

Research Article

Crossing the Licensure Threshold: A Phenomenological Study of Registered Electrical Engineering Licensure Examination Passers.

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Abstract:

Professional licensure exams are instrumental in ensuring a competent technique and upholding of standards in regulated professions like engineering. This research paper has examined the lived experiences of the Electrical Engineering graduates who have successfully passed the Registered Electrical Engineering licensure examination. The research applied to a qualitative phenomenological study design and involved the exploration of how the examinees competed their preparation process, academic and psychological difficulties, and the meaning of passing the licensure examination. With the help of thematic phenomenological analysis, data were gathered by conducting an in-depth interview with purposely chosen participants. Results showed three key themes, which include disciplined academic preparation and strategic learning, psychological resilience and self-efficacy in the examination success, and transformation of professional identity upon reaching the licensure threshold. The respondents emphasized the need to have well defined study schedules, group learning, self-confidence, and the support of social networks to stay motivated throughout the process of review. The licensure examination became a milestone that revolutionized the engineering profession and enhanced professional confidence and willingness to join the engineering profession.

Keywords: Electrical Engineering Licensure Examination, phenomenological research, self-efficacy, professional identity formation, engineering education

1. Introduction

Professional licensure examination is a significant key of competence and standard upkeep in controlled professions such as engineering. These exams are gatekeeping processes that ensure that graduates possess the theoretical, technical capability as well as professional readiness to practice safely and effectively. Registered Electrical Engineering licensure exam is a significant academic and professional milestone that does not just allow one to be certified as competent but also shapes the professional personality and career of an engineering graduate. Besides the element of knowledge measurement, licensure examinations also have psychological, cognitive and social elements that influence the preparation and performance of the test takers. Therefore, the study of the lived experiences of successful examinees can serve to benefit in learning the multifaceted processes that are involved in the achievement of a license.

The current paper is based on the Self-Efficacy Theory of the Social cognitive theory where it is assumed that the beliefs people have in their abilities play a major role in their motivation, persistence, and performance on harder tasks. Academic self-efficacy has been generally recognized as an excellent predictor of learning behaviour among students and academic performance, especially in high stakes tests such as final examination and professional qualification tests. Empirical studies indicate that students with high scores in self-efficacy are more likely to show greater perseverance, have more effective learning approaches and achieve higher performance compared to their low self-efficacy counterparts. Further, academic performance and self-efficacy tend to have a reciprocal correlation in that good performance experiences build self-efficacy and high efficacy beliefs build performance results. (Honicke et al. 2023; Zhai, 2025)

Psychological and contextual factors have also recently been noted as the highly important determinants of examination success. As an example, studies on academic performance in university students have discovered that self-efficacy, motivation, and learning conditions are interdependent on one another and impact academic performance and the persistence to learn in students (Escarlos et al., 2025). Moreover, Zheng (2024) claimed that academic self-efficacy shows that the confidence that students can complete the academic tasks influences their motivation, goal-setting behavior, and participation in the academic endeavors, which are difficult. Within the framework of high-stakes exams, Cabras et, al. (2024) hypothesize that even academic performance is mediated by self-efficacy, indicating that the students who believe more in their efficacy can better handle the pressure of the academic study and preserve the effective study habits. The findings mentioned above can be used to hypothesize that the rate of success of the licensure examination passers can be influenced not only by cognitive preparation but also by psychological strength and self-confidence.

Qualitative research studies on licensure examinations also indicate that the process of professional board examination preparation is usually transformative. Phenomenological studies revealed that the examinees undergo various emotional and social experiences in their preparation process, which are anxiety, motivation, social support, and self-reflection. The studies of the lived experiences of candidates to board examinations show that the process of preparing to take licensure tests is related to living with uncertainty, finding motivation in family and peers, and perceiving the test results as potentially life-changing events (Binayao and Dales, 2020;

Amedo and Petalla 2025). Although literature on licensure examination has been increasing over the years, a significant portion of the literature tends to concentrate on quantitative predictors of examination performance, but not the life experience of passed examinees, especially in the field of engineering. Thus, a phenomenological approach to the study of the experience of Registered Electrical Engineering licensure examination passers can help to understand better what cognitive, emotional and social elements help people to successfully overcome the licensure threshold.

The paper set out to study and learn about the lived experiences of Electrical Engineering graduates who have passed Registered Electrical Engineering Licensure Examination and how they managed to cope with the preparation process, which is the academic struggles, psychological pressures, and learning strategies that they experienced prior to and during the examination period. It tries more to determine what the personal, academic and social factors that contributed to their success were, especially those aspects that were associated with self-efficacy, motivation, their study habits and support or lack of support by family, peers and the schooling institutions. In addition, the research will aim at characterizing the meaning and reflections that respondents associate with their licensure examination experience and how they successfully passed the examination influenced their professional identity, confidence and perceptions of preparedness to join the engineering profession.

2. Research Design

The qualitative phenomenological research design was used in this study to examine the lived experiences of Electrical Engineering graduates who passed the Registered Electrical Engineering licensure examination. Phenomenology is a qualitative methodology that aims to comprehend the way people sense and make sense out of special life events and the ways individuals create meaning in their lives based on the events. Instead of measuring variables, phenomenological inquiry is designed to represent the nature of the lived realities by participants and therefore includes subjective perceptions, feelings, and thoughts of the participants (Neubauer et al., 2019). Phenomenology offers a suitable methodological perspective in the context of professional licensure examinations since it will enable a researcher to examine the experiences of the examinee during the preparation process, facing academic and psychological obstacles, and understanding the significance of passing the examination. The recent qualitative studies underline that phenomenological methods can be effectively applied in education research that is useful in investigating the intricate learning processes and identity development in graduates entering the workforce (Moser & Korstjens, 2021). Therefore, this design will allow the study to bring more insight into the question of how Electrical Engineering graduates navigate through the process of licensure and how these experiences of the graduates influence their professional identity.

2.1 Participants of the Study

The sample of this experiment was the group of Electrical Engineering graduates that had passed Registered Electrical Engineering Licensure Examination. The purposive sampling was used to select the people who could give detailed and significant accounts of their experiences regarding the process of preparing and passing the licensure examination. The purposeful sampling technique is a popular tool in qualitative studies due to its possibility to deliberately choose the participants that are interested in the phenomenon under research and have personal knowledge and experience about it (Campbell et al., 2020). In phenomenological studies, the researcher tends to select subjects on how they are capable of giving elaborate reflections that shed light on the nature of a common experience. Following methodological guidelines of phenomenological research, the study selected the participants ranging between eight to twelve, which is believed to be enough to attain the depth of understanding and at the same time, elaborate the accounts of the participants. These respondents were chosen to reflect the group of people who completed the procedure of the licensure exam preparation and passing and, therefore, allowed the research to reflect different points of view on the aspects of their academic preparation, psychological experiences, and the vision of success.

2.2 Data Gathering and Analysis

Thematic phenomenological analysis was applied in analysis of the data collected, which is a methodology that implies determining patterns of meaning within the narratives of the participants in order to describe the nature of the experienced experience. The analysis adhered to some systematic steps which are usually applied to phenomenological research. The interview tapes were first transcribed word-to-word so that the accounts of the participants could be recorded during the interview. The researcher then critically examined the transcripts to come up with important statements that portrayed the experiences of the participants in regard to preparing and passing of the licensure examination. These utterances were then deciphered to come up with meanings that embodied the real concepts portrayed by the respondents. The meanings were then categorized into groups of themes that depicted general trends in the experience of the participants. It was in this process that textual and structural descriptions (what the participants experienced and how they experienced the phenomenon respectively) were formulated. Lastly, all these descriptions were brought together to create a comprehensive picture of what it is really like to cross the licensure threshold successfully. Thematic analysis is generally considered to be a qualitative approach that is flexible and rigorous for discovering patterns in qualitative data and still being rooted in the narratives of participants (Braun and Clarke, 2021). Through this method of analysis, the research will produce valuable information about the experiences of the graduates of the Electrical Engineering, who managed to overcome the obstacles of the licensure exam.

3. Results and Discussion

3.1 Navigating the Preparation Journey: Academic Discipline and Strategic Learning

The findings demonstrated that the Registered Electrical Engineering licensure-exam passers experienced a period of rigorous preparation cycle that was characterized by controlled studying patterns, regular review methods, and endurance in learning more intricate engineering theories. According to the respondents, they used a lot of time to review the rudimentary knowledge of electrical engineering, solve problems, and chat about technical content with their colleagues. This structured research enabled them to gain confidence on their ability to deal with the test subjects, as well as relax the examination period.

Participants emphasized the importance of consistency and disciplined study routines during their preparation phase. *"I treated the review like a full-time job. Every day I followed a schedule—reviewing circuit analysis in the morning and solving practice problems in the afternoon."* (Participant 1) *"The most important thing for me was consistency. Even when the topics were difficult, I kept solving problems until I understood the concept."* (Participant 3) *"We formed a study group during the review period. Explaining the problems to each other helped me understand the theories better."* (Participant 6) *"Sometimes the formulas and computations were overwhelming, but practicing many board-type problems helped me gain confidence."* (Participant 8).

These narratives stress on the value of academic discipline and deliberate practice in high stakes professional examination. The theory of self-regulated learning states that the most successful learners are those who plan, control and monitor their learning strategies that enable them to respond to academic challenges and persist with studying (Broadbent and Poon, 2021). Systematic review exercises and lifelong problem-solving exercises are also used in professional exams such as engineering to allow the students to augment their conceptual knowledge, and learn to analyze problems, which is needed to pass board exams.

Participants further illustrated how collaborative learning and peer engagement strengthened their preparation process. *"When we discussed problems together, someone would always explain a concept differently, and that helped me understand it better."* (Participant 2) *"Our review center encouraged group discussions, and it really helped clarify topics like power systems and control systems."* (Participant 7). The use of collaborative learning has been well established in enhancing the levels of understanding and memorizing of technical concepts by engineering students. Studies show that cooperative learning and peer discussion techniques can lead to a more profound conceptual interaction and increase the skill of students to apply theoretical learning to real-life problem-solving (Theobald et al., 2020). These results indicate that organized academic training coupled with learning with peer support play a powerful role in the readiness to the examination and the achievement of professional licensure tests.

3.2 Psychological Resilience and Self-Efficacy in Examination Success

The occurrence of another significant theme in the participants stories was the significance of psychological resilience and self-efficacy to support the nature of motivation during the licensure preparation period. Participants reported to feel anxious, self-doubting, and under pressure because of the high stakes that were linked to the licensure examination. They also had some strong convictions of their success even in these challenges, and this inspired them not to give up in their preparation. Some respondents openly shared their emotional pressures that they experienced throughout their review process. *"There were moments when I doubted if I was ready for the board exam. The coverage was huge, and sometimes I felt overwhelmed."* (Participant 4) *"The pressure was real because everyone expected us to pass. But I reminded myself that I had prepared for years during college."* (Participant 5) *"Before the exam day, I was very nervous, but I kept telling myself that I had done everything I could to prepare."* (Participant 9) The theory of self-efficacy states that the perception people have in their ability to achieve certain tasks plays a significant role in their motivation and their perseverance and performance. Students who have high self-efficacy beliefs will find it easier to tackle tough academic tasks with resolve and strength (Honicke and Broadbent, 2022). These beliefs in the case of licensure examinations enable the examinees to control their anxiety levels and to be able to focus in the challenging preparation periods.

Another point that participants stressed was the role of social support in keeping them motivated and psychologically strong. *"My family kept reminding me why I started this journey. Their support really helped me stay motivated."* (Participant 2) *"Our professors encouraged us even after graduation. They told us to trust our preparation."* (Participant 10) *"My friends in the review center were also going through the same stress, so we supported each other."* (Participant 7). The studies have repeatedly shown that positive academic climate, mentors, and student networks play an important part in enhancing self-efficacy and psychological safety of students (Schunk and DiBenedetto, 2020). Such results thus portray that in addition to intellectual training, emotional stability and social support networks are the important factors in helping the candidates to continue with their persistence and persevere through the psychological stress that come with the professional licensure exams.

3.3 Transforming Identity: Crossing the Licensure Threshold

In addition to academic success, the respondents found the Registered Electrical Engineering Licensure Examination to be a transformational event that changed their professional identity and reinforced their belief in their competence. Numerous participants went on to state that they were satisfied, proud, and validated by the outcome of their examination and that passing the licensure examination was the payoff of years of academic work and personal sacrifice.

The respondents provided strong thoughts on the time when they had realized they had passed the test. *"When I saw my name on*

the list of passers, I felt all the sacrifices were worth it." (Participant 6). *"Passing the board exam made me realize that I am now ready to take on real engineering responsibilities."* (Participant 3). *"It was a life-changing moment. I finally felt that I had earned my place in the engineering profession."* (Participant 8)

Phenomenologically, licensure tests serve as symbolic gateways between probation and professional practice as a practitioner. Professional certification does not just confirm their technical competence, but also helps individuals to make them believe in themselves and feel that they belong to a professional community. The participants also explained that the passing of the licensure examination enabled them to have more confidence in transferring engineering knowledge to real-life situations. *"After passing the exam, I felt more confident discussing technical solutions with senior engineers."* (Participant 4). *"It gave me the assurance that the knowledge I learned in college is truly applicable in the field."* (Participant 9)

The research on professional identity formation in engineers graduates indicates that the licensure and certification procedures are important in influencing professional self-concept and career dedication (Trevelyan, 2020). Likewise, the studies on engineering graduates moving to professional practice have revealed that licensure increases perceptions of professional readiness and boosts confidence in the application of technical expertise in the actual engineering settings (Male et al., 2021). The combination of these results suggests that passing the licensure threshold is not just an academic success. It is a milestone change that defines the professional identity, self-esteem, and career path of electrical engineering college graduates.

4. Conclusion

This phenomenological examination examined the lived experience of Electrical Engineering graduates that had successfully passed the Registered Electrical Engineering Licensure Examination. Disciplined academic preparations, psychological strength and conducive learning environments were discovered to be useful in defining success in the licensure examination. The participants also indicated usefulness of systematic study schedules, practice of problem solving and cooperative learning in the learning of the tricky concepts of engineering required to pass the exam. Additionally, the study revealed that emotional and self-efficacy played a significant role in sustaining motivation during the stressful preparation process. The respondents were agitated and doubting themselves, yet the influence of peers, mentors, and relatives helped them get stronger and inspired to reach the goal. This was because these support systems assisted them to withstand the pressure associated with high stake examination. Finally, the licensure exam proved to be a legendary occasion that boosted the professional identity of the participants and their self-confidence. This was what brought them to the next level of being an engineering student and becoming an engineering professional and it provided them the commitment of making a difference in the engineering profession. The findings therefore describe the intricacy of the success of licensure, which is composed of academic, psychological, and professional factors.

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