

“The Cost of Caring”: How Veterinary Students Navigate Motivation, Mentorship, and the NAVLE

David Favela
Wayland Baptist University

Vince Nix
West Texas A&M University

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This study used semi-structured qualitative interviews and focus groups with 29 veterinary students to explore, through a modified Expectancy-Value Framework, how they valued resources such as “Strengths and Opportunities” reports and faculty mentorship while preparing for the North American Veterinary Licensing Exam. Results showed that students valued mentorship and reports, but expressed concerns about time-management, inconsistent feedback, and the effectiveness of available resources. Despite high intrinsic motivation, driven by career goals, struggles with time and effort persisted. To boost confidence and performance, institutions should offer tailored support, stronger faculty mentoring, personalized feedback, and resources aligned with academic and future needs.

Keywords: Strengths and Opportunities Report (S&O), Expectancy-Value Framework (EV-F), veterinary students, North American Veterinary Licensing Examination (NAVLE)

INTRODUCTION

The North American Veterinary Licensing Examination (NAVLE) is a high-stakes exam that tests veterinary students’ capabilities and knowledge, safeguarding competent practice and serving the public’s trust (Feinberg et al., 2018). As students must pass the NAVLE to legally practice veterinary medicine (Larkin, 2024), effective test-preparation methods are essential, and scholars have explored various strategies for achieving success. Traditional methods, such as classroom-based learning and textbook study, have been the backbone of exam preparation (Khalaf & Zin, 2018; Parker et al., 2021); however, recent studies highlight a shift towards more interactive and practical approaches, including simulation-based learning, case studies, and the use of

ExamSoft's Strengths and Opportunities (S&O) reports (a post-test assessment described below), all of which have been shown to improve critical thinking and application of knowledge, both of which are essential for success on licensing exams like the NAVLE. (Casimir et al., 2023; DeBiase et al., 2020; Salleh et al., 2012).

Context and Purpose of the Study

The COVID-19 global pandemic had a considerable impact on medical education, reflected by decreased student performance and knowledge acquisition (Filho et al., 2022; Hanson et al., 2021). During the past four years, as veterinary schools have admitted students who were directly affected by pandemic-era educational disruption, NAVLE pass rates have decreased. While Karabulut-Ilgu and Burzette (2023) found no direct evidence the pandemic affected performance on the NAVLE, the historical pass-rate had been over 90%, and the International Council of Veterinary Assessment's (ICVA) 2023 annual report for licensing boards stated that the current rate was 86%, compared to 95% in 2019 (ICVA, 2023).

While the ICVA has not identified a specific cause for this recent decline (Larkin, 2024), there are reasons to believe that the pandemic made things more difficult for students taking the NAVLE. In particular, COVID-19 disrupted both traditional veterinary educational practices and NAVLE-preparation strategies. The abrupt shift to remote learning and the suspension of in-person clinical rotations posed unprecedented challenges for students and educators alike (Philpott et al., 2022). For example, the University of Arizona College of Veterinary Medicine opened its doors in 2020, but struggled to receive full accreditation in 2023 because its inaugural class only reached a 72% pass rate (Fiala, 2023); the American Veterinary Medical Association (AVMA) Council on Education expects that 80% or more of each college's students sitting for the NAVLE will have passed at the time of graduation (AVMA, 2023, Standard 11).

In order to slow or reverse that decline, it is important to both offer effective test-preparation to those taking the NAVLE, and to ensure that students see sufficient value in those resources to make them attractive. Doing so requires an understanding of the test-takers' self-assessed needs and the perceived cost-to-benefit ratio of studying; thus, the purpose of this study was to investigate how Southwest Veterinary University (SVU) students assessed the utility of the various resources provided by their institution, in the context of the value they placed on attaining a passing score for the NAVLE; this research was designed to construct a model for preparing future cohorts for success.

Problem of Practice

Veterinary students often need more motivation both to make NAVLE preparation a priority and to undertake the actual preparation itself. Pelzer et al. (2014) examined veterinary students' perceptions of their educational environment and found that factors such as curriculum overload and insufficient support mechanisms led to decreased motivation and engagement. Further research (Grakh et al., 2022; McArthur et al., 2019; Weston et al., 2017) indicated that veterinary students felt overwhelmed by the demands of their programs, hindering their efforts to prepare for critical assessments like the NAVLE. This highlights the importance of a structured and supportive educational framework in fostering motivation and effective study-habits (Routh et al., 2022).

This research study's problem of practice highlighted how students' motivation, as framed by the Expectancy -Value Framework (EV-F, described in detail below), influenced their study strategies and use of available resources while studying for the NAVLE. Students have often struggled to balance motivation and effective test-preparation efforts, and they frequently exhibit a disconnect between their anticipated performance and their self-assessed need for preparation. Two secondary issues which were concurrently explored were a) students' perceptions of ExamSoft's S&O report, and b) their assessments of how mentoring influenced their behavior in preparing for the NAVLE.

Research Questions

Students often exhibit a gap between the perceived value of test preparation and outcome expectancies related to the task. To help explore this phenomenon, the following research questions (RQ) were constructed to guide this research:

1. *According to participants, what motivates them to put effort into their studies, and how do those motivations fit into the EV-F model?*
2. *How does the EV-F provide insight into the personal values and commitments that fuel students' determination to pass the NAVLE?*
3. *According to the participants, what resources, activities, or support systems are worthwhile, considering the value placed on passing the NAVLE?*
4. *How does the EV-F explain students' perceptions about and motivations for selecting and utilizing academic resources during their NAVLE preparation?*

These RQs focused on students' perceptions of faculty mentorship and feedback, their self-reported study skills and habits (and how those influenced their coursework), and the S&O report.

THEORETICAL FRAMEWORK

A motivational framework used in educational psychology, the Expectancy-Value Framework (EV-F) provides a theoretical model that may help explain how students prepare for the NAVLE. The EV-F describes the relationship between a student's expectancy for success in relation to achieving a goal, along with the value they place on task attainment (Wigfield & Eccles, 2000; Xu, 2022). Atkinson (1957) described how a student's motivation is strongest when there is a high degree of uncertainty about success. As the final phase of a veterinary student's educational journey is a high-stakes licensing exam, the outcome of which is intimately tied in with their self-assessed motivation and the value they place on becoming veterinarians (Xu, 2022), the EV-F was appropriate for framing this research.

The EV-F has four theoretical dimensions: *intrinsic value*, *attainment value*, *utility value*, and *cost value* (Cake et al., 2019; Loh, 2019; Wigfield & Eccles, 2000; Xu, 2022). Wigfield and Eccles define these constructs thusly: *Intrinsic value* describes the enjoyment arising from performing a task or activity, such as a student's vocational calling or a desire to learn; *attainment value* refers to the importance placed on doing well on a task because it is related to a goal tied in with their identity; *utility value* represents the judged usefulness of a task in relation to current and future career goals; and *cost value* applies to the time, effort, and opportunities a student gives up to pursue a given task, such as studying instead of spending time with friends and family (Cake et al., 2019; Loh, 2019; Xu, 2022). The appropriateness of this framework will be discussed later in the manuscript.

LITERATURE REVIEW

Expanding Educational Resources for NAVLE Preparation: Outcomes Assessment

Outcomes assessment is essential for evaluating a specific program's efficacy. Indeed, assessment should not be considered separate from the curriculum but as an integrated part of it (Hecker & Violato, 2009); after all, students already take extensive exams during their studies. If those assessments are correctly designed, they can reveal areas of strengths and weaknesses and document improvement, providing validity and reliability (Hecker & Violato, 2009; Kochevar, 2004).

In veterinary medicine, outcomes assessment involves targeted curriculum development, data mapping and decision management, faculty support and advising, gradebook analysis, and using advanced feedback tools such as the Strengths and Opportunities (S&O) report (Black et al., 2002; Edmondson, 2004; Mossop & Cobb, 2013; Royster et al., 2020). Such assessment strategies can purposefully assist an institution, providing new methodologies for faculty as they develop exam questions and curricula directed toward a specific outcome (Finney & Horst, 2019; Fuentealba, 2011; Varnum et al., 2020).

ExamSoft

ExamSoft is a comprehensive assessment software tool designed to improve student learning through technology-driven testing. It has many features that make it particularly useful, such as secure testing, immediate grading and feedback, advanced reporting functions, and category tagging. Furthermore, ExamSoft can simulate the format and conditions of professional licensure exams, making it a valuable tool for preparing students to take those tests. Karibyan and Sabnis (2021) reported that West Coast University School of Pharmacy stated that "overall, an overwhelming majority of students concurred that computer-based testing prepares them to take licensure exams" (p. 942). The software's ability to provide immediate feedback and detailed performance analytics supports students. It increases their motivation, particularly when instructors develop a more informed and responsive teaching approach using ExamSoft's S&O report (Malau-Aduli et al., 2019).

Strengths and Opportunities Report

The S&O report provides a detailed, individualized analysis of a student's performance across the various domains of knowledge and skill sets required for success in their licensing examination, based on categories assigned to exam questions. Grounded in formative assessment and personalized learning principles, these reports are designed to give students actionable insights into their learning journey (DeBiase et al., 2020). Weldon (2021) describes how meticulous analysis of performance data from practice exams, quizzes, and other preparatory activities identifies areas where a student demonstrates proficiency (Strengths) and requires further development (Opportunities). This dual focus ensures that students are aware of their capabilities and cognizant of the specific gaps in skills and knowledge that need attention, thus facilitating an efficient, targeted study strategy.

What sets SVU apart from other veterinary schools is that while those institutions have ExamSoft, they do not use its advanced reporting functions (Inpanbutr et al., 2020). In veterinary programs, the curriculum's scope can be overwhelming, and providing personalized feedback allows students to focus on the areas that will most impact their exam performance. This optimizes study time, reduces unnecessary repetition, and enhances learning outcomes (DeBiase et al., 2020; Zheng & Bender, 2018). Furthermore, the S&O report may boost motivation by reinforcing students' confidence in their strengths while providing a constructive framework for addressing weaknesses (Simpson et al., 2018). This clear, evidence-based feedback helps demystify the often-daunting task of exam preparation, making the process more manageable and less stressful for students.

Successfully integrating the S&O report into a veterinary-education program involves a continuous cycle of assessment, feedback, and adjustment (Brady et al., 2016). Students engage with various preparatory materials and evaluations, generating data that feed into the report; faculty and administrators then use the aggregate data to identify common areas of difficulty among students, and can then adjust the curriculum or provide additional resources as needed (Rudolph et al., 2019), based on the revealed strengths and weaknesses of the institution's materials, curriculum, and assessment strategies (Cernusca et al., 2017; Simpson, 2016). This cycle of feedback and curricular adjustment fosters a responsive, student-centered learning environment. It is key, though, to keep in mind that while schools should use the S&O report to guide student learning (Zheng & Bender, 2018), the effectiveness of the tool depends on students' ability to interpret and act on the provided feedback. Thus faculty guidance is essential (Melovitz Vasan et al., 2018). Ultimately, this kind of personalized feedback is invaluable while preparing for the NAVLE.

Faculty Mentoring and Feedback

Elce (2021) found that faculty mentorship—a blend of academic tutoring, emotional support, and professional guidance—was critical in veterinary medicine. She stated that mentors must be thoughtful and deliberate in interactions with students to help create competent and empathetic future veterinarians. According to Foote's (2015) research at the University of Sydney's veterinary school, mentor-mentee relationships, enriched by timely and constructive feedback, are key to preparing students to meet the demands of their future careers. A comprehensive approach not only aids in navigating the academic

challenges of veterinary school and fosters professional development (Huebner, 2022), but also encourages growth and positive attitudes toward learning (Collins, 2005; Foote, 2015).

According to Reder and Crimmins (2018), mentorship should be deeply involved in assessing and improving student learning. Understanding why someone missed a question or failed an exam is only part of the solution; giving verbal feedback and detailed academic reports are how mentors can use that understanding to help students refine their learning process (Warman et al., 2014). Furthermore, mentorship is a self-reinforcing system: Students who receive support, knowledge, and guidance from faculty mentors come to value those interactions more highly (Eby et al., 2008). Constructive feedback, especially when offered promptly following assessments or clinical experiences, is particularly helpful in cementing learning (Jug et al., 2019; Meyer et al., 2021; Zong et al., 2021).

According to Johansen et al. (2023) and Simpson et al. (2018), when faculty invested time and provided students with the S&O report, learners were shown to have higher levels of autonomy, which leads to positive academic outcomes. By regularly reviewing and analyzing the feedback provided in the S&O reports, faculty and institutions can identify areas for enhancement, implement changes, and track progress over time (O'Mara et al., 2014). This research can then inform best practices in veterinary education, contributing to improving teaching and mentoring strategies.

RESEARCH METHOD AND DESIGN

The primary purpose of this qualitative case study was to understand how students perceived the value of the various academic resources provided by SVU in the context of the worth they place on passing the NAVLE. I used a qualitative multimethod explanatory case-study design, following the recommendation of Hunter and Brewer (2015), who suggest the approach should be considered when discovering integrated relationships and finding causal explanations.

To further define this study, it can be considered qualitative single-case research, Type I according to Yin's (2003) typology. In his system, he stated that there are five rationales for a single case study, and this one falls under the second, called the *extreme* or *unique* case.¹ Yin's single-case rationale commonly occurs in clinical psychology; many authors have described the EV-F as an educational psychology framework, which is the foundation of this study's understanding of motivational behavior theory (Atkinson, 1957; Wigfield & Cambria, 2010; Wigfield & Eccles, 2000). Additionally, we used tenets of qualitative content analysis (QCA) from Mayring's (2022) methodological approach.

Veterinary students at SVU were in a unique position to provide our research team with insights and perceptions on how its enrollees have been preparing for the NAVLE. This is particularly noteworthy as participants had not yet taken the exam, and this research could provide a timely perspective that might change how the school provides resources and academic support for those students as they continue to prepare for the NAVLE.

Case-Study Propositions and Counter-Propositions

The impetus for this research was the decline in the NAVLE pass rate post-COVID. This was a widespread phenomenon, but existing studies had found no single direct indicator of the decline in the pass rate, suggesting rather that it could be due to a lack of educational tools, faculty mentorship, or a drop in student motivation during and right after the pandemic. We wanted to explore the intersection of these indicators and felt that the Expectancy-Value Framework could best help explain how motivation and persistence enabled veterinary students to succeed. To that end, we suggested a few propositions and set out to affirm or refute them through the lens of the EV-F.

- *Study Proposition I:* Student success depends on their motivation to use various resources.
- *Study Proposition II:* Licensure attainment depends on the value veterinary students place on preparing for the NAVLE.
- *Study Proposition III:* Veterinary students' commitment is influenced primarily by the value they place on passing the NAVLE.

To include abductive logical reasoning into this case study, we also proposed the following counter propositions:

- *Counter-Study Proposition I:* Student success is not dependent solely on the motivation to utilize resources, but rather on whether those resources are perceived as effective or ineffective.
- *Counter-Study Proposition II:* Passing the NAVLE is not dependent on the value students place on available resources, but upon other explanatory factors that will be uncovered through this research study.
- *Counter-Study Proposition III:* Veterinary students' commitment is primarily influenced by factors beyond their commitment to pass the NAVLE.

Participants

This study focused on students attending the Southwest Veterinary University. A total of 29 students participated, as illustrated in Table 1. Students signed up for interviews using a Qualtrics questionnaire, and we accepted all students who volunteered. Twenty-two interviews were conducted: 20 individual ones and two focus groups.

Focus Group 1 consisted of two third-year students, one second-year student, and two first-year students, all women. Focus Group 2 was comprised of one third-year student, one second-year student, and two first-year students, evenly divided between men and women. While we had intended to have both focus groups include identical representation from each cohort, one intended third-year participant could not attend Focus Group 2 session, and was thus excluded from the study.

TABLE 1
DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

Sex:	Count	Percentage
Male	6	21%
Female	23	79%
Prefer not to say	0	0%
Education Level:	Count	Percentage
Some College	1	3%
Bachelor's Degree	24	83%
Graduate Degree ⁴	4	14%
Class of:	Count	Percentage
2025 (Y3)	12	41%
2026 (Y2)	7	24%
2027 (Y1)	10	35%

Strengths & Opportunities reports are provided to all students at the end of each academic year, with third-year enrollees receiving an additional comprehensive report synthesizing data from each year of attendance. As a result, first-year participants had not yet received one at the time of the interviews and were thus not asked questions involving the S&O reports.

Data Collection

In order to test the EV-F as a suitable theoretical framework for explaining student behavior while preparing and sitting for exams, two different interview types were used to collect data. Both focus-group

and individual one-on-one semi-structured interviews were conducted, discussing participants' preparations for taking the NAVLE, and inquiring about gaps related to using available resources in those endeavors. Each interviewee was asked 20 questions with an interview protocol using a counterbalancing design technique adapted from Campbell & Stanley's (1966) quasi-experimental Design 11.² We used this to determine differences between focus-group and individual interviews. This was intentional, as I wanted to see if the coded-segment themes differed between the individual and focus-group responses, allowing us to attempt thematic integration.

We constructed a pre-research questionnaire for participant selection, asking students to state their preferences for group or individual interviews. We stratified the interviewees based on demographic questions included in the pre-questionnaire.

Data Treatment and Analysis

The individual and focus-group interviews were conducted using Zoom Video Communication (2024) software to host, record, and provide transcripts for each interview. Once the sessions were concluded, we reviewed each transcript to remove all identifying data, such as names and locations, to ensure participant confidentiality. Throughout the transcription process, certain terms were subject to automatic transcription errors. For instance, "NAVLE" was frequently transcribed as "navale," "naval," "nable," "Naple," etc., likely due to phonetic similarity; likewise, commonly abbreviated colloquialisms, such as "pharm," often used by participants to refer to pharmacology, was frequently misinterpreted as "farm." I manually corrected these errors during the transcription review to ensure accuracy in the analysis.

Once the transcripts were cleaned and fully de-identified, we fed the data into MAXQDA's (Verbi Software, 2024) AI-Assist tool, which generated summaries of each interview; these provided a comparison to the researchers' overview of the data. Per Yin's (2003) recommendations, participants were asked to review their respective summaries and rate its accuracy on a scale from 1 (totally incorrect) to 5 (completely accurate). While not every participant responded, the vast majority did (22 of 29 participants, nearly 76%), and their average rating was 4.91, indicating strong agreement with the AI-Assist summaries.

After member-checking the summaries, we transitioned to coding. Researchers typically rely on highly prescriptive pre-established coding systems that provide step-by-step instructions for a particular methodology; however, I did not use a ready-made system for this research. While reading Saldaña's (2013) manual for qualitative coding, I discovered causation coding, which provides a framework where inputs:

...can range from actual people (e.g., a beloved ... teacher) to conceptual phenomena (e.g., the economy) to significant events [or] natural phenomena (e.g., hurricanes) to personal ethos and agency (e.g., self-motivation ...), to a myriad of other factors in various combinations. (p. 165)

While I am not here inferring causation, I found Saldaña's concept intriguing. It was similar enough to what we wanted to accomplish that we modified it to create a codebook for causality and causal mechanisms (see Appendix A). This causal coding was deductively applied to both the individual and focus-group interviews, and we furthermore employed inductive coding to generate additional themes. As we progressed, some passages from participants were coded under multiple theoretical dimensions, reflecting the complexity of their responses.³

Triangulation & Integration

After coding themes from all the interviews, I compared the data from individual and focus-group sessions. In each case, I noted similar coded segments from each theoretical-dimension theme while accounting for the differences between types of interviews. Inductive and deductive coding were both employed, and again, MAXQDA (Verbi Software, 2024) was used to generate themes from both types of codes in an effort to achieve thematic triangulation, which, according to Onwuegbuzie et al. (2009), allowed me to assess whether the themes derived from one group also emerged from another. Following from Hunter & Brewer (2015), generating themes concurrently from deductive QCA and inductive logical reasoning

allowed for multimethod integration. These dual analyses integrated individual perceptions and group dynamics accurately.

Reflexivity

While conducting this study, Mr. Favela was employed at a veterinary school and had access to students. During the years preceding his research, he built rapport with participating students, and his professional role included overseeing academic records and managing sensitive student information. The role required a high level of trust and integrity, and participants may have viewed him as an authority figure, which could have affected their responses. Correspondingly, respondents might have answered questions in a way that skewed alignment toward the school’s mission, its public image, and the administration's expectations. Dr. Nix served as the methodologist for this research, and his penchant for multimethod research designs and a focus on reducing sources of internal invalidity was evident as the research progressed.

RESULTS

A total of 788 deductive coded segments were derived, out of which 526 were related to theoretical dimensions; those segments were categorized according to the EV-F, into groups corresponding to *attainment*, *cost*, *intrinsic*, and *utility values*.

Figure 1 (see Appendix B) illustrates the coded segments derived from the individual interviewees. The chart highlights the most and least frequently coded segments identified in the responses; a wide range of coded segments was distilled from each interview, ranging from 0 to 23.

Figure 2 represents the total coded segments for the two focus-group interviews, which were used to identify the relevant theoretical dimensions of the EV-F. As shown, the number of segments in these sessions ranges from 12 to 36, and the theoretical dimensions of individual and focus-group interviews showed a convergence and a divergence regarding the coded segments. This topic will be further explored in the Discussion section.

FIGURE 2
TOTAL CODED SEGMENTS USING THE EV-F FOR FOCUS-GROUP INTERVIEWS

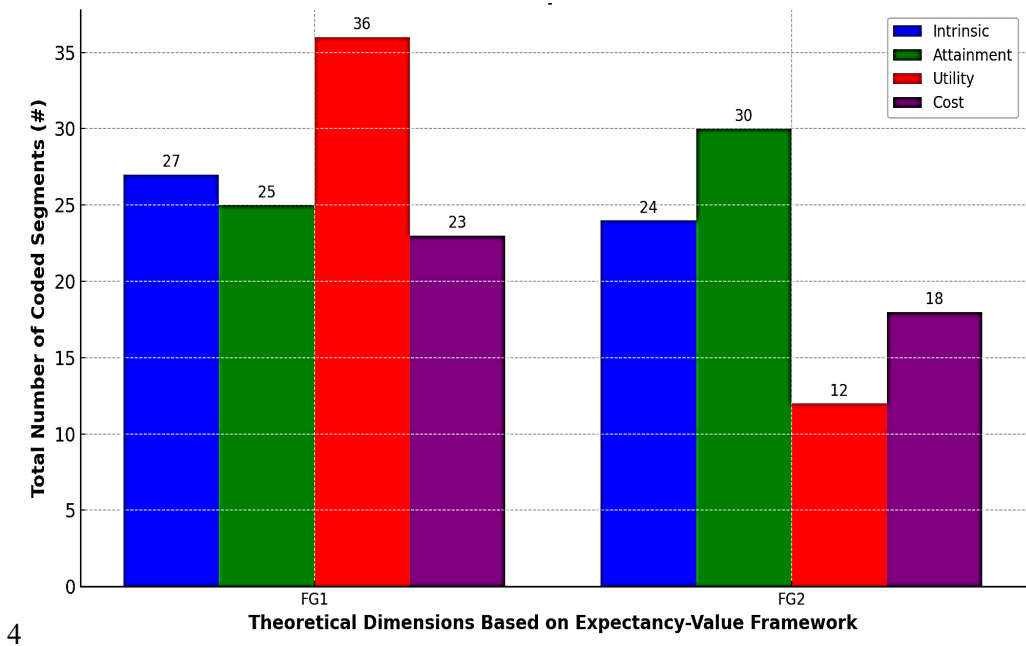
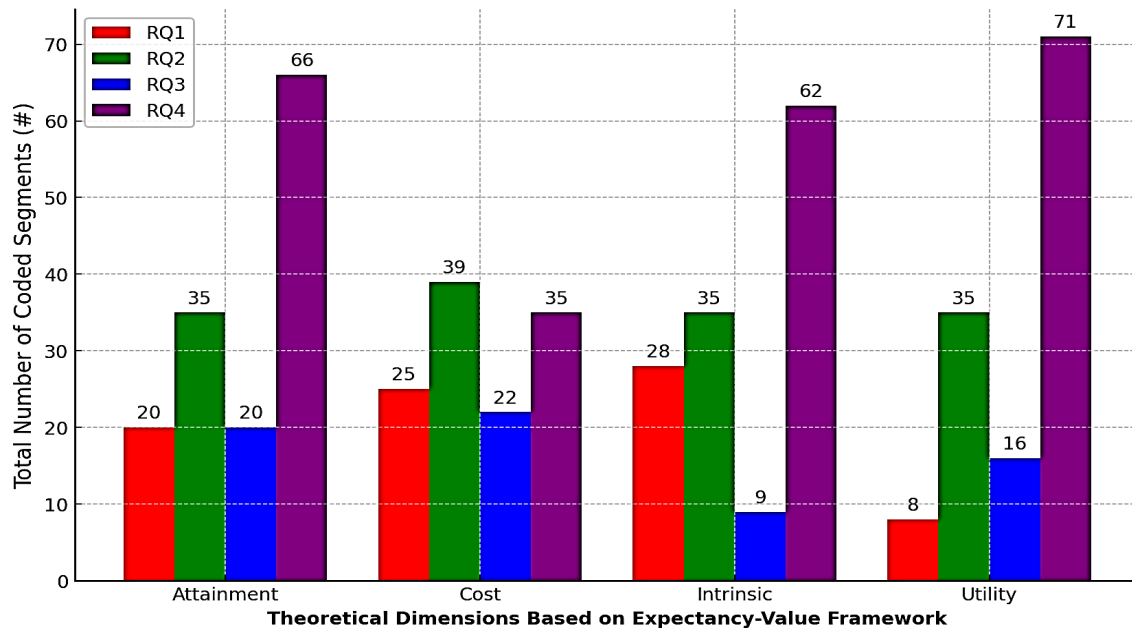


Figure 3 compares coded segments across the four research questions. Remember that the EV-F is an educational-psychology motivational framework that explains how students' expectations of success (*expectancy*) and the value they place on a task (*value*) influence their motivation to achieve goals. Thus, each theoretical dimension provided insight into how participants perceived different aspects of their exam-preparation experience, including those coded for relevance, effort, enjoyment, practicality, and educational resources. The following section charts the findings for each theoretical dimension in relation to the RQs, followed by a discussion that provides context from the students' perspectives.

FIGURE 3
COMPARATIVE-CODED SEGEMENTS FOR EACH RESEARCH QUESTION



FINDINGS AND DISCUSSION

RQ1: Motivation to Put Effort Into Studies

Several key insights emerged regarding how participants seemed to perceive the EV-F values of their expended “effort.” *Attainment value*’s appearance in 20 coded segments revealed that students well recognized the importance of performing well in exams and assessments to achieve their academic and career goals. Individual Interview Student 1 stated, “I just want to ensure I can thoroughly understand what was discussed in this lecture. I think I just want to be proficient in all of my classes, so I think I put the same effort towards them.” While it was not overwhelmingly important, students indicated a strong sense of *attainment value* and stressed the need to excel academically to earn their veterinary degrees.

A more frequent motivator appears in the 25 coded segments associated with *cost value*, indicating that students were aware of the sacrifices required for their education—particularly the steep learning curve in their first year. This highlights that while students acknowledged the necessary effort, it had a moderate influence on their perceptions centered on NAVLE preparation. Individual Interview Student 15 stated, “I dedicate more time to what I know is deficient ... and I make sure that I start studying earlier for that.” Student 2 from the second focus group reinforced these codes, saying, “I like hearing everyone's answers, especially where I am now. It's interesting because I would say the biggest motivator is time,” adding that they had felt a strong need to dedicate time and resources to NAVLE prep across their three years in the program.

The most frequently coded motivator was *intrinsic value*, suggesting that students were primarily driven by a genuine passion for and interest in their professional goals, rather than external pressures (e.g., family or societal). This indicates that respondents felt a personal connection to their chosen field, with finding enjoyment and fulfillment in performing veterinary tasks serving as vital motivating factors. The coded segments for RQ1 are presented in Appendix C.

By far the least frequently coded influential dimension was *utility value*, with only eight coded segments relevant to RQ1. The lower emphasis on *utility value* suggests that students viewed coursework and studying as means to achieve immediate goals, like passing assessments, rather than as tools for attaining longer-term objectives such as preparation for the NAVLE or supporting future career aspirations. Individual Interview Student 11 stated:

I mean, I think that it's the ultimate dream of how I see my life. ... I've always had this idea of, you know, who I'm going to be, and ... how I can work to get there. And, you know, kind of like my timeline. And I really do think that that's my motivation like for studying for the [NAVLE]. ... I definitely have, like, external motivations, like my [family] and I have been paying a lot of money to go to school, and so I definitely need to make sure that I make it worth the while.

This clearly shows a high value placed on the *intrinsic* dimension;. At the same time, the participant is aware of the *cost* and *attainment* aspects, they plainly see the NAVLE as a necessary step in achieving their internally held life-goals. Student 2 in the first focus group stated this perspective even more strongly, stating, “This is literally the only thing I've ever wanted to do with my life. And so that's a big thing for me, because I've never let myself lose that, like, goal of ‘This is what I wanna do.’”

Overall, students viewed school as a necessary step toward becoming veterinarians, even if the experience itself was not inherently enjoyable. Across categories, participants emphasized their commitment to success and their motivation to succeed on the NAVLE, framing the achievement of a passing score as a reflection of their readiness to serve future clients, particularly in the rural communities to which many students felt a strong connection.

RQ2: Influence of Values and Commitments on Determination to Pass NAVLE

This research question examined how the EV-F contributed to a deeper understanding of veterinary students' *values* and their commitment to achieving a passing score on the NAVLE. Interestingly, most *values* equally occurred in codes, with *attainment*, *intrinsic*, and *utility* each appearing in 35 coded segments. Responses coding for *attainment value* highlighted how participants saw their academic performance as influencing their personal, societal, and professional goals; the coded segments for RQ2 appear in Appendix D. Individual Interview Student 4 stated:

Yeah. So I'm definitely one of those students that like, if I get a question wrong, it makes me mad. And I will never forget the answer. ... There's questions I still remember getting wrong, and I'm like, if that's not on the [NAVLE] I'm going to be upset about it. ... So like, if I did really bad on a test, and I'll go review [the outcomes assessment], and then I will ... go back and, like, review my notes. I'm like, where did I go wrong studying this, or ... I'll go talk to a Professor.

Interviewees who frequently mentioned *attainment* emphasized the need to internalize every aspect of their learning in order to pass course examinations and prepare for the NAVLE and their future practices; this was explicitly stated by Student 4 from the first focus group, who said that since entering school, “I have tried to think of every exam not as just passing the class, but as sitting down and learning and absorbing that information for the future—not only for [NAVLE] but for whenever I go out and practice.” Such stated commitment to retaining knowledge for long-term success underscored the significance participants placed on achieving their professional aspirations.

Intrinsic value, reflecting the personal satisfaction and enjoyment students receive through pursuing their veterinary careers, was also frequently mentioned, indicating it played a vital role in maintaining their perseverance and dedication. Similarly, *utility value* also had 35 coded segments, suggesting that students place considerable practical importance on their studies, seeing them as a means to both prepare for the licensing exam and to solidify knowledge gains for their future roles as veterinarians. Individual Interview Student 1 stated:

I have thought about this since we started vet school. I knew [NAVLE] was the end goal. I knew. You know, we're going to spend all this time in school. But if you don't pass the [NAVLE], you don't get your [license], or [become a Doctor of Veterinary Medicine]. ... You can't practice on your own, and so I know my end goal. It is to pass the [NAVLE]. ... That's how I've set up my learning tactics throughout vet school.

Respondents' efforts were thus driven not only by a desire to pass exams, but also by a strong commitment to preparing for a future of meaningful veterinary practice, whether that be through community service or by fulfilling their own long-term career goals. Their statements revealed the deep connection they saw between academic success and professional ambitions.

With 39 coded segments, *cost value* was the highest among the dimensions, signifying that students were acutely aware of the sacrifices and challenges required to succeed. They consistently expressed how the long hours and effort demanded by veterinary school necessitated their full commitment to overcoming difficulties, and understood how preparing for the NAVLE was a pivotal step in their careers. Individual Interview Student 2 stated:

The studying hours of the material has gone up exponentially. I mean, [school] is a job. And we were told that from day one ... that this is our career for the next four years. Those are a few of, I guess, the challenges: the material of the time and the difficulty.

Student 4 in the first focus group reinforced this perception by adding:

The [NAVLE] is closer and we're preparing with VetPrep or other preparation tools and lectures. I think, it's just there's that commitment to just review, to make sure that you know this information before [going] into that test, and so that I don't just go and waste my time and my effort and my money.

RQ3: Value of Available Resources vs. Value of Passing NAVLE

Attainment value, with 20 coded segments, reflected students' recognition of the importance of passing courses and the perceived link between using the available resources and achieving success, both academically and in preparing for the NAVLE. The coded segments for RQ3 are presented in Appendix E.

With 22 coded segments, *cost value* highlighted students' awareness of the effort and time required to manage their studies, use resources effectively, and prepare for the NAVLE. They acknowledged the need for better time management and resource allocation, particularly when facing challenges in specific subjects. Individual Interview Student 5 stated:

For me, it was just adding that time, you know, just taking time from other things. Okay, you know this [S&O report] says I do really well in pathology, and you know what? I do feel really good in pathology. So maybe I can put that focus on something like neurology where it's like, I do struggle ... just that time management of taking from one place and kind of distributing it where it's needed.

Student 4 in the second focus group, reinforced this perspective by adding:

I'm definitely always looking at ways that I can improve myself. Especially in the areas that are lacking. Because I want to be a good veterinarian in the future, and so in the areas that I am lacking now, it's more like, okay, this is an opportunity for me. Now, next year, I know what I need to do. I can strengthen this area and get it up to speed with maybe other areas that I'm doing better in. So I do like that about [the S&O report].

Clearly, respondents felt that the S&O reports were key tools for informing how they managed their time and attention.

The fact that only nine coded segments were assigned to *intrinsic value* indicated minimal enjoyment or personal satisfaction associated with using SVU's resources. Students critically reflected on shortcomings in those areas, particularly regarding faculty mentorship and feedback inconsistencies. Student 3 from Focus Group 1 stated:

I'm not a fan of the fact that there's no consistency between grading in certain areas. For example, in our class this year, we had a surgical report that we turned in, and there's a group of specific people—about 10—who use the same report format. [Details] might have changed, the patient's name and the times, but one person got 100 on it, which ranged down to 70. The same [format getting different scores] shows the inconsistency of grading among faculty, which was the most annoying part.

Utility value was referenced in 16 coded segments, suggesting that students did recognize the usefulness of the resources. Yet despite the constant awareness that passing the NAVLE was an essential step to licensure, participants were primarily focused on their short-term academic needs while accessing support. Still, they did express concerns about how knowledge gaps due to inconsistent or repetitive lectures could impede their ability to pass the NAVLE. Individual Interview Student 8 reinforced this by stating, "It just makes me worry because there are obvious holes in my knowledge, and I would hate for those holes to be the reason I have to retake the [NAVLE]."

The most frequently coded-for resource, across all *values* and RQs, was faculty mentorship and feedback, with 303 coded segments (see Appendix G); clearly, students saw it as an extremely important part of their academic journey. However, many students expressed dissatisfaction with inconsistent faculty support, noting that negative interactions with mentors hindered their learning and preparation for the NAVLE. Inadequate feedback or defensive faculty responses hindered academic success, turning mentorship into an obstacle rather than an advantage. Individual Interview Student 12 spoke to this, noting that for some faculty:

It was very much you ask [a] question, they get defensive, and then things become stagnant. And you kinda, like, no one wants to ask questions. ... I think that kind of decreases the learning level. ... It's not really, like, a well-rounded experience. And so it's not as easy to remember [material] in the future. And I see that reflected in my [NAVLE] prep questions.

RQ4: EV-F and Perceptions and Motivations Around Resource Use

Interestingly, *cost value* had the fewest number of coded segments, but illustrated students' recognition that time and effort are required to use these resources effectively. Individual Interview Student 13 stated:

I think my first [test], ... I got like a 65. It wasn't great. And then on my second exam, I got like a 95. And so, just, like, changing the way I studied, based on coming and seeing my S&O report, and going back through the exam with outcomes assessment. That's how I did so well on the second one.

Again, many interviewees expressed that they often focused on immediate academic concerns, such as passing upcoming exams or completing practical evaluations, rather than long-term NAVLE preparation.

However, they did recognize that making sacrifices for their current studies would ultimately benefit their NAVLE performance.

Attainment value had the second-highest number of coded segments (66), highlighting participants' strong focus on using resources aligned with their academic and professional goals. One such resource was the S&O report, which accounted for 139 coded segments across all individual interviews, second only to faculty mentorship, with 179 (see Appendix H). Students believed that strategically using this report in conjunction with faculty mentorship and feedback, could directly enhance their academic success and future careers.

The 62 segments coded for *intrinsic value* indicated that students found personal satisfaction and excitement in engaging with faculty and resources. Mentorship was viewed positively overall, with students feeling supported and guided in both their academic and career aspirations. Student 5 from Focus Group 1 stated:

I'm planning on pursuing an internal medicine residency. And so I kind of, you know, have an internal medicine specialist that's kind of my mentor, and maybe that's why I want to do it, because I want to be this person. ... I think, you know, faculty mentorships are really important. We have some great mentors, and they're just very encouraging. And just from hearing the experiences that some students have at other schools, I feel like we're very lucky that we have the culture we do at [here]. It's very uplifting.

However, the quality of the mentor–mentee relationship determines its perceived value, reflected by the different responses given by interviewees, even in the same group. Student 4 from the first focus group said:

If they can make it to where I feel like they're talking to me as an adult and treating me respectfully, I'll take any feedback as valuable. But if they start talking down to me, making me feel less, or talking to me like a child? I know we've had some instances where some [faculty] have yelled at us and gotten onto our class for making some mistakes, and I think that when that happens, I, personally, they've lost me. And whatever they tell me, even if it's good constructive feedback ... it will go in one [ear] and out the other because I no longer care. After all, they mistreated me. And so, any form of feedback is valuable until you don't treat me with respect.

The participants expressed repeatedly that they wanted a good mentor, that there was value in such a relationship, and that they are disappointed when it did not feel supportive.

Utility value, with the highest number of coded segments overall, showed that students viewed faculty mentorship and other resources as instrumental in achieving both short-term and long-term goals. This belief that direct feedback was fundamental to success in veterinary school and passing the NAVLE definitely seemed to motivate students to engage deeply with mentors, in particular. Focus Group 2, Student 4 stated:

For me, I definitely feel like the mentorship from faculty is pretty positive all around. I very much get the feeling that they want us to succeed. And I love that, 'cause it just really helps me out, like in classes and stuff, like I know that they don't want me to fail. They want me to do well, which is really nice, and I feel like in every area of vet med ... there's at least one professor I can think of ... that I could go talk to and ask any questions, and they'd be willing to help me out or let me even like, go shadow them. Or if I asked them about different opportunities, they would do what they could to help me. Which I really appreciate!

Individual Interview Student 16 reinforced this perspective by adding:

Yeah. So the biggest thing is my mentor. I talked last semester to them, and then I kind of told them what I thought I wanted to do, and they were like, “Great! You need to do research with this professor this summer.” And so, and that was something I was not interested in at all. ... I was like, “I’m not doing research. I’ve done research [in] undergrad. I’m not interested.” But when they told me that I needed to go talk with the other professor and get information on that It was like, oh, okay, like it became very eye-opening. So I really appreciated that, because I would have just walked the other way and been doing something else. But here I am, and I’m actually very excited for it.

The responses pertinent to RQ4 are particularly illuminating. They demonstrate that students, while aware of the *cost value* of accessing resources, do not place great importance on that dimension. Rather, their motivation primarily draws from perceived *utility* and *attainment*, as well as the personal satisfaction reflected in high *intrinsic value*. In particular, responses frequently mentioned faculty mentorship, a resource which generally seems to be regarded as worthwhile and desirable, but also can have a large negative impact on students’ motivation and planning if poorly implemented. The coded segments for RQ4 are presented in Appendix F.

Individual Interviews vs. Focus-Group Interviews

A comparative analysis between the individual and focus-group data provides deeper insights into how the different settings and methodological tactics influenced the expression of students’ values and perceptions (see Appendix I). Our exploration of the similarities and differences observed across the two interview types focused on the coded segments for each of the theoretical dimensions of the EV-F.⁴

The *attainment value* for each unit of analysis (individual vs. focus group) was convergent, with individual interviews at 26.8% (159 coded segments) and the focus group at 28.2% (55 coded segments). The slightly higher emphasis on this *value* in the latter unit suggested that participants felt a stronger sense of competition or collective pressure in a group setting. This is likely due to social comparisons, where students assess their achievements relative to their peers, leading to a greater emphasis on personal success and alignment with group norms.

The *utility value* for each unit of analysis was also convergent. For individuals, *utility* accounted for 27.5% of coded segments (163 total), and for 24.6% (48 coded segments) in the focus groups. This *value* was slightly more prominent in individual interviews than in focus groups, implying that students were more likely to consider the practical implications of their education when reflecting privately. When given time to think alone, participants prioritized how their education could benefit their future careers or personal lives, while other factors took precedence in group discussions.

The *cost value* for each unit of analysis was divergent. Individual interviews coded for *cost* (161 segments)—almost as prominent as *utility value*. This indicates that great consideration is given to the effort, time, and resources required for academic pursuits. Evidence shows that participants felt more comfortable privately describing their stress, workload, and financial considerations while discussing the challenges they faced and sacrifices they made. In focus groups, however, there were only 41 coded segments. The lower emphasis on *cost value* in these interviews suggested that discussions in a collective setting may emphasize collectively perceived concerns over individually held ones, or that participants may have been less comfortable discussing personal sacrifices with their peers. Regardless of the underlying mechanism, in the focus groups, the social dynamics of the students’ interactions focused on the positive aspects of shared experiences, rather than individual challenges.

The *intrinsic value* for each unit of analysis was also divergent. Individual interviews coded for this theme often (110 coded segments), making this the least-emphasized theoretical dimension in the one-on-one sessions. This indicates that these participants were less likely to discuss personal enjoyment when focusing on practical or challenging aspects in a private setting. That focus would seem to support further other research exploring burnout among veterinary students and practitioners (Elce, 2021; Weston, 2017)—and may even be related to the relatively higher suicide rate among veterinarians (Elce, 2021; Foote, 2015; McArthur, 2019).

However, focus-group interviews mentioned this dimension frequently (51 coded segments); the noticeably higher emphasis on this *value* in focus groups suggested that in the collective environment, participants demonstrated a greater appreciation for the opportunity to express themselves to their peers. The focus-group dynamic encouraged more reflection on what was positive or negative, depending on the context and subject, in a more relaxed and open discussion format. Group dynamics can encourage students to recognize and reflect on their feelings, perceptions, and motives as they hear their peers express similar sentiments.

CONCLUSIONS

Research Question 1

Responses provided a foundational understanding of student motivation through effort. Coded segment themes indicated that the perceived amount of “effort” spent has a larger impact on students’ day-to-day actions than on their long-term preparation strategies for the NAVLE. However, the question is more about understanding the “why” behind their efforts rather than the “how” or “what” they are doing to succeed; responses suggested that expectancies and task values were directly related to achievement outcomes, echoing findings by Plante et al. (2012), who conducted a study on achievement goals.

This evidence suggested that “effort” was an implicit expectation these students had, as they understood that hard work was part of the process for veterinary school. However, other factors shaped their perspectives, such as a moderately high *attainment value*, a high *cost value*, and a low *utility value*. The coded-segment themes showed that students’ efforts were only focused on immediate tasks, given the low *utility value*. That low *value* arises because participants considered resources only for immediate use, such as passing an exam or course, and saw them as less important to their long-term goals *in terms of this RQ*; the interviews made it clear that the students also viewed passing classes as stepping-stones to their ultimate goal. Furthermore, the high *intrinsic value* aligns with similar findings in Knekta and Eklöf (2014), who found effort and the perceived importance of tasks were unexpectedly salient in a high-stakes context. Likewise, this research found that SVU students believed effort is essential for success in veterinary school; however, this implicit perceived need for “effort in general” was limited in its expression, with actual effort expended mainly dedicated toward immediate academic concerns.

These findings thus support Study Proposition I, that student success depends on their motivation (especially internal) to use various resources. The *intrinsic value* associated with this RQ highlights that students’ passion for veterinary medicine plays the most central role in achievement. While students recognize the important role academic resources play in their success, that success would be less meaningful—and thus less motivating—without an underlying love for the field. Participants frequently described how their deep interest in veterinary medicine motivated them to take advantage of key resources, such as faculty mentorship, the S&O report, and feedback. This drive encourages them to overcome challenges and maximize their engagement.

Still, internal drive can only carry a student so far, and some participants noted that the inconsistent quality or arbitrary nature of faculty feedback reduced their engagement. This suggests that the effectiveness of resource use depends not only on its availability but also on how students perceive its utility and quality. That perception is central to their willingness to spend the effort to use these resources. Even the most dedicated students may struggle academically if the available support is unappealing, negatively affecting on their ability to prepare for the NAVLE.

According to their testimony, participants did not perceive “effort” as very important for achieving long-term goals, likely due to the stressful nature of their immediate academic needs. This caused *utility values* to be low; in exchange, the participants’ *cost value* was increased. A psychological study on well-being was conducted at Kansas State University College of Veterinary Medicine by Hafen et al. (2023), which evaluated healthy activities and daily living among 230 veterinary medical students. They discovered that when veterinary students sought out faculty mentorship, they had a higher well-being score. In my research, however, participants perceived a high *cost value* for those resources, and the extra effort and energy needed to access them may dissuade students from doing so. Hafen et al. (2023), combined with the

participants' perspectives from this study, may together indicate ways veterinary students could lower their *cost value* and seek more faculty support.

The coded-segment theme *attainment value* recognized the importance participants placed on aligning their efforts with academic and professional goals. This was not surprising, given most veterinary students understand the need to perform well on assessments to achieve the grades required for their veterinary degrees (Royster et al., 2020; Zheng & Bender, 2019). Participants in this study expressed similar sentiments: One student explained that their goal was to become proficient in all their classes, while another described feeling motivated by improvement, with better exam results encouraging them to invest more time in their studies. Overall, participants indicated they felt it was essential to excel in all aspects of their academic careers, and were willing to dedicate significant effort to mastering course material.

Research Question 2

Understanding the motivations that drive students could improve their preparation strategies by focusing on what keeps them invested in their studies, potentially leading to better outcomes on the NAVLE. Participants recognized the importance of the tasks they had to complete in order to pass the exam, saw the direct benefit passing had for their future careers, were fully aware of the costs involved, and found personal satisfaction in their efforts. Much as seen in Wigfield and Eccles (2000), participants here prioritized what they perceived as valuable for their long-term goals. The balance of coded-segment themes for each theoretical dimension indicated that attainment, utility, and intrinsic value were closely tied to these students' motivation and to the perceived importance of academic performance, particularly regarding the NAVLE and career goals.

These findings affirm Study Proposition II: Attaining licensure depends on the value veterinary students place on preparing for the NAVLE. Participants consistently emphasized the *attainment* and *utility values* associated with exam preparation, again stressing that the licensing exam was essential for achieving their long-term professional goals. The *cost value* associated with this RQ further highlighted the sacrifices students saw as necessary, including time, energy, and financial commitments, indicating that they were willing to bear a high cost, reflecting the importance they placed on passing the exam. Participants indicated their efforts were not just directed toward passing a given course, but about preparing for their future careers. These students approached every topic seriously, even if it was not immediately attractive, because from their perspective it could be crucial for passing the NAVLE. This echoes Loh (2019), who concluded that expectancies and subjective values are assumed to be influenced by personal goals and task choices. In my study, the reported goals and choices all point to the interviewees' focus on long-term success, highlighting the high value these students placed on preparation and success in veterinary schools.

Furthermore, the *intrinsic value* many students placed on veterinary medicine—evidenced by their passion for animal care and desire to serve their communities—reinforced their commitment to the profession. It is worth noting the importance that the interviewees placed on the social dimensions of their chosen careers, such as helping people and animals and serving their communities. This correlates with Cake et al. (2019), who stated that veterinary students' motivation is formed around deeply meaningful personal goals, commitments, and values. My evidence suggests that participants wanted to do well in all aspects of their coursework, shaped by the personal values and commitment they felt for the veterinary profession, and that this desire to excel underpinned their preparations for the NAVLE. In a similar vein, Xu (2022) discussed how students engaged in high-stakes exams often felt heightened motivation when success was uncertain.

While the four *values* all scored highly here, evidence shows that *cost* was slightly more prominent than the other themes underscoring the challenges and sacrifices students face. Participants recognized that studying for the NAVLE requires a level of commitment akin to a full-time job, and the interviews show these students acknowledged the personal time they sacrificed and the effort they expended to succeed, while still feeling a sense of intrinsic enjoyment. The personal satisfaction attached to becoming veterinarians led to a desire to not just pass exams, but to also be well-prepared and responsible practitioners. Passing the NAVLE is not only a requirement for these students; they see it as a pathway to achieving continuing success as professionals. The value they place upon their chosen field led participants

to reflect carefully on their respective motivations. This finding too aligns with other research, particularly studies on autonomy in veterinary students (Cake et al., 2019) and in higher-education students in general (Johansen et al., 2023).

Research Question 3

This RQ had the lowest number of coded-segment themes across the theoretical dimensions. Evidence showed that students recognized the importance of passing courses but felt one specific resource was the most important for success: faculty mentorship.⁵ However, some participants reported negative experiences with faculty, describing how inconsistent feedback and defensive attitudes hindered their learning experience. Freeman et al. (2022) emphasized that the effectiveness of faculty mentorship and feedback mechanisms depends on how well students understand their relevance to academic success and professional preparation. However, the issue was not whether students felt mentorship was relevant — they seemed to agree it was — but rather how they perceived the quality of their mentors. To address the gaps reported by my participants, the approach must include higher-quality faculty engagement in mentoring students, constructive feedback, and the maximization of available resources, such as the S&O report. This conclusion is supported by extensive research (Brady et al., 2016; DeBiase et al., 2020; Rudolph et al., 2019; Simpson et al., 2018; Zheng & Bender, 2018).

Interviewees further expressed the need for effective time management, allocating study time in a way that allowed them to focus on weaker areas while still maintaining strengths and taking advantage of available resources. However, low reported *intrinsic value* showed that students found little enjoyment in reflecting on the worth of SVU's resources. Some students voiced frustration over inconsistencies in grading or repetitive lectures, which reduced the joy they found in learning. Similarly, the low number of coded-segment themes for *utility* reflected a perception that immediate academic problems were more pressing than NAVLE preparation. This could be due to students adjusting to the academic environment of a professional school, as reflected in the high *cost*. Taken together, these low values show that students may need to be more fully engaged in understanding how the resources at SVU could enhance their experiences. Addressing these gaps through specific and helpful interventions could make the resources more relevant and valuable to students, potentially increasing engagement—a finding echoed in other studies (Cake et al., 2019, DeBiase et al., 2020; and Xu, 2022).

Research Question 4

Out of all the RQs, this one generated the most coded segments. The findings revealed that students were highly motivated to use resources like the S&O report, faculty mentorship, and feedback in NAVLE preparation. However, while the resources themselves were important, students expressed how broader commitment to veterinary careers, intrinsic passion for animal care, and desire to serve their communities were their primary motivators. This indicated that their efforts and considerations extended beyond just passing the NAVLE, reflecting a long-term focus on their professional aspirations.

These findings affirm Counter-Study Proposition III: Veterinary students' commitment is primarily influenced by factors beyond their desire to pass the NAVLE. While passing the licensing exam is undoubtedly a major goal, the *intrinsic value* students placed on their overall veterinary careers (62 coded segments) was the thing that spurred them to work toward passing the test in the first place. Many students highlighted how their passion for the field and serving their communities were intimately connected to their long-term professional goals, and that the whole kept them motivated even when faced with the high demands of the veterinary program. As such, their commitment is influenced by a broad set of factors, including personal values, career aspirations, and intrinsic motivation, rather than just the practical necessity of passing the NAVLE and making a living.

Participants' responses indicated that students were highly motivated to use the available resources to prepare for the NAVLE. As *attainment value* was the most prominent theme expressed, it suggests that interviewees believed doing so was crucial for achieving their goals; like what was seen in studies by DeBiase et al. (2020) and Zheng and Bender (2019), tailored resources such as the S&O report were highly valued. These participants recognized how the S&O report or a strong mentor could help guide them toward

short-term academic achievement, building the knowledge base and skills needed to eventually pass the NAVLE. One student emphasized how they strategically used the report to identify and address weaknesses, while another noted how tools like faculty mentorship and feedback helped fill learning gaps.

Similarly, *cost value* was a recurring theme, highlighting the effort and time required to use resources effectively. Even when focused on immediate academic concerns like passing exams or preparing for clinical assessments, participants acknowledged the necessity of dedicating time and effort effectively. One student recounted how altering their study strategy after reviewing the S&O report led to a notable increase in their score on subsequent exams. This shows how a positive-feedback loop can result when using an available tool or support brings recognizable benefit, thus increasing its perceived worth, which further inclines students to employ that resource. If this participant independently adapted their approach based on assessment feedback, even if they were unaware of how their study strategy also contributed to long-term NAVLE preparation, this suggests avenues for potentially improving instruction or other support at the institutional level.

Intrinsic value was also a highly important motivator for resource usage, as students reported taking personal satisfaction in engaging with the support available at SVU. Many participants expressed excitement about the guidance and feedback they received from mentors. This echoes Adams and Kurtz (2012), where some participants linked their future career aspirations to positive relationships with faculty (see also Plante et al., 2012). Indeed, many studies (Burgess et al., 2018; Elce, 2021; Foote, 2015; Freeman et al., 2022; Reder & Crimmins, 2018) tout strong mentors as crucial in raising students' confidence in their abilities and motivating them to use resources effectively. I saw similar indications, such as the student who shared how their mentor's advice led them to engage in research they were initially uninterested in, but which ultimately became a valuable and fulfilling experience.

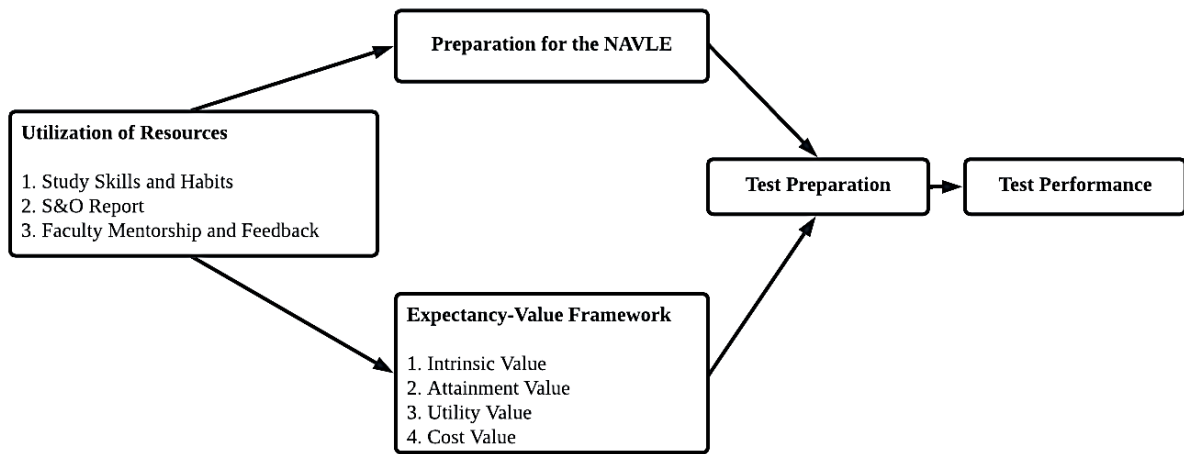
Clearly, there is a strong alignment between what students want to accomplish, what they need to achieve success, and what is available to them. Thus it is important to make a direct link between academic tasks and long-term success if educators want to improve the likelihood that students avail themselves of available support (Cake et al., 2019). While participants obviously perceived resource use as important, as indicated by the coded-segment themes related to Research Question 4, efforts to increase their perceptions of the *utility* and *intrinsic values* of those resources will help motivate students actually to put those resources to work. Emphasizing the practical application of SVU's academic-support options, such as increasing the quality and availability of faculty mentors or providing more-detailed feedback, could achieve that aim—a suggestion also put forth in several other studies (Cake et al., 2019; Loh, 2019; Wigfield & Eccles, 2000; Xu, 2022).

Theoretical Implications

From a theoretical standpoint, this study demonstrated the utility of the EV-F as a tool for understanding students' motivation and the value they placed on the resources provided by SVU. The clear distinctions between *intrinsic value* (enjoyment and personal satisfaction in their studies), *attainment value* (importance of success), *utility value* (practical relevance), and *cost value* (time and effort spent) offered a nuanced understanding of how participants approached NAVLE preparation through resource utilization. Use of the EV-F suggested that students who saw high *utility* and *attainment values* were likely invested in their studies and persisted in their efforts, despite the substantial *cost value* of their sacrifices.

A modified EV-F framework helps understand students' motivations and perceptions, and was a good explanatory model for our findings.

FIGURE 11
MODIFIED THEORETICAL FRAMEWORK



The Expectancy-Value Framework (EV-F) has traditionally been used to explain academic motivation and achievement choices in classroom settings (Wigfield & Eccles, 2000; Xu, 2022). To our knowledge, this study is the first to apply EV-F as a management framework for understanding how professional students navigate high-stakes licensure preparation. By doing so, we extended the theory in three ways relevant to management policy and practice.

- Initially, we demonstrated that EV-F's four value dimensions (intrinsic, attainment, utility, cost) are not merely psychological constructs – they may be used as diagnostic indicators so that institutional managers can identify motivational bottlenecks. For example, our finding that students perceive high cost-value (time, effort, stress) but only moderate utility-value (long-term payoff) suggested a specific policy lever: educational leaders should not simply provide more resources, but should explicitly link preparatory activities to career outcomes to raise perceived utility.
- Subsequently, we extended EV-F to a new empirical domain: the management of professional licensure pipelines. Prior EV-F research has focused on course-level achievement (grades, persistence). Our study applied the framework to a high-stakes external examination (NAVLE) that determines workforce entry. This shift has direct managerial implications: schools that monitor and respond to students' value perceptions may improve not only student motivation but also institutional outcomes such as pass rates, accreditation standing, and workforce supply pipelines.
- Lastly, our findings suggested a novel tension within EV-F that has not been emphasized in prior literature: students report high intrinsic and attainment value (they want to become veterinarians) but simultaneously experience high cost value (time, stress, sacrifice). This misalignment—between the strength of career commitment and the perceived burden of preparation—represents a management problem, suggesting that interventions should not focus on increasing motivation (which is already high) but on reducing perceived cost through structured mentorship, personalized feedback, and flexible study pathways.

From a policy perspective, this extension of EV-F offers a practical framework for accreditation bodies and institutional leaders. Rather than relying solely on pass-rate metrics, they could use EV-F dimensions as leading indicators of student engagement and readiness. For example, regular assessment of utility value and cost value could identify cohorts at risk of disengagement before performance declines.

In summary, by extending EV-F from educational psychology to the management of professional licensure preparation, this study contributes both theoretical and practical insights. We encourage future research to apply EV-F to other high-stakes professional pipelines (e.g., medicine, nursing, law, accounting)

and to develop intervention designs that test whether increasing utility value or reducing cost value causally improves pass rates and workforce entry.

This study also contributes to the literature by highlighting how students' intrinsic motivation could diminish due to academic pressures, emphasizing the need for sustained academic and emotional support throughout their veterinary education. It also provided a deeper understanding of how feedback between students and faculty—mainly through tools like the S&O report—can be a key factor in maintaining or enhancing motivation. These insights likely apply to other professional fields involving high-stakes licensing exams, suggesting that educational psychology motivational theories like the EV-F can be instrumental in understanding how to create supportive environments.

Finally, the themes we generated from the QCA coded segments suggested that faculty mentorship is enormously impactful, not only for providing academic guidance but also in how it shapes students' professional identities and resilience. This study showed how these theoretical constructs were affected by the type and quality of mentorship and feedback students received, emphasizing the importance of creating a positive academic environment where such interactions are timely, constructive, and personalized. Further in-depth theoretical exploration into how faculty-mentorship relationships and feedback influence student motivation could more fully develop models showing how these mechanisms can assist in developing professional careers.

Practical Implications

Practically speaking, this research revealed several strategies that veterinary schools could adopt to more efficiently provide academic resources and improve student preparation for the NAVLE. One key recommendation is to increase the availability and quality of faculty mentorship opportunities, as students with consistent access to supportive mentors were more likely to feel confident. Veterinary schools can implement structured programs in which faculty proactively engage with students throughout their academic journey, especially as they prepare for the NAVLE. Faculty should be trained to provide both academic feedback and emotional support, assisting mentees in managing the stresses associated with veterinary school and preparing for the licensing exam.

Another practical implication is the need for more structured and consistent use of feedback tools like the S&O report. This study found that when students received detailed, personalized data on their strengths and weaknesses from the assessment side, they were more motivated and better able to direct their study efforts. Veterinary schools should integrate such tools into their curricula as a standard part of exam preparation. Implementing such improvements will help students make the most of the feedback and resources they receive and need. This could be enhanced through professional development sessions for faculty focused on providing constructive, actionable feedback and on directing mentees to the appropriate resources to improve NAVLE preparation.

Finally, the evidence suggests a sound rationale for helping students see the connections between their academic efforts and future careers. Thus, schools should focus on reinforcing the practical application of veterinary knowledge through clinical rotations, course-to-course connections, additional case-based learning, and real-world simulations, each which could increase student's EV-F *utility value* and help them stay engaged throughout their education.

Limitations

This study had unavoidable limitations, including a) participants were students who had not yet attempted the NAVLE, and thus there were no quantitative data to compare to the qualitative ones; b) the study relied solely upon interviews, which are forms of self-reports; and c) there was no direct observation of students.

Recommended Future Research

Those limitations limited the scope of this study and left several avenues of inquiry unexplored. When SVU opened its doors in 2021, it was the newest veterinary school in the nation. Just three years later 11 more veterinary schools had been announced by the AVMA (Brooks, 2023); with such rapid growth, an

extensive study examining *all* of these programs might be worthy of external funding. Other studies, conducted in collaboration with other veterinary schools across different regions, would help determine whether these findings be generalizable.

A second recommendation concerns the timing of the interviews. This study was conducted after the academic year concluded, and veterinary students at SVU typically complete 42 semester credit-hours in a full year of the school's curriculum. At the end of a rigorous year, participants could have been mentally exhausted from their efforts, affecting their responses. Future research, including interviews conducted throughout the year, could give a better picture of how students' perceptions may change over time, including year-over-year. Such longitudinal research, tracking students from their entry into veterinary school through their completion of the NAVLE, may provide insight into how motivation evolves, and how using resources like the S&O report or faculty mentorship affects long-term outcomes. This would allow a researcher to examine whether specific resources have a lasting effect on student success; for example, do students who receive consistent faculty mentoring and feedback from the beginning of their academic career perform better on the NAVLE than those who received it sporadically, or only in their final year?

A third recommendation is to consider a mixed-methods approach, combining quantitative data from NAVLE scores or course grades with interviews to examine the relationship between perceived motivation and actual performance. This approach could be used to assess the effectiveness of specific interventions, such as comparing NAVLE pass rates before and after implementing different strategies or deploying new educational resources. Doing so would require a fully dedicated team versed in qualitative and quantitative methods of observation. For instance, our participants often echoed each other in terms of the *values* associated with each research question, but the overlap was not, of course, complete. Occasionally, one dimension would not be particularly salient for the interviewees as a whole, but one or two students would nonetheless emphasize it. Future studies could further investigate such instances; digging into the "why" behind which EV-F dimensions are strongest for different students could well help educators and mentors design learning plans and tailor their feedback to emphasize the things that would be most impactful for a particular individual.

Similarly, it could be fruitful to examine coded segments in terms of their emotional content. For the purposes of this research, whether themes were mentioned in a positive or negative light was not important; the coded segments indicated that the related theoretical dimension was relevant. Exploring valence-based emotional dimensions would almost certainly be wise, since emotions are likely to strongly influence how students perceive the effort and value involved in using academic resources.

The final recommendation is to further explore the influence of faculty mentorship on student outcomes in professional schools. While this study demonstrated that mentors played a role in motivating students in terms of how they navigated veterinary school and how they were preparing for the NAVLE, future research could dive deeper into how faculty mentors affect students' academic and career development. For example, what mentorship approaches most effectively enhance student motivation, confidence, and performance? How does the consistency or quality of the mentoring relationship influence students' educational and professional careers? These questions could illuminate the role of mentorship and its effectiveness in meeting student needs.

Closing Statement

We feel this study emphasizes the multifaceted nature of veterinary education. While much of the educational research in high-stakes testing environments traditionally focuses on quantitative outcomes and predictive data, this project highlighted the need to capture qualitative insights into the experiences of students. To fully understand student success, veterinary programs must go beyond numeric scores and algorithms, and also focus on enrollees' motivations, challenges, and perceptions, to better understand their educational journeys.

The findings suggest that veterinary programs should adopt a more comprehensive approach to supporting students' NAVLE preparation by developing or enhancing resources that address academic and emotional needs, particularly in simultaneous fashion, such as by increasing and improving faculty mentorship, in addition to giving timely feedback and deploying the S&O report. These educational

resources would be particularly beneficial to students who require additional motivational and emotional support. Moreover, while predictive data such as practice-exam scores provide useful insights into potential outcomes, they do not fully capture the complexity of a student's readiness or overall well-being. By combining quantitative results with student-reported confidence and perceived preparedness, veterinary schools can achieve a more holistic assessment of student readiness.

In conclusion, veterinary school is hard! Veterinary students are essentially learning to be doctors for every kind of patient imaginable, from household pets to livestock and even wildlife. This is a huge responsibility, and by proactively creating an environment that values intellectual growth and emotional well-being, veterinary schools can innovate educational strategies that prepare students for exams like the NAVLE and the complexities of their future careers. This research reaffirms the importance of integrating qualitative findings into educational practices and outcomes assessments: Such insights would empower institutions to develop a deeper connection to their students, and this connection would help cultivate the next generation of veterinary professionals, equipped to contribute meaningfully to animal health and welfare.

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ENDNOTES

1. A Type I (Single-Case Holistic) design investigates a single, localized case. It examines the overarching nature of a single entity, program, or organization without considering separate embedded sub-units.
2. Design 11, or Counterbalanced Design, is a quasi-experimental method used when multiple intact groups are tested, with each group receiving all treatments or a mix of treatments in a rotated sequence to control for group differences.
3. Additionally, some segments were coded with a “negative” theme, which referred to experiences or perceptions that detracted from participants’ overall sense of preparedness or motivation. For purposes of this research, the “negative” code was sort of irrelevant; what was important was determining which dimensions of the EV-F were salient for each research question. See the Recommended Further Research section for more details.
4. Percentages were taken from MAXQDA (total equals 100). There were 195 coded segments from the focus groups and 593 coded segments from the individual interviews.
5. Similar conclusions can be found in Elce (2021), Foote (2015), and Huebner (2022).

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APPENDIX 1: CODEBOOK STRUCTURE

1. Intrinsic Value

- Definition: Enjoyment or satisfaction derived from performing the task itself.
- Indicators:
 - a) Expressions of personal interest or passion for veterinary medicine
 - b) Descriptions of enjoyment or satisfaction from learning or studying
 - c) Mention of vocational calling or intrinsic motivation

2. Attainment Value

- Definition: The importance of doing well on the task as it relates to personal goals and self-perception.
- Indicators:
 - a) Statements about the importance of passing the NAVLE for personal achievement
 - b) Use of resources, such as the Strengths and Opportunities report for self-improvement
 - c) Reflections on personal goals and aspirations

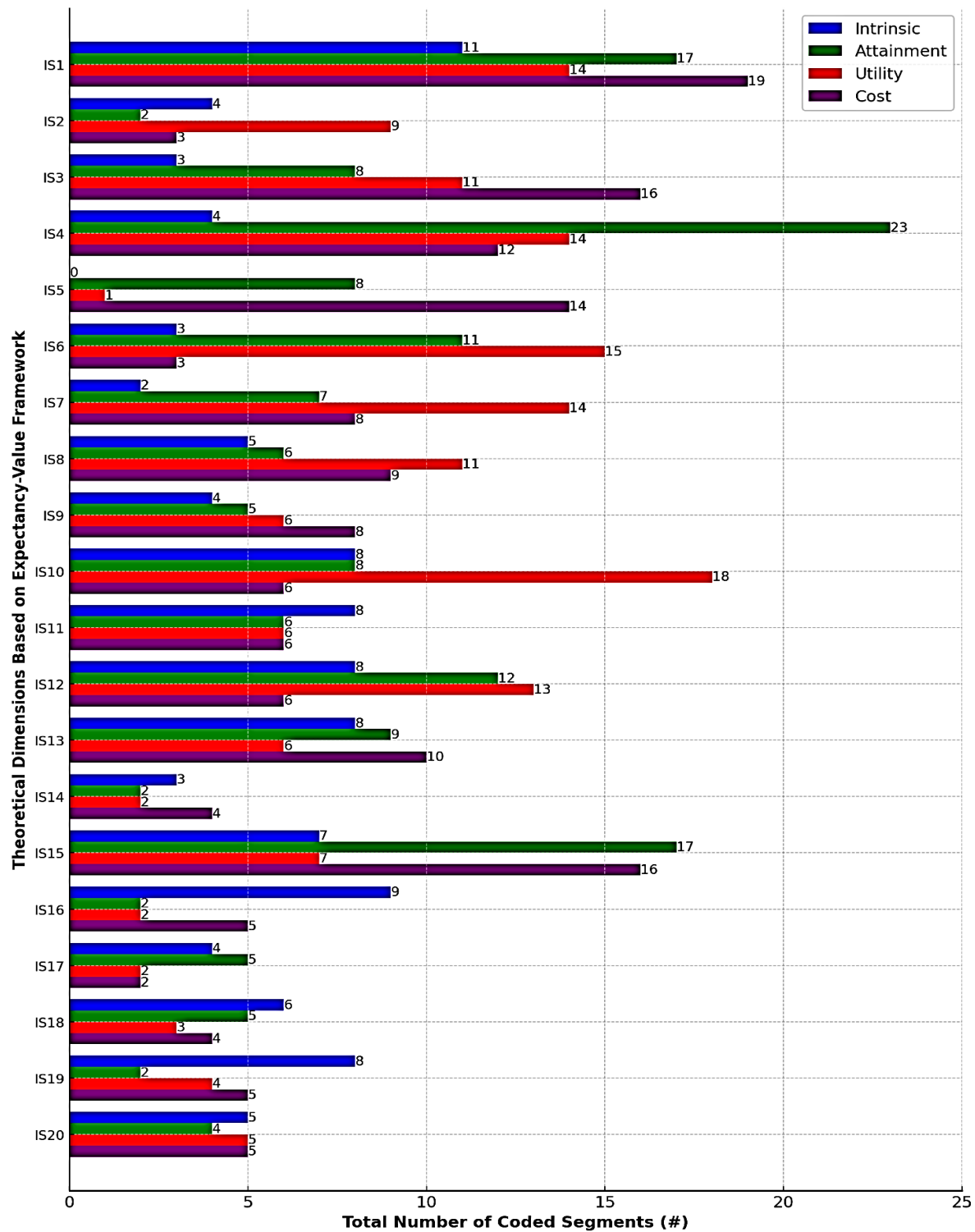
3. Utility Value

- Definition: The perceived usefulness of the task for future goals.
- Indicators:
 - a) Discussions on how studying for the NAVLE is beneficial for future career plans
 - b) Mention how SVU resources and faculty mentoring help prepare for the NAVLE
 - c) Discussions on future plans after veterinary school

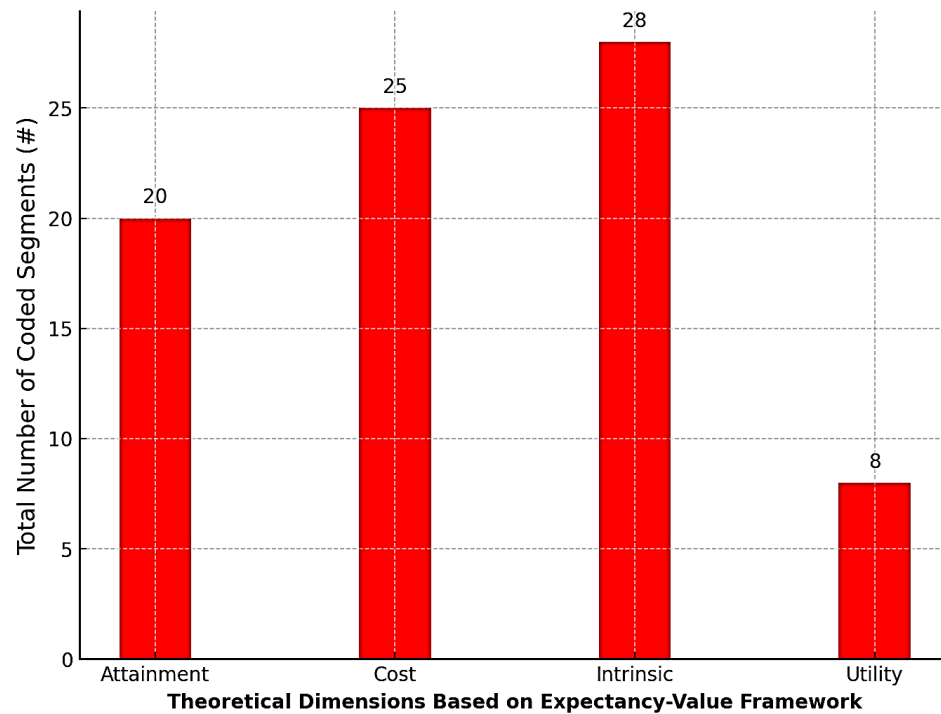
4. Cost Value

- Definition: The perceived negative aspects, including effort, time, and opportunity costs.
- Indicators:
 - a) Complaints about the time and effort required to study for the NAVLE
 - b) Discussions about sacrifices, such as giving up social activities or other opportunities
 - c) Reflections on the mental and emotional toll of NAVLE preparation

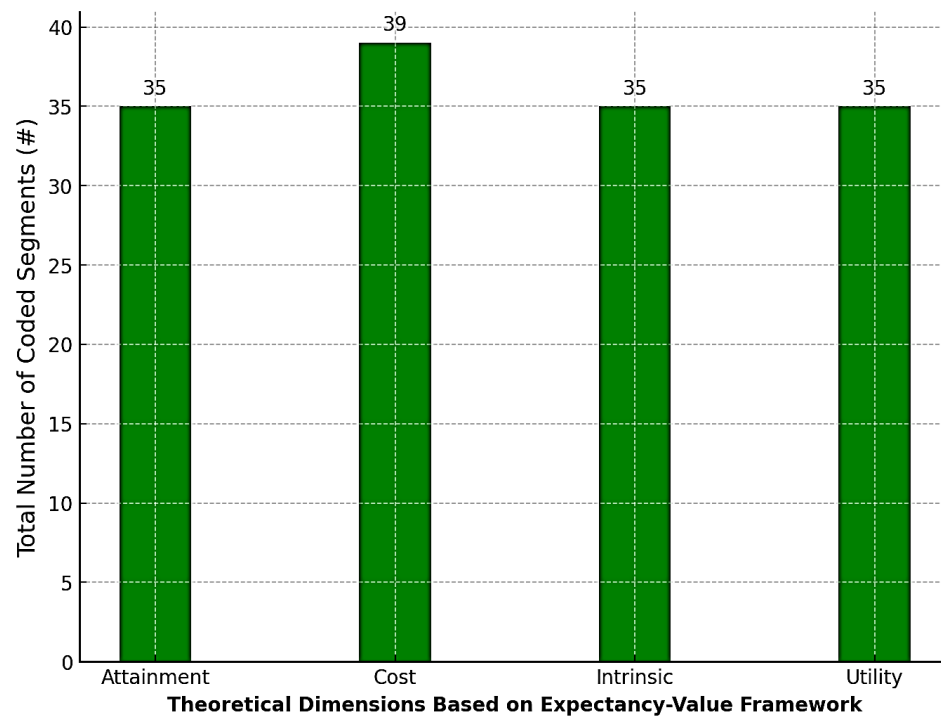
APPENDIX 2: TOTAL CODED SEGMENTS USING THE EV-F FOR INDIVIDUAL INTERVIEWS



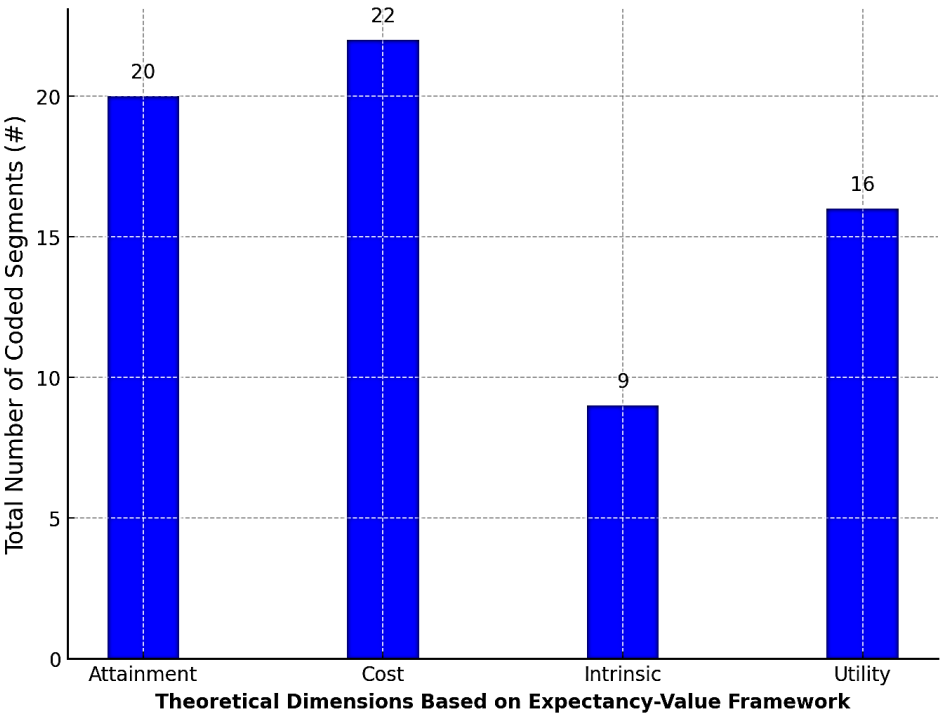
APPENDIX 3: RESEARCH QUESTION 1 – ALL CODED SEGMENTS



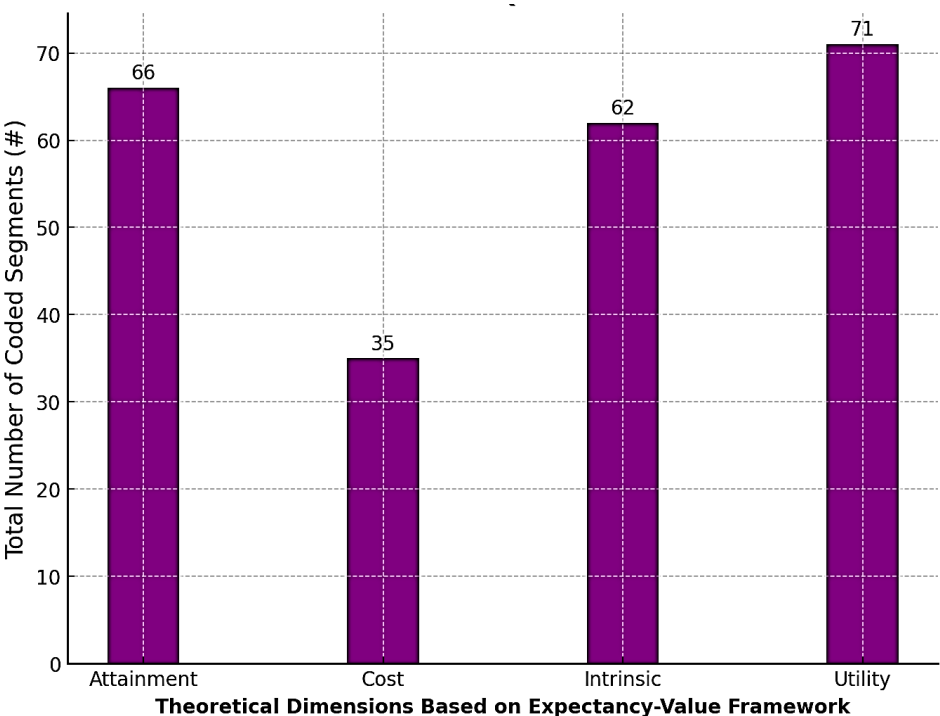
APPENDIX 4: RESEARCH QUESTION 2 – ALL CODED SEGMENTS



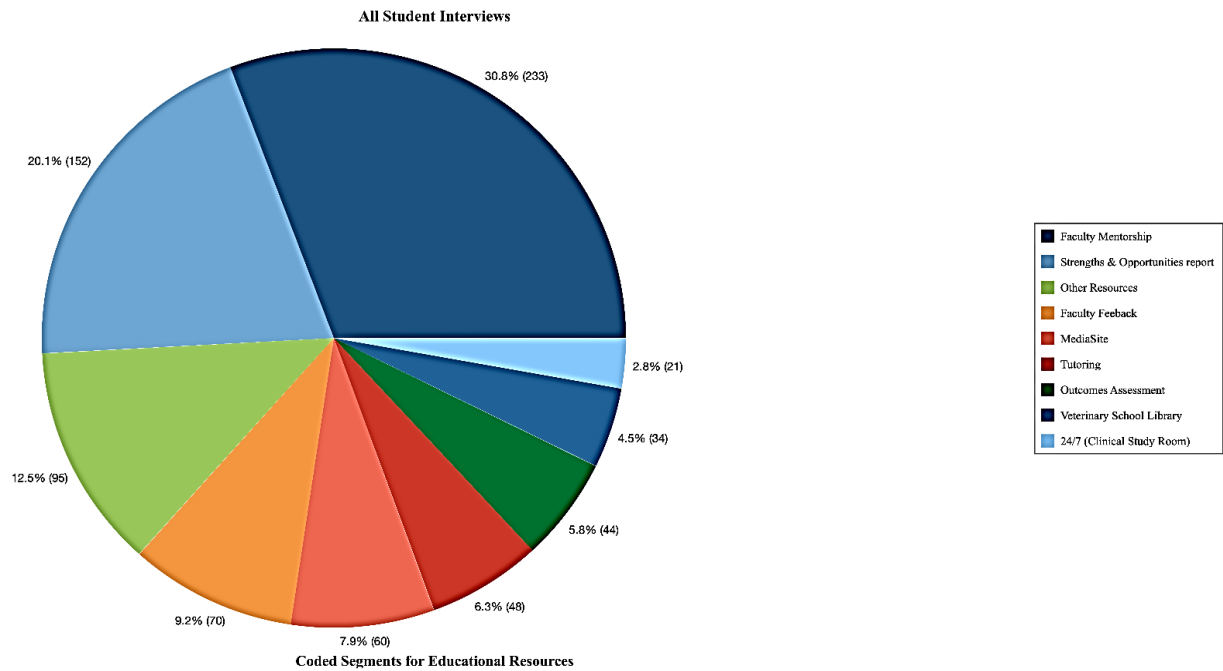
APPENDIX 5: RESEARCH QUESTION 3 – ALL CODED SEGMENTS



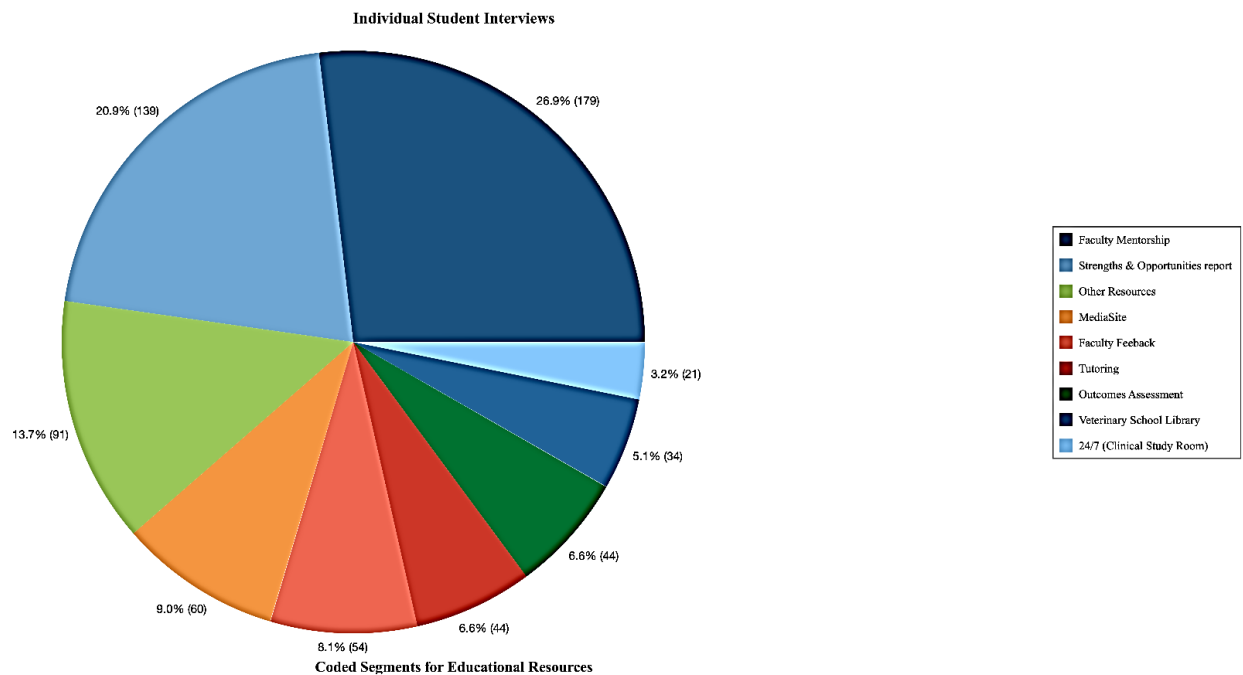
APPENDIX 6: RESEARCH QUESTION 4 – ALL CODED SEGMENTS



APPENDIX 7: TOTAL CODED SEGMENTS FOR EDUCATIONAL RESOURCES FOR ALL STUDENT INTERVIEWS



APPENDIX 8: TOTAL CODED SEGMENTS FOR EDUCATIONAL RESOURCES FOR ALL INDIVIDUAL INTERVIEWS



APPENDIX 9: INDIVIDUAL VS. FOCUS-GROUP THEORETICAL DIMENSION

