (44.29%) which indicates that adequate sleep will boost the alertness of the students during review classes. Aside from adequate sleep, Ramirez et al. (2024) reported the important of physical exercise during the licensure preparation.

They employed the taking of notes while reading (41.43%) to aid the deficiency on reading capabilities, and more than a quarter of them said that focusing and removing distractions would help them concentrate better (37.14%),

Some of the successful engineering graduates opened and suggested that praying (30.00%) is an effective strategy. This is one of the key strategies also of the criminology topnotchers (Ramirez et al., 2024).

A very small percentage—10.00%—of respondents brought up that awareness on health education could be helpful for some. This coping mechanism is also reported to some Canadian school-attending young adults (Virk et al., 2023) and Australian undergraduate students (Zając et al. (2023), where health promotion must be considered. Bangalan & Claudette (2024) added that the development of possible interventions to prevent the worsening of mental health problem such as anxiety and depressive symptoms among Filipino university students must be addressed.

CONCLUSIONS

The findings of this study highlights that the electrical engineering graduates face a variety of challenges as they prepare for their licensure exams. Distractions stand out as the most common dilemma (62.86%), making it harder for them to stay focused (57.14%) and memorize key formulas (52.86%). This echoes what other studies have found about how distractions and bad study habits can lead to difficulties in exams. Financial struggles (50.00%) and societal pressures (47.14%) also weigh heavily on many students, pointing to broader issues that extend beyond just academics. While problems like tardiness, lack of preparation, and inconsistent review materials are less frequent, they still add to the overall difficulty of exam preparation. Ultimately, these challenges highlight the importance of creating strategies that help students stay focused, manage distractions, and improve their readiness for the exam.

Electrical engineering graduates employed various coping strategies to manage the challenges of their board exam preparation. The most common approach was creating a relaxed study environment (75.51%) to minimize distractions, emphasizing the importance of a conducive space for learning. Early preparation (61.43%) to mitigate the inadequate readiness, reflecting the relevance of readiness in the exam. The practice of solving more problems and understanding formulas (60.00%) were also key strategies, highlighting the value of proactive planning and deep comprehension.

Many graduates used structured study plans (57.14%) to aid time mismanagement, reliable review materials (55.71%) to mitigate the discrepancies in review centers, and reminders (50.00%) to stay organized. Additionally, social support from family and friends (47.14%) to minimize homesick distress, adequate sleep (44.29%) to aid tardiness, and personal reflection helped them manage stress. Lesser but still significant strategies included prayer (30.00%) and focusing on removing distractions (37.14%), while a small number (10.00%) saw health education as beneficial. These findings reflect the importance of both academic and emotional strategies in overcoming exam-related challenges.

This study can help electrical engineering students understand the difficulties they might face while studying and suggest ways to handle them better. Educators and mentors can use this information to create programs and resources that help students overcome common challenges. Insights from the study suggest the need for policies that address socio-economic barriers to help students with financial problems, like offering scholarships or grants, so they can focus on their studies without worrying about money. Additionally, integrating mental health services into the academic experience could help students cope with societal pressures and exam anxiety. Schools and review centers should offer more specific help, like teaching students how to stay focused and manage their time better. They could also provide programs to help students relax. Plus, schools could create a better learning environment to help students study more effectively. This study could lead to more research on how these coping strategies help students do well on exams and how things like family support and peer pressure affect them. Further studies can be generated if these findings apply to other subjects and fields. Overall, the study highlights the importance of a holistic approach that addresses both the academic and emotional needs of students to help them succeed in their licensure exams.

APPENDIX

C. Survey Questionnaire

Please complete this survey questionnaire accurately and frankly. Your answer will be used for research purposes in order to review the strategies and the practices of successful electrical engineers of your alma mater, University of Eastern Philippines – Main Campus.

Part I. Challenges encountered Among Electrical Engineering Graduates during their licensure exam preparation

Direction/Instructions: Identify the challenges you encountered during your board exam preparation and please specify other related challenge for each indicator. Please put a check (/) to the items that are all applicable.

_____1. Inadequate readiness
Please specify other related challenge: _____
_____2. Time mismanagement
Please specify other related challenge:
_____3. Deficient problem-solving capabilities
Please specify other related challenge: _____
_____4. Deficient reading capabilities
Please specify other related challenge: _____
_____5. Inadequate concentration
Please specify other related challenge: _____
_____6. Homesick distress
Please specify other related challenge: _____
_____7. Distractions
Please specify other related challenge: _____
_____8. Tardiness
Please specify other related challenge: _____
_____9. Lack of wakefulness in review classes
Please specify other related challenge: _____
_____10. Numerous take-home exercises provided by the review center
Please specify other related challenge: _____
_____11. Discrepancies in review materials
Please specify other related challenge: _____
_____12. Numerous formulas to memorize
Please specify other related challenge: _____
_____13. Societal expectations
Please specify other related challenge: _____

Part II. Coping strategies employed Among Electrical Engineering Graduates during their licensure exam preparation

Direction/Instructions: Identify the coping strategies you employed during your board exam preparation and please specify other related challenge for each indicator. Please put

a check (/) to the items that are all applicable.

_____1. Early preparation
Please specify other related coping strategy: _____
_____2. Prepare a study plan
Please specify other related coping strategy: _____
_____3. Understand the formula and practice as much as they can
Please specify other related coping strategy: _____
_____4. Taking notes while reading
Please specify other related coping strategy: _____
_____5. Eliminate distractions and tried to focus on the moment
Please specify other related coping strategy: _____
_____6. Keep in touch with my friends and family back home and stay motivated
Please specify other related coping strategy: _____
_____7. Create a relax study environment
Please specify other related coping strategy: _____
_____8. Set an alarm for the review class
Please specify other related coping strategy: _____
_____9. Take enough sleep a night before the review class
Please specify other related coping strategy: _____
_____10. Apply several problem-solving strategies
Please specify other related coping strategy: _____
_____11. Use of review materials gathered from the review center
Please specify other related coping strategy: _____
_____12. Practice by solving more problems
Please specify other related coping strategy: _____
_____13. Move away from the situation and remember what is important to me
Please specify other related coping strategy: _____

ACKNOWLEDGMENT

The researcher would like to express his sincere gratitude to the UEP Administration, led by Dr. Cherry I. Ultra, for supporting this study in a form of fund, to Dr. Karina Milagros Cui-Lim, Vice President for Research, Development, and Extension, for the assistance in the finalization of the paper, to Dr. Tito Cabili for validating the questionnaire, and to all the respondents of this study who have shared their time on answering the survey questionnaire through google form.

REFERENCES

Abaigar, K. B. F., & Varela, B. D. (2021). Mathematical Skills and the Academic Performance of Junior and Senior Electrical Engineering Students of the University of Eastern Philippines. *Journal of Engineering Research and Reports*, 20–31. https://doi.org/10.9734/jerr/2021/v20i317276.

Alok, G., Saipriya, P., & Prabhanjan, N. (2020). Persuasive learning strategies for transforming engineering education. Journal of Engineering Education Transformations, 33(Special Issue), 402–407. Scopus.

Asif, H. M., Sadiq, M. A. K., Kausar, F., & Ahmad, A. (2024). Empirical Analysis of Critical Thinking in Electrical Engineering and Computer Science Courses. Journal of Engineering Education Transformations, 37(4), 85–93. Scopus. https://doi.org/10.16920/jeet/2024/v37i4/24161.

Banawis, K. P., De, C. A., Fortune, M., Fabiala, M. M., Jao, E. B., Morado, L. I., & Salazar, R. E. (2023). Readiness, Attitude, and Acceptability of Engineering and Technology Students Toward Flexible Learning Method. *Asian Journal of Education and Social Studies*, *42*(1), 39–47. https://doi.org/10.9734/ajess/2023/v42i1908.

Barañao, E. L., Mariano, A. A. C., Nanit, J. N. V., & Samson, K. C. F. (2022). Distractions and Coping Mechanisms in Blended Learning of Grade 10 Students in Philippine School Doha, S.Y. 2021-2022. *International Journal of Research Publications*, *97*(1). https://doi.org/10.47119/ijrp100971320222988.

Brady, A. C., Kim, Y. eun, & Cutshall, J. (2021). The What, Why, and How of Distractions from a Self-Regulated Learning Perspective. *Journal of College Reading and Learning*, *51*(2), 153–172. https://doi.org/10.1080/10790195.2020.186767.

Cabahug, M. M., Bonghanoy, S. M. A., Jr, J. T., Asingua, A. B., Chen, Q., & Tul-id, C. S. (2024). Graduates Are Failing in the Examination: An Ethical Investigation on the Experiences of Board Licensure Examination for Professional Teachers (BLEPT) Takers. *American Journal of Multidisciplinary Research and Innovation*, *3*(2), 1–6. https://doi.org/10.54536/ajmri.v3i2.2514.

Bangalan, S. G., & Claudette, M. (2024). A mixed-methods study on the assessment of the mental health concerns among university students in the Philippines. *Current Psychology*. https://doi.org/10.1007/s12144-024-05777-0.

Chan-Anteza, T. K. (2020). Management of a Conducive Classroom Environment: A Meta-synthesis. *Management*, *11*(26), 54-70. https:// doi.org/10.7176/jep/11-26-06.

Garciano, A. (2024). Addressing Students' Tardiness in the New Form of Face-to-Face Classes: Narrations of Teachers. *Nexus International Journal of Science and Education*, *1*(1). https://nijse.org/index.php/home/article/view/46

Jose, A. D., Jawili, M. M., Lagasca, M. C., Lapie, E. L., Laquiores, F. B. & Ligores, G. C. (2011). An Assessment on the Strategies Utilized by the Nursing Licensure Exam Passers of Colegio De San Juan De Letran Calamba. *Ani: Letran Calamba Research Report*, *1*(1), 1–1. https://ejournals.ph/article.php?id=738.

Hang-Phuong Nguyen-Thi, Anh Ngoc Truong, Vy Truc Le, Thanh, X., & Vinh-Long Tran-Chi. (2024). The Relationship between Academic Performance, Peer Pressure, and Educational Stress as It Relates to High School Students' Openness to Seeking Professional Psychological Help. *Journal of Curriculum and*

Teaching, *13*(1), 83–83. https://doi.org/10.5430/jct.v13n1p83.

Institute of Integrated Electrical Engineers of the Philippines, Inc. (n.d.). Iiee.org.ph. https://iiee.org.ph/module?id=15&name=ABOUT%20US.

Kumbhar, P. D., Patil, Y. M., & More, S. K. (2024). Comparative Study on Students' Performance Using Gallery Walk and Poster Presentation Techniques. Journal of Engineering Education Transformations, 37(Special Issue 2), 326–333. Scopus. https://doi.org/10.16920/jeet/2024/v37is2/24057.

Lacanilao, O. G., & Carpio, C. J. (2022). Indicators Affecting the Examinees in Taking the Board Examination for Criminology. *EPRA International Journal of Multidisciplinary Research*, 276–279. https://doi.org/10.36713/epra10673.

Liaw, G.-S., Saha, P., & Foreman, J. (2020). *Preparing Minority Engineering Students to Pass the Fundamentals of Engineering Examination*. https://doi.org/10.18260/1-2--3701.

Madudili, C. G. (2024). Conducive Learning Environment: A Critical Necessity for Students' Academic Achievement in Nigeria. *Journal of Science Education & Allied Disciplines*, *3*(1). https://www.josead.com/index.php/JOSEAD/article/view/11.

Mohammed, M. P., & Mohammed, M. P. (2017). Licensure examination performance evaluation of the candidate engineers as basis for a proposed action plan. *Asia Pacific Journal of Multidisciplinary Research*, *5*(2), 51-57.

Morado, L. I., & Varela, B. D. (2021). Mathematical Dispositions of Graduating Students of the College of Engineering, University of Eastern Philippines (UEP). *Asian Research Journal of Mathematics*, 54–64. https://doi.org/10.9734/arjom/2020/v16i1230253.

More, S. S., & Kadam, D. M. (2022). Effectiveness of Think Aloud Pair Problem Solving and Case Study based Active Learning Techniques for Engineering Classroom. Journal of Engineering Education Transformations, 36(special issue 2), 419–424. Scopus. https://doi.org/10.16920/jeet/2023/v36is2/23063.

Prapulla, S. B., Patra, S. M., Subramanya, K. N., & Uma, B. V. (2022). Techniques for Strengthening 21st Century Learners' Critical Thinking Skills. Journal of Engineering Education Transformations, 36(special issue 2), 512–518. Scopus. https://doi.org/10.16920/jeet/2023/v36is2/23078.

RA7920 (New Electrical Engineering Law) An Act Providing for a More Responsive and Comprehensive Regulation for the Practice, Licensing, and Registration of Electrical Engineers and Electricians. (n.d.). https://prc.gov.ph/uploaded/documents/prbelec.pdf.

Ramirez, N. B., Mae, P., Planas, R. B., & Guiyab, J. D. (2024). Unlocking Board Exam Clues: Best Practices of Regional Topnotchers in the Criminologist Licensure Examination. *International Journal of Research and Innovation in Social Science*, *VIII*(VIII), 2572–2579. https://doi.org/10.47772/ijriss.2024.8080196.

Ramos, S. E. (2022). Conducive learning environment: Avenue in coping student's struggle in the new normal. *International Journal of Research Publications*, *101*(1), 419-426.

Micabalo, K., & Cruspero Jr, E. (2022). Factors Affecting Accountancy Graduates' Readiness for The Certified Public Accountant Licensure Examination. *International Journal of Research in Commerce and Management Studies*, *04*(03), 116–135. https://doi.org/10.38193/ijrcms.2022.4307.

Pillado, I. A., Futalan, M. C. Z., & Comighud, S. M. T. (2020). Factors on Memory Retention: Effect to Students' Academic Performance. *International Journal for Research in Mathematics and Statistics*, *6*(4), 1–24. https://doi.org/10.5281/zenodo.3780621.

Podila, S. P. (2019). Concentration, Memory and Gender - A Case Study on High School Students. *International Journal of Scientific Research in Science and Technology*, 756–760. https://doi.org/10.32628/ijsrst1962161.

Serafin, C. (2024). Electrical Engineering and its Aspects in the Modern Concept of Technical Education. *R&E Source*, 229–244. https://doi.org/10.53349/resource.2024.is1.a1258.

Sibanda, M. (2024). The Case for Open Educational Resources in Electrical Engineering. *Online Teaching and Learning in Higher Education*, 165–182. https://doi.org/10.1007/978-3-031-56953-1_10.

Soyemi, O. (2020). Analysis of Classroom Distractions in Tertiary Institutions. http://eprints.federalpolyilaro.edu.ng/277/1/Cross_Border_Paper.pdf .

Sumicad, R. P., Balanga, E. A. C., Cuevas, G. C., Gimarangan, R. T., Pacaldo, J. M., & Lawan, A. M. (2023). Perceived Psychological Preparedness of the New Tertiary Curriculum Graduates in Taking the Professional Board Examination. *Journal of Learning and Development Studies*, *3*(3), 01-26. https://doi.org/10.32996/jlds.2023.3.3.1.

Swanson, S. A., Crow, S. J., Le Grange, D., Swendsen, J., & Merikangas, K. R. (2011). Prevalence and Correlates of Eating Disorders in Adolescents. *Archives of General Psychiatry*, *68*(7), 714. https://doi.org/10.1001/archgenpsychiatry.2011.22.

Vedhathiri, T. (2021). Self-regulated learning (Srl) strategies on engineering faculty members, executives, and students. Journal of Engineering Education Transformations, 35(2), 18–28. Scopus. https://doi.org/10.16920/jeet/2021/v35i2/22068.

Virk, P., Doan, Q., & Mohammad Ehsanul Karim. (2023). Chronic physical conditions and suicidal ideation: a population-level analysis of Canadian school-attending young adults. *Journal of Mental Health*, 1–8. https://doi.org/10.1080/09638237.2023.2245904.

Zając, T., Perales, F., Tomaszewski, W., Xiang, N., & Zubrick, S. R. (2023). Student mental health and dropout from higher education: an analysis of Australian

administrative data. *Higher Education, 87*. https://doi.org/10.1007/s10734-023-01009-9.