Does it Make the Grade? Clinical Grading in an Optometric Program

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Does it Make the Grade? Clinical Grading in an Optometric Program

by Marc B. Taub

A Dissertation Submitted in Partial Fulfillment of the Requirements for the
Degree of Doctor of Education

Major: Higher and Adult Education

The University of Memphis

December 2022
ABSTRACT

In this naturalistic and formative evaluation, the purpose of the study was to examine and understand how the clinical grading system at Southern College of Optometry (SCO) is being used, whether it is effective as a grading system and in teaching, and how it can be improved to better suit the needs of administration, faculty, and students. I used Experiential Learning Theory to view clinical grading as an opportunity for reflection and investigated whether the grading system was being used for that purpose.

I interviewed three administrators and conducted both a faculty and student focus group with six participants each. Through thematic analysis, five themes developed: (1) Faculty expectations develop with experience, are highly personal, and have an impact on learning; (2) Faculty feedback can have a positive or negative impact on student learning; (3) The clinical grading system is used in a variety of ways and for different reasons by the faculty, administrators, and students; (4) Clinical grading is subjective and has challenges that inhibit its effective use; and (5) The clinical grading system continues to evolve and grow to meet the needs of all parties.

The current clinical grading system at SCO is partially effective for grading and teaching but has barriers that hamper student reflection. It has a variable impact on shaping student learning and performance based on how it is being used by both faculty and students. The grading system mostly meets the needs of the various stakeholders, but I make recommendations toward process improvement. The recommendations are both specific to SCO and more broadly, to optometric education.
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Chapter 1: Introduction

Personal Context

I have been teaching optometry since 2003, and clinical grading has been a constant thorn in my side. As I have spent most of my teaching time in the clinic, I have had unique experiences in helping to determine what is average to above average versus poor student performance. Every faculty member has different experiences to help guide them in this process. This is at the heart of the problem I investigated. As Chief of the Vision Rehabilitation service at Southern College of Optometry (SCO), I routinely have to determine overall clinic course grades, including identifying those who fail or receive honors. Several years ago, I noticed that all students getting honors were coming from a specific day of the week in the clinic; they worked with the same two faculty members. That realization sent me down the path of trying to figure out why there was a disparity. I began sharing the students’ grades with the faculty throughout a given semester and letting them know who would be receiving honors. I asked two simple questions: “Do these students deserve honors” and “do any students not getting honors deserve it?” This was a wake-up call for several faculty members, as the impact of their over- or under-grading was in full view. For other faculty members, this wake-up call did not alter their grading behaviors. Over the years, I have had many conversations with faculty members on this topic, and to a person, they all find it confusing at best and ask for more guidance/parameters. These conversations began with the faculty in my service—about ten of them—but I quickly realized that those in other services were having issues as well.

There are two statistics of concern in grading that I have seen in use throughout my 18-year career in optometric education: the average and standard deviation. Some faculty are generous graders while others are stringent. In this case, the standard deviation represents how
well the faculty member differentiates student performance. If the standard deviation is high, the faculty member is able to determine the spectrum of performance. If low, they tend to give the same grade regardless of performance. The grading statistics for the faculty at SCO in the clinic, including those in the vision therapy service that I lead, show a combination of averages and standard deviations. In discussing grading with faculty members over the years, most can give little explanation of why they grade as they do. They have trouble verbalizing different performance levels and “just know” where performance is on the spectrum. This indicates that while the grading rubric is set up in a concise, easy-to-use format, the outcome is less than reliable and requires better understanding and investigation. It was my initial thought to attempt to provide best practices in clinical grading for optometric education, but I quickly realized that even within my institution there were significant issues and disparities with clinical grading. Hence, I decided to narrow my focus and look closer at clinical grading at my institution, SCO by evaluating their current clinical grading practices.

As the Chief of the Rehabilitation Service, I work directly with 14 faculty, including four residents. I have access to grading statistics from those 14 and the entire complement of more than 60 faculty members by service area. As an optometry professor, I have personally worked with thousands of students and have graded at least 30,000 encounters. I have also participated in the Clinical Grading Committee twice, looking at the system to determine if changes were needed.

As faculty members, despite having a grading system that is well thought out and developed, we are essentially using our past experiences and “winging it.” Since grades determine whether students become doctors and help determine placement in residency and even scholarships the student might receive, clinical grading demands our attention.
Background of the Study

The ultimate goal of any program is to produce competent practitioners; optometry programs are no different. Since the four-year curriculum is split between didactic and clinical experiences, different assessment and grading methods are required. In clinical courses, grading protocols are specific to the optometric program. While they may generally attempt to assess the same types of information, they do so in very different manners. Some programs use Likert grading scales, others use written comments, and others use a combination of the two. The frequency of grading and feedback also occurs at various times, depending on the program. For example, at SCO in Memphis, grading is performed in a formative manner; grades are given for each patient encounter, and feedback is provided to the student. At the New England College of Optometry (NECO) in Boston, grading is done in a summative manner at the end of the term. There is a lack of uniformity on many fronts and, hence, a lack of best clinical grading practices in optometric programs.

A grade is completed for each patient encounter at SCO. After the student sees a patient, they log the encounter, and a request for an evaluation or grade is sent to the faculty member with whom they worked with for that patient encounter. The faculty member is then responsible for completing the grade, which is sent back to the student. The clinical grading presented below is used throughout the student’s third and fourth years and is the same rubric, regardless of the clinical service in which the patient care takes place. There are two components to each grade (see Figure 1). The first component consists of six categories, with a Likert scale of 1 to 3 is used to indicate performance. The faculty member also indicates whether the student was professional during the examination in a yes/no format. The second aspect of the grade consists of two text
boxes where the faculty can speak directly to the student, letting them know precisely what they have done well and what needs improvement.

![Grading Form](#)

**Figure 1. Example of the Grading Form Completed by the Faculty Member at SCO**

There are issues inherent with this system employed by SCO. There is guidance provided within the grading program, in the form of pop-up boxes, as to what each of the categories includes; however, there is no indication of what constitutes a grade of 1, 2, or 3. This decision making is left solely up to the faculty member. There is a wide disparity in average grade and standard deviation in examining the database related to grading by faculty member. Some faculty grade high and have a tight standard deviation; these are easier graders who poorly discriminate between excellent, acceptable, and poor performance. Others tend to grade lower and have larger
standard deviations, perhaps indicating that they are better discriminators of performance. This is based on their expectations for the student at that point in their careers and the difficulty/type of patient encounter. The administration offers little guidance on how to grade; this is purposeful and aims to promote academic freedom and decision making on the part of the faculty.

Even though the clinical grading system is consistent among all of the different clinical services, and the grading rubric remains unchanged, what constitutes a 1, 2, or 3 can also differ based on the clinical service in which the patient is seen. A failing grade in a specialized service in which extensive knowledge in a given area is needed may lead to a passing grade in a primary care service. This is related to the skills needed to provide the care and the demands of the faculty in those services. For example, as a faculty member in the vision therapy service, I expect the students to understand and know the subject matter, and I hold them accountable.

The entire system of grading at SCO, to my knowledge, has not been evaluated from both a top-down and bottom-up approach since being created more than 20 years ago. A grading committee is convened every two years, but only small alterations are made to the grading matrix. While this allows for fixes on a micro-level, it does not address macro-level issues and concerns. In this study, through interviews with administration and focus groups with students and faculty, my hope is to create an understanding of how the grading system is being used by the various parties and whether it is effective when examined through the lens of the experiential model. This understanding may lead to the creation of a set of best practices for other colleges to mirror.

**Significance of the Study**

Examining and understanding how the grading system at SCO is being used, whether it is effective as a grading system and in teaching, and how it can be improved, has an impact on
more than the SCO community. The hope is not only to influence the clinical grading system at SCO but also to offer other programs the opportunity for reflection on their own grading systems. As there is a lack of best practices and a lack of literature on this topic in optometry, this study is a unique opportunity for other optometry programs to get a clearer view of one college’s clinical grading system.

**Theoretical Framework**

**Pragmatism**

Pragmatism is a word we use to describe a particular way of addressing and resolving issues. For some, it has a positive connotation (being practical, getting things done, being able to compromise), while for others, it is negative (lack of principles, sloppy thinking; Ormerod, 2006). Pragmatism as a philosophy is based classically on the work of Charles Pierce, William James, and John Dewey historically, and more recently, on the work of John Murphy and Richard Rorty (Creswell, 2014; Ormerod, 2006). For pragmatists, how they view the world comes from actions, situations, and consequences. They emphasize choosing explanations that can produce the desired outcomes and agree with positivists/post-positivists that there exists an external world independent of people’s minds. In pragmatism, “both knowledge and social reality are based on beliefs and habits which are socially constructed by the process of institutionalization, legitimation, and socialization” (Pansiri, 2005, p. 197). The central concept in Dewey’s version of pragmatism is freedom of inquiry: “individuals and social communities can define issues that matter most to them and pursue those issues in a way that is most meaningful to them” (Morgan, 2014, p 105). It is the pragmatist view that it is impossible to pursue a line of study without understanding its history and how development to the current situation took place. Pragmatists deny the idea that truth is a set thing or idea and can be
determined. They relate the concept of truth with good or bad; it is based on experiences, beliefs, and interests (Pansiri, 2005). In investigating the concept of clinical grading, I believe that so much of what we do, how we do it, and even why we do it are steeped in our past experiences. Conceptually, this aligns with the pragmatic philosophy best and has practical applications for a profession’s real-world issues.

Although I used pragmatism as the theoretical foundation of this study, the pragmatic qualitative research approach does not require espousal to any single philosophy (Morgan, 2014). Those choosing this approach may adopt a range of philosophies including, but not limited to, pragmatism and critical theory. There is also no one way to perform research within this theoretical framework. In this regard, researchers are free to decide what and how to research based on their intended goals. They are also free to pick the methods, techniques, and procedures that best meet the needs of the study (Morgan, 2014).

The pragmatic qualitative research approach can be used to study various phenomena, which suits my needs as I progress in this research and, perhaps, subsequent studies in this area. In this study, I strived to study individuals (those doing the grading), structures (the grading scaffolding), and processes (how we accomplish the grading). Using this approach allowed for data collection in a natural environment and offered various data collection options, including interviews, focus groups, observation, and document review. The use of coding to analyze the data fits the type of data gathered in the study. Most importantly, this research type is practical and can be related to the specific practice, clinical grading, that I studied (Fossey et al., 2002).

Experiential Learning

Experiential learning theory originates in the work of educator John Dewey. Dewey (1938) espoused the concept that learning occurs during and from experience. This became the
foundation for what is now known as progressive education. According to Dewey (1938), not all experiences produce learning; some may miseducate, leading to less-than-meaningful experiences where learning or growth does not occur. For learning to occur, the learner must connect with the experience, and the experience must be genuine (Murray, 2018).

Drawing upon the works of Dewey (1938), Piaget, and Lewin, Kolb (1984) defined experiential learning as the process whereby knowledge is created through the transformation of experience. The Kolb learning model consists of four stages through which learners progress during the learning process: concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb & Kolb, 2011). Learning is effective when there is a progression by the learner through these four stages. The model is more complicated than a circular cycle, in any case. It is composed of two modes of grasping experiences (concrete experience and abstract conceptualization) that are oppositional and two modes of transforming experiences (reflective observation and active experimentation) that are also oppositional.

The learning cycle is conceptualized as the individual starting the process by having a concrete experience, which is the basis for observations and reflection. The reflections are integrated into abstract concepts from which implications can be drawn and actively tested and experimented in future experience. Zull (2002) provided a connection between Kolb’s cycle and neurology:

Concrete experiences come through the sensory cortex, reflective observation involves the integrative cortex at the back, creating new abstract concepts occurs in the frontal integrative cortex, and active testing involves the motor brain. In other words, the learning cycle arises from the structure of the brain. (pp.18-19)
While it may seem on the surface that everyone enters the cycle at the same stage, this is not the case. Each learner has a natural preference for the learning mode they choose based on their heredity, current situation, and past experiences. These learning styles are accommodating, diverging, assimilating, and converging (Kolb & Kolb 2011). Each learning style draws from two adjacent learning abilities; there is almost a tug of war as the learner transitions from one to another, only to experience friction as they do so. It is this creative tension that pushes the individual in the learning process. Mahmoud (2015) proposed that a student’s awareness of their learning style will help them adapt to Kolb’s experiential learning cycle, better preparing them for clinical rotations in medicine.

In viewing the four stages of the Kolb experiential learning cycle concerning the clinical optometric learning experience, the following connections emerge (see Figure 2):

- **Concrete experience:** Students are assigned a patient while they are in the clinic, and they perform an examination, which includes a history and physical examination, and they develop a differential diagnosis and a plan. After confirming treatment with the faculty member, they initiate treatment, be it glasses, medication, therapy, a minor surgical procedure, or referral.

- **Reflective observation:** The student attempts to make sense of what has taken place and reflects on the encounter. This reflection begins with rethinking the case by completing the chart and considering mistakes and choices made but includes feedback from the faculty member to assist and facilitate the process. This feedback begins verbally when the student presents the case findings, continuing and completing the examination and wrap up post-completion during the case. Clinical grading, which includes written and numerical feedback, should be considered part of the reflective component. The faculty
member must, of course, use it in this manner, offering productive feedback to enhance reflection, and the student must be open to hearing the feedback and using it as part of their reflection.

- Abstract conceptualization: The student builds on the reflection to improve. This can take place as a building of knowledge or skill. The student self-directs their learning, chooses to practice a given technique, or learns more about a given topic or condition regarding the previous patient encounter.

- Active experimentation: The feedback from the faculty member and self-directed learning helps the student integrate and experiment with their new knowledge or approach and test it in future patient experiences. This experience will then, in turn, lead to the process of starting anew.

![Figure 2. Kolb’s Experiential Learning Theory Modified to Include Clinical Grading (“Experiential Learning,” n.d.)](image)

In looking more closely at the reflection component of the process, the question arises as to whether clinical grading offers the opportunity for reflection to take place at a deep enough level. No reflection would represent surface learning, and critical reflection would represent deep
learning; there is a spectrum between them. This occurs for several reasons. The time at which the reflection takes place may not be appropriate for the learner to gain as much as possible to best integrate that knowledge (Allodola, 2014). For example, a student who is stuck in acquisition may not reflect as deeply during clinical experiences as one who has moved into specialization and especially integration. The student also may have limited previous experience in that specific specialty, limiting their ability to draw upon past experiences to integrate new knowledge and alter their behavior. Reflection should be tailored to the individual’s developmental stage in learning to ensure positive experiential learning. For example, discussing efficiency methods might be more appropriate with a more experienced student, while topics on exam techniques may be more suitable for the novice. Another barrier to experiential learning is a lack of motivation or desire (Murray, 2014).

Given that there are numerous specialty areas within the profession of optometry, not all students and clinicians have interest in providing care for all patients. For example, clinicians who treat pediatric patients often have less desire to treat those with complex ocular diseases requiring significant medications and testing. As self-directed learning is crucial to the experiential learning process, lack of motivation and desire to learn a given topic or aspect of care can be a limiting factor.

Another issue relates to time (Murray, 2018). In the clinical setting, patients can present at a rapid pace. Students may finish one patient only to have another waiting in the wings. Completing the day’s charts and grade submission may take place hours later. Reflection in this manner is delayed in many cases. The student and faculty member may not get time to discuss the case on that given day in great detail, hampering the reflective process.
Completion of the grade on the part of the faculty member is also often delayed. Depending on the doctor’s workload and schedule, feedback in written form is often not given at least until the next day, and it might be as long as several weeks later. The quality of the feedback given suffers as the faculty member does not recall specific performance, impacting the reflection’s depth. The student also does not recall the patient most likely, affecting their ability to reflect. This renders the feedback that they have gotten less meaningful and more challenging to use during the learning process.

Another major issue with reflection in the clinical grading process relates to the type of feedback given. Comments may be surface level and mention a given technique or diagnosis but do not provide the student enough direction from which to reflect and grow. Does the feedback offer the opportunity for positive reflection even if the performance was poor? Does the feedback, in contrast, offer anything for the superior student to continue their growth? This ties back to Dewey’s concept in pragmatism that experience can be both good and bad; clinical grading is just one-way in which educators can influence that experience.

How the Framework Informs the Study

The true purpose of this study is education. Optometrists who are also educators strive to produce the best-trained optometrists. The theories of pragmatism and experiential learning provide a foundation as to how educating the best optometrists should take place. Kelly and Cordiero (2020) broadly defined their approach to pragmatism as “a philosophical and epistemological framework for interrogating and evaluating ideas and beliefs in terms of their practical functioning” (p. 2). Hence, in this research, I strived to study individuals (those doing the grading), structures (the grading scaffolding), and processes (how we accomplish the grading). It is the practical functioning aspect that is attractive in the definition of pragmatism.
The purpose of this study was not to look at grading in a theoretical vacuum, but rather as a dynamic process, one of process improvement, which is at the heart of the pragmatic philosophy (Adeleye, 2017). Both theories hold that activity or experience is at the heart of the educational process, and both hold that knowledge is attained though experimentation and interaction with the environment. Furthermore, both hold that every educational activity or interaction must provide the opportunity for the student to take in new knowledge, reconstruct how it fits into what they know, and allows for the forming of new knowledge (Kolb, 1984; Morgan, 2014; Ormerod, 2006).

Clinical grading, in theory, should support the notion that the role of the teacher is to support learning in order to guide the student in having meaningful experiences. Yes, it has a purpose in assigning grades of pass and fail, but whether the clinical grading system at SCO is fulfilling the first mission is a major question. Not only was this study concerned with the effectiveness of our clinical grading, but it also explored how that grading influences the learning process and overall student education.

**Problem Statement**

Optometry is a four-year degree program following an undergraduate education. There are currently 25 colleges of optometry in the United States and Canada; some are private while others are associated with public, state-run institutions. A traditional optometry curriculum is four years in length and encompasses both didactic and clinical components. In most programs, including SCO, the first two years are mostly didactic, including lectures and laboratories, but there are introductory clinical assignments for limited periods (vision screenings, observations). The purpose of any medical program, including optometry, is to produce competent practitioners. Since the four-year curriculum is split between didactic and clinical experiences,
different assessment and grading methods are required. In clinical courses, grading protocols are program specific. While they may generally attempt to assess the same types of information, they do so in very different manners.

Student assessment in clinical courses is broken down into several categories including communication, demonstration of skills, documentation, critical reasoning and understanding, and professionalism (Oermann et al., 2009). Clinical reasoning is multifactorial and intricate. It is defined as “a collaborative and reflective process that involves content-specific knowledge, engagement of the patient and family in understanding clinical problems, and incorporation of the critical contextual factors” (Furze et al., 2015, p. 34).

Some programs use global rating Likert grading scales (Al-Mahroos, 2009). Global rating scales have several advantages over other formats, including ease of use by the faculty and distribution to both the faculty and students, ease of scoring and data analysis, ability to use the scale with a large number of students, flexibility, unobtrusive nature, and easy-to-decipher feedback. The downsides of the rating scales are questions of validity and reliability (Al-Mahroos, 2009). Confusing or imprecise categories or questions, variability in faculty approach and clinical environments, the ability of faculty to wear both the hat of teacher and evaluator, and the unwillingness of faculty to provide open and honest feedback and fail students are just some of the issues encountered with these scales (Gallant et al., 2006).

Some programs use written comments, and others use a combination of written and global rating scales. Written comments emphasize a qualitative versus a quantitative approach. It is questionable whether the inclusion of written comments enhances or improves the assessment process. Feedback should relate to the performance and should not involve the student’s character. It should be detailed and clear and communicate performance versus expected
standards. Praise or criticism should not be given on a personal level, and comparison to other
students should be avoided (Canavan et al., 2010).

The frequency of grading and feedback varies, depending on the program. For example,
at SCO, grading is performed in a formative manner; grades are given for each patient encounter,
and feedback is provided to the student. At other colleges of optometry, grading is done in a
summative manner at the end of the term by a grading committee, or grading is done daily,
weekly, or monthly.

Best practices have not been developed in optometric programs, and on the whole, there
is little uniformity. Even when a system is created, questions of validity and reliability arise
(Boulmetis & Dutwin, 2011). In many cases, how the grading protocol is being used differs from
the original intent. In searching the optometric literature related to clinical grading, there is not
only a huge gap, but research is absent. In other health professions, including dentistry, physical
therapy, medicine, and nursing, the topic has been studied to different degrees, but most continue
not to have best practices on which to build clinical grading paradigms (Al-Mahroos, 2009;
Canavan et al., 2010; English et al., 2004; Krischbaum et al., 1994). As information is absent, the
topic is ripe for investigation to assemble a best practice guideline. Before best practices can be
conceived for the optometric profession, understanding how one program, SCO, has designed
and used their grading system and evaluating it is a crucial first step on which to build.

**Purpose Statement**

In this naturalistic (Lincoln & Guba, 1985) and formative evaluation study drawing on
pragmatic theory (Dewey, 1938) and experiential learning (Kolb, 1984), I evaluated the current
clinical grading practices at SCO. In clinical courses, grading protocols are program specific. At
SCO and in this study, clinical grading refers to the assessment of optometric students pertaining
to various aspects of patient examinations with the goal of measuring student performance and
providing them feedback. Some programs use Likert grading scales, others use written
comments, and still others use a combination of the two. The frequency of grading and feedback
also varies, depending on the program. Every evaluator or faculty member uses the clinical
grading system differently based on their understanding of it and their inherent subjectivity. The
students also use the system differently and likely receive varying benefits. Furthermore, there is
a lack of understanding of the impact of clinical grading on the educational process and how both
the faculty and students interact with and use it.

This study evaluated the effectiveness of the clinical grading system at SCO as a means
of grading and teaching, how it is being used by faculty and students, and whether it meets the
needs of program’s stakeholders; it also determined potential improvements that can be made.
There are several stakeholders, administrators, faculty, and students, who have different needs.
The administration is required to meet the standards for grading based on the Accreditation
Council on Optometric Education (ACOE) guidelines. The faculty uses the grading system to
evaluate student performance. The students use the grading system as a means of gauging their
performance and determining where improvements can be made to become better clinicians. I
interviewed administrators and conducted focus groups with both third- and fourth-year students,
as well as faculty members at SCO to analyze the effectiveness of the current grading system in
use. SCO, located in Memphis, Tennessee, is a private college of optometry. The program of
study is four years, combining a mixture of classroom, laboratory, and clinical work, after which
the student is awarded Doctor of Optometry. SCO is one of 25 colleges of optometry in the
United States.
A qualitative approach was used in this study as it places a priority on the people and their experiences, which is a crucial aspect of this inquiry (Creswell, 2014). Each of the individuals participating has different experiences in life related to, but not limited to, optometry, which factor into how they use the grading system. The ability to explore those influences on clinical grading, for me, is an enticing feature of the study.

**Research Questions**

These are the research questions directing this study:

- How effective is the current clinical grading system as a method of grading and teaching at the Southern College of Optometry (SCO)?
  - How does the clinical grading system at SCO shape student learning and performance?
  - How does the current system used for clinical grading at SCO meet the Accreditation Council on Optometric Education (ACOE), administration, faculty, and students’ needs?

**Assumptions**

The inputs, activities, and desired outcomes of this qualitative research study are grounded in several assumptions or philosophical beliefs. Only by identifying these assumptions up front can we properly acknowledge their influence on the research design and process.

- Administrators know the process of creating the current grading system.
- Faculty members are interpreting the grading system differently from each other and using it differently than their colleagues.
- Students are interpreting the grading system differently from each other and using it differently than their classmates.
- Third- and fourth-year students interpret the grading system differently and use it in different ways.
- The current SCO grading system is being used differently than intended in the original design and differently than how the administration thinks it is being used.
- All participants answer openly and honestly.

Limitations

The following limitations have been identified. The students only know one grading system—the SCO system—so their understanding of others and the restrictions on what is possible at SCO is limited. The faculty and administration may or may not know other systems. I had an inherent bias as a current faculty member and service leader. There was always concern that there might be an unwillingness on the part of the participants to be open and honest.

Delimitations

Those being asked to participate are graduate students, faculty members who are optometrists, and college administrators who are also optometrists. Each individual had participated in the grading process on some level. In the case of faculty and administrators, they had been graded as students and had also been doing the grading as faculty.

Definition of Terms

Optometry: A health care profession that involves examining the eyes and applicable visual systems for defects or abnormalities, treatment visual system disorders and of ocular disease, and prescription of glasses or contact lenses.

Accreditation Council on Optometric Education (ACOE): Accrediting body for professional optometric degree programs, optometric residency programs, and optometric technician programs in the United States and Canada.
**Clinic:** Care facility for optometric services under the direct administration of a college of optometry. Students provide care under the supervision of faculty members serving as attending staff doctors.

**Research Design**

In this naturalistic and formative evaluation study, data collection consisted of two methods, interviews and focus groups, to gather information from a variety of sources: administration, faculty, and students. Using a semi-structured interview process, I interviewed three members of the SCO administrative team who played a role in establishing the clinical grading paradigm currently in use. The second group studied was the clinical faculty as they provide the grades in the clinical grading system. This group of six faculty was studied through one focus group and chosen by purposeful sampling (Palinkas et al., 2015), based on the length of time teaching at SCO and specific area of expertise. The third group, who took part as a different focus group, was made up of the students. In the clinical programs, 3rd- and 4th-year students see patients and submit grades for each clinical encounter to the faculty. Three students were included in the focus group for each, for a total of six students who participated.

The most appropriate method of analysis to understand the data in this study was thematic analysis. Thematic analysis involves the identification of recurring patterns that are presented as overarching statements or themes (Lochmiller, 2021). Braun and Clark (2006) define thematic analysis as “a method for identifying, analyzing, and reporting patterns (themes) within data” (p.79). There is more to thematic analysis than coding and counting the frequency of the codes, as such analysis requires the researcher to ascertain and to infer meaning within the data. The aim is “to consider how the reported information addresses a specific research question or invites new conceptual or theoretical understanding” (Lochmiller, 2021, p. 2030). These
questions tend to focus on the “why” or “what” and not on the “how.” This type of analysis can be used to make comparisons within a single interview, between interviews of the same group (length of teaching and service), between interviews of different groups, and between the administration and the faculty members. It is the themes that are generated that can then be presented to the program stakeholders.

**Findings**

Five themes, each with multiple subthemes developed. The five themes are as follows:

1. Faculty expectations develop with experience, are highly personal, and have an impact on learning;
2. Faculty feedback can have a positive or negative impact on student learning;
3. The clinical grading system is used in a variety of ways and for different reasons by the faculty, administrators, and students;
4. Clinical grading is subjective and has challenges that inhibit its effective use; and
5. The clinical grading system continues to evolve and grow to meet the needs of all parties.

**Recommendations Based on the Study**

One of the goals of this study was to make recommendations to the administration for potential changes to improve the functionality and impact on learning of the clinical grading system. Based on the three interviews and two focus groups, the following recommendations should be considered:

- An enhanced orientation for all new faculty should be initiated to ensure a good understanding prior to grading students.
- A regular discussion of the grading system including enhanced guidance from the administration should be initiated and done yearly. This should include a better understanding of how the grading system works behind the scenes.
• Eliminate the requirement for comments on certain types of follow up examinations, reducing the number of perfunctory comments.

• An enhanced orientation for all students should be initiated to ensure a good understanding prior to starting patient care in the third year as well as a follow up to ensure an appropriate level of understanding.

• Require all faculty members to write and deliver to students—prior to working with them—detailed expectations for patient care.

• Faculty feedback should be as specific and detailed as possible and include resources for students.

• Clinical course syllabi expectations should be updated and made as service specific as possible and shared with both faculty and students.

• Add opportunities for the students to ask questions within the grading system when submitting grades.

• Require all grades to be acknowledged in some manner by the students.

• Require all grades to be completed within a short time period to enable students the maximum level of reflection.

• Increase the importance of clinical grading in the faculty evaluation with an emphasis on grading as teaching.

Areas of Future Study

Further study should take place with a greater number of faculty and students to get a wider array of opinions and feedback using what has been learned in this study as a template for guidance. Other future studies could include a comparison of clinical grading at sister institutions.
in order to understand better how they accomplish the grading process and how their systems
developed to their current status.

**Study Overview**

This chapter introduced the research topic and addressed the following areas: background of the study, statement of the problem, purpose statement, research questions, the significance of the study, theoretical framework, and the study overview. Chapter 2 is a review of the literature on clinical grading and an explanation of the theoretical frameworks. Chapter 3 discusses the methodology of this study and includes the data collection methods and data analysis methods. Chapter 4 discusses the study’s findings based on thematic analysis. Chapter 5 interprets the findings, connects them to the literature, and offers recommendations for improvements to the clinical grading system.
Chapter 2: Review of Literature

As the clinical portion of the optometric curriculum comprises a significant portion of the four-year program, an investigation into grading practices, one of the main assessment outcomes, is warranted. Not only are there not best practices identified within the Southern College of Optometry (SCO), but there is a lack of literature related to clinical grading for optometric education. How can an assessment outcome that is so important and is included in Accreditation Council on Optometric Education (ACOE) guidelines have so little written about it?

Before a set of best practices can be explored, a better understanding of the clinical grading system must be undertaken. This study evaluated the effectiveness of the clinical grading system at SCO as a means of grading and teaching, how it is being used by faculty and students, and whether it meets the needs of program’s stakeholders, and it helped to determine potential improvements that can be made to it.

This chapter presents a literature review on the theories of pragmatism and experiential learning. Importantly, the connection to how these two theories relate to the topic of clinical grading and why they were specifically chosen as lenses for this study will be discussed. The chapter will also include a review of the literature from other professions on clinical grading, the types of grading systems that exist, and the pros/cons inherent in each. Through these explorations the lack of clinical grading literature concerning best, or any practices, in clinical grading in optometry highlights a glaring need and becomes the driving force behind this study.

Pragmatism

Pragmatism is a word used to describe a particular way of addressing and resolving issues. For some, it has a positive connotation (being practical, getting things done, being able to compromise), while for others, it is negative (lack of principles, sloppy thinking; Ormerod,
Pragmatism as a philosophy is based classically on the work of Charles Pierce, William James, and John Dewey historically and, more recently, on the work of John Murphy and Richard Rorty (Creswell, 2014; Ormerod, 2006). Pierce developed his theories in opposition to idealism; pragmatism “provided a road to objective and impersonal standards” (Ormerod, 2006, p. 24). James (1907) provided the theory with personal and subjective meaning. Dewey (1938) advocated that inquiry is a process whose procedures and norms should be evaluated and revised based on future experience. Richard Rorty, considered a neopragmatist, contended that pragmatism does not require a specific philosophical viewpoint and is an “experience-centered philosophy that emphasizes change” (Savin-Baden & Major, 2013).

For pragmatists, how they view the world comes from actions, situations, and consequences. They emphasize choosing explanations that can produce the desired outcomes and agree with positivists/post-positivists that there exists an external world independent of people’s minds (Pansiri, 2005). In pragmatism, “both knowledge and social reality are based on beliefs and habits which are socially constructed by the process of institutionalization, legitimation, and socialization” (Pansiri, 2005, p. 197).

In choosing a theory upon which to base this research, it is the pragmatist view that it is impossible to pursue a line of study without understanding its history and how development to the current situation took place (Ormerod, 2014). However, in Dewey’s definition, experience “is connected to the future because ‘we live forward’” (Elkjaer, 2009, p. 80). Pragmatists deny the idea that truth is a set thing or idea and can be determined. They relate the concept of truth with that of good or bad; it is based on experiences, beliefs, and interests (Pansiri, 2005).

Dewey is often discussed in the educational world as the father of experiential education. He insisted that “philosophy must be practically useful in people’s lives rather than a purely
intellectual endeavor” (Elkjaer, 2009, p. 77). Dewey’s view of experience concerned living and
the connection or give and take between the subject and the world. The subject is part of the
world and not in a bubble floating outside of it as a spectator. Through this interaction,
challenges arise that must be resolved via inquiry in an attempt to define the experience
cognitively and create meaning. For this to occur, it may be necessary to use similar past
experiences and to experiment with different ways to attribute meaning to situations. Through
that process, the emotional experience transforms into a cognitive and communicative
experience. Through this process, the emotional experience becomes reflective and a learning
experience and may become knowledge. The learner then uses this new knowledge in the next
inquiry situation. Dewey writes the following:

To “learn from experience” is to make a backward and forward connection between what
we do to things and what we enjoy or suffer from things in consequence. Under such
conditions, doing becomes trying; an experiment with the world to find out what it is like;
the undergoing becomes instruction – discovering the connection of things. Two
conclusions important for education follow. (1) Experience is primarily an active-passive
affair; it is not primarily cognitive. (2) The measure of the value of an experience lies in
the perception of relationships or continuities to which it leads up. It includes cognition in
the degree in which it is cumulative or amounts to something or has meaning. (Dewey,
1916 [1980], p. 147)

Pragmatists subscribe to the concept that education should be “learning by doing.”
Education should be based in experience and preparation for the future. Miettinen (2000)
discusses that Dewey makes the distinction between primary and secondary experience. Primary
experience is the interaction with the environment, physically and socially. Secondary
experience relates to reflection. Reflection can be due to positive or negative primary experiences (Morgan, 2014).

Education is helpful in that a teacher can provide those opportunities for connections by not only introducing concepts and theories at the time of the clinical encounter but also through the clinical grading process and feedback. The tricky aspect of the grading experience, like any experience, is that there are both good and bad experiences. While good experiences can lead to good learning habits, bad or even experiences that provide little opportunity for growth can do the exact opposite. If the clinical grading process is not used to the fullest extent and is not meaningful to the students, it may actually be doing more harm than good. In investigating the concept of clinical grading, this is a crucial question to examine.

Although I used pragmatism as the theoretical foundation of this study, the pragmatic qualitative research approach does not require espousal to any one philosophy (Morgan, 2014). Those choosing this approach may adopt a range of philosophies including but not limited to pragmatism and grounded theory. There is also no one way to perform research within this method. In this regard, researchers are free to decide what and how to research based on their intended goals. They are also free to pick the methods, techniques, and procedures that best meet the needs of their study (Morgan, 2014).

The pragmatic qualitative research approach can be used to study various phenomena, which suited my needs through this research and perhaps subsequent studies in this area. In this study, I strived to examine individuals (those doing the grading), structures (the grading scaffolding), and processes (how we accomplish the grading). Using this approach allowed for data collection in a natural environment and offered various data collection options, including interviews, focus groups, observation, and document review. Most importantly, this research
type is practical and can be related to the specific practice, clinical grading, that I studied (Creswell, 2014; Fossey et al., 2002).

Pragmatism and the views of Dewey provide the basis for education moving from the concept of the student as an empty vessel waiting to be filled with knowledge from the teacher to one in which the student is actively engaged in discovery. This can also be seen as moving from passive learning to active learning (Ormerod, 2006). As alluded to previously, Dewey joined the ideas of thinking (cognitive) and doing (kinesthetic) as part of the learning process. Being able to think and to apply knowledge is at the core of experiential learning theory, which will be covered next.

**Experiential Learning**

There is an old saying that states, “Give a man a fish and you feed him for a day. Teach a man to fish and you feed him for a lifetime.” Left unsaid in that quote is the aspect of learning. It hints at the concept of learning by doing but does it in a subtle manner. The following three quotes go one step further and make that crucial connection. Confucius (“Confucius quotes,” n.d.) stated, “I hear and I forget. I see and I remember. I do and I understand.” Xunzi (“Xunzi quotes,” n.d.), a Confucian philosopher, stated, “Tell me and I forget. Teach me and I remember. Involve me and I learn.” A present-day representation of those sentiments is found in the words not of a philosopher, but of a businessman, Sir Richard Branson (“Richard Branson quotes,” n.d.): “The best way of learning about anything is by doing.” The basic premise is that we learn by doing, by experimenting, and by experiencing. That is essentially the heart of the theory of experiential learning, explored further below.
History/Key Characteristics

The basis for the concept of experiential learning theory originates in the work of educator John Dewey. Dewey (1938) espoused the concept that learning occurs during and from experience. Dewey’s work became the foundation for what is now known as progressive education. According to Dewey (1938), not all experiences produce learning; some may miseducate, leading to less-than-meaningful experiences where learning or growth does not occur. For learning to occur, the learner must connect with the experience, and the experience must be genuine (Murray, 2018). Dewey (1938) identified several essential aspects of how experiential learning can take place.

- There must be a relationship between education and experience.
- Experiences must demonstrate continuity and interaction. Learning experiences cannot just happen but must be planned with meaning. The experiences allow the learner to build on and connect what they learned from those experiences to future outcomes.
- The environment and the learner’s interaction with that environment have an impact or influence on the experience. The environment should be conducive and comfortable for learning to occur.
- Experiences are personal and individualized to the learner. Past experiences guide and impact the connections made, influencing the learning process.

Drawing upon the works of Dewey as well as Piaget and Lewin, Kolb (1984) defined experiential learning as the process whereby knowledge is created through the transformation of experience. Kolb and Kolb (2005, 2011) proposed six characteristics of experiential learning.
• *Learning should be conceived as a process and not based on outcomes.* The main focus should be on the learning process, which includes feedback on the effectiveness of students’ learning efforts.

• *All learning is relearning.* Learning makes possible the drawing out of students’ beliefs, knowledge, and ideas so that they can be examined, tested, challenged, and integrated with new ideas and concepts, which are then more refined.

• *Learning requires the resolution of conflicts between diametrically opposed modes of adaptation to the world.* It is the moving back and forth between different ideas and concepts and reflection on all of the above that drives the learning process.

• *Learning is a holistic process of adaptation to the world.* Learning involves the entire person’s integrated function, including thinking, feeling, perceiving, and behaving. Also included are “other models of adaptation from the scientific method to problem solving, decision making, and creativity” (Kolb & Kolb, 2011, p. 44).

• *Learning results from the synergistic transactions between the person and the environment.* Long-term and stable patterns of learning develop from a consistent relationship between the learner and their environment. Choices and decisions made in a given situation are based on past lived experiences and events.

• *Learning is the process of creating knowledge.* Experiential learning theory is entrenched in the constructivist concept that “social knowledge is created and recreated in the personal knowledge of the learner” (Kolb & Kolb, 2011, p. 44). In contrast to the transmission model, in which knowledge is transferred into the empty vessel known as the learner, the constructivist model sees knowledge as assembled as the individual tries to make sense of their experiences.
The Kolb learning model (see Figure 3) consists of four stages through which learners progress during the learning process: concrete experience, reflective observation, abstract conceptualization, and active experimentation (Tanaka & Son, 2019).

![Figure 3. Kolb’s Experiential Learning Theory (“Experiential Learning,” n.d.)](image)

Learning is effective when there is a progression by the learner through these four stages. The model is more complicated than a circular cycle, though. It is composed of two modes of grasping experiences (concrete experience and abstract conceptualization) that are oppositional and two modes of transforming experiences (reflective observation and active experimentation) that are also oppositional. The four learning modes are defined as follows:

- **Concrete experience**: The ability to be open and willing to involve oneself in new experiences

- **Abstract conceptualization**: The ability to create concepts that integrate their observations with previous knowledge and experiences and logically sound theories
• **Reflective observation**: The ability to reflect on what was observed during the new experience.

• **Active experimentation**: The ability to try out or use these theories that they have learned to make decisions and solve problems.

The learning cycle begins with the individual having concrete experience, which is the basis for observation and reflection. The reflections are integrated into abstract concepts from which implications can be drawn and actively tested and experimented on by future experience. Zull (2002) provided a connection between Kolb’s cycle and neurology:

Concrete experiences come through the sensory cortex, reflective observation involves the integrative cortex at the back, creating new abstract concepts occurs in the frontal integrative cortex, and active testing involves the motor brain. In other words, the learning cycle arises from the structure of the brain. (Zull, 2002, pp. 18-19)

While it may seem on the surface that everyone enters the cycle at the same stage, this is not the case. Each learner has a natural preference for what learning mode they choose based on their heredity, current situation, and past experiences. These learning styles are accommodating, diverging, assimilating, and converging (Kolb, 2005). Each learning style draws from two adjacent learning abilities; there is almost a tug of war as the learner transitions from one to another only to get friction as they do so.

As individuals mature, Kolb (2005) explained that they tend to reconcile and integrate the four learning modes’ conflicts. He puts forth three levels of development that demonstrates this progression leading to deep learning:

• Acquisition: Birth to adolescence

• Specialization: Schooling, early work, and personal experience of adulthood
Integration: Mid-career to later life

Relevance of Experiential Learning to Clinical Grading

Experiential learning in an optometric curriculum occurs in different ways throughout the four-year program. In viewing these three stages concerning the clinical optometric experience, for the average student, the first stage of acquisition could be considered the first year and perhaps the start of the second year where knowledge is being passed on from teacher to student, filling up the student like an empty vessel. In these years, the students attend classes and labs and just start to get into clinical situations on a limited basis. The second stage would be the middle to end of the second year, the third year, and perhaps the start of the fourth, where didactic and lab experiences are finally being tested out in clinical experiences. In this stage, the experiences are kept as general as possible; much of the specialty care is relegated to the final stage. The final stage, related to optometry school, is be the fourth year, but in reality, the integration process never truly ends in a profession that demands life-long learning. These three stages are fluid and not absolute. Above-average students will hit the integration phase before poorer performing students who might be stuck in acquisition.

The four stages of the Kolb experiential learning cycle concerning the clinical optometric learning experience highlights the following connections. Students are assigned a patient while they are in the clinic, and they perform an examination, which includes a history and a physical examination. The student works with the faculty member to develop a differential diagnosis and a plan. Treatment is initiated, be it glasses, medication, therapy, a minor surgical procedure, or referral. This is Kolb’s concrete experience aspect of the learning cycle which the students encounter through patient care.
Both during the examination and after it has been completed, the student attempts to make sense of what has happened and reflects on the encounter. This reflection begins with rethinking the case as they complete the examination record. By considering the choices made in test selection, how they approached and handled the encounter, and treatment provided, the student begins self-reflection on the concrete experience that they just completed.

Two aspects of the faculty/student relationship facilitate the self-reflection process. During and after the clinical experience, there is often verbal discussion between the faculty member and the student. This is an opportunity for case discussion and also a time for the faculty member to guide the student and to critique their performance. The second opportunity, and the topic of this dissertation, is the formal clinical grading. Clinical grading, which includes written and numerical feedback, should be considered part of the reflective component. Each clinical encounter is graded, allowing the faculty member to guide the student in the learning process for that patient, and provide feedback, as well as suggestions for future learning. The faculty member, of course, uses it in this manner, offering productive feedback to enhance reflection, and the student must be open to hearing the feedback and using it as part of their reflection.

The student builds on the reflection to improve in some way. This abstract conceptualization can take place as a building of knowledge by researching a topic or practicing/enhancing a skill. The student self-directs their learning, chooses to practice a given technique, or learns more about a given topic or condition regarding the previous patient encounter.

The faculty member’s feedback and the self-directed learning that it generates hopefully helps the student integrate and actively experiment with their new knowledge or approach and
test it in future patient experiences. This experience will then, in turn, lead to the process of starting anew.

In discussing the concept of assessment in experiential learning theory, Kolb (2000) stated, “it views much assessment in education as problematic because it is overly focused on declarative content knowledge rather than learning skills; and it is not holistic, focused primarily on information and cognitive skills while neglecting interpersonal and action skills” (p. 307). Despite this seemingly negative view of assessment related to experiential learning, it is necessary to document learning outcomes and provide fuel for the reflective fire. As noted by Coyle, Boruch, & Turner (1991), “Students will learn more if instruction and assessment are integrally related. Providing students with information about particular qualities of their work and what they can do to improve it is crucial for maximizing learning” (p. 258). Feedback, combined with the opportunity to apply it, helps students not only to learn content but also to enhance critical thinking (Ash & Clayton, 2009).

**Strengths and Weaknesses**

Kolb’s (1984) theory conceptualized experiential learning as a sequential paradigm in which one has to move from stage to stage, but this has been criticized as too simplistic and free of context, unimpeded by the power dynamics present (Merriam & Bierema, 2014). Criticisms related to apprenticeship models and experiential learning are that they focus too narrowly on building individually-based, discipline-specific knowledge, operational competence and outcomes, and neglect the idea that professional learning and practice involves adaptive, sociocultural and heuristic or interpretive processes. In other words, experiential learning may not be enough to meet the need for health professionals to be flexible, aware and understanding of the alternative perspectives or where other people (patients, other health
professionals, hospital administrators, and others) are coming from. (Delany & Watkin, 2009, p. 412)

Hickcox (1991) provided support for the experiential learning theory in a review of 81 qualitative studies that focused on applying the theories modeling and applying the learning style in accounting and business education, helping and medical professions, and postsecondary and teacher education. Almost two-thirds of the studies (61.7%) showed support, 22.2% did not, and 16.1% provided mixed results. Iliff (1994) performed a meta-analysis of 101 learning style inventory (LSI) studies culled from articles and dissertations. Forty-nine showed strong support for LSI, 12 showed no support, and 40 showed mixed results. Experiential learning theory, judged by the standards of construct validity, “has been widely accepted as a useful framework for learning-centered educational innovation, including instructional design, curriculum development, and life-long learning” (Kolb & Kolb, 2011, p. 196).

**Impact of Experiential Learning Theory on This Study**

Looking more closely at the reflection component of the process, raises the question whether clinical grading offers the opportunity for reflection to take place at a deep enough level. While lack of reflection would represent surface learning and critical reflection would represent deep learning, there is a spectrum between them. This spectrum occurs for several reasons.

The time at which the reflection occurs may not be appropriate for the student to integrate the knowledge best (Allodola, 2014). For example, some students get stuck in data-collection mode and do not have the opportunity to understand the data that they are collecting. They might be “seeing the trees but missing the forest.” The student also may have minimal previous experience in general, or in a particular specialty, limiting their ability to draw upon past experiences to integrate new knowledge and alter their behavior. Reflection should be tailored to
the individual’s developmental stage in learning to ensure positive experiential learning. For example, discussing ways to be more efficient is more appropriate with a more experienced student, while feedback on exam techniques may be more suitable for the novice.

Another barrier to experiential learning is a lack of motivation or desire (Murray, 2014). Given that there are numerous specialty areas with the profession of optometry, not all students and clinicians have interest in providing care for all patients. For example, clinicians who treat pediatric patients often have less desire to treat those with complex ocular diseases requiring significant medications and testing. As self-directed learning is crucial to the experiential learning process, lack of motivation and desire to learn a given topic or aspect of care can be a limiting factor.

Another issue relates to time (Murray, 2018). In the clinical setting, patients can present at a rapid pace. Students may finish one patient only to have another waiting in the wings or have two patients going on simultaneously. Reflection, an important aspect of the experiential learning cycle may be delayed in many cases since as the student focuses not on a previous patient but the one that is currently in exam room. The student and faculty member also may not get time to discuss the case on that given day in great detail, hampering the reflective process.

Completion of the grade on the part of the faculty staff doctor is often delayed. Depending on the faculty member’s workload and schedule, feedback in written form is often not given at least until the next day and can be as long as several weeks later. The quality of the feedback given suffers as the faculty member does not recall specific performance, impacting the depth of the reflection. The student may not recall the patient, affecting their ability to reflect and, rendering the feedback that they have gotten less meaningful and more challenging to use during the learning process.
Another major issue with reflection in the clinical grading process relates to the type of feedback given. Comments may be surface level and remark on a given technique or diagnosis but not provide the student enough direction from which to reflect and grow. Does the feedback offer the opportunity for positive reflection even if the performance was poor? Does the feedback, in contrast, offer anything for the superior student to continue their growth?

Tying this back to Dewey’s concept that experience can be both good and bad, clinical grading is just one way educators can influence that experience. Viewing clinical grading through the experiential learning lens allows for the investigation of whether the grading process actually allows for proper self-reflection. It is through this evaluation study that the question was brought to students, faculty, and administrators.

**Optometric Education in the United States**

The study of optometry is a four-year curriculum that takes place after completing a minimum of three years of undergraduate study and the required prerequisites. The program culminates in the awarding of a Doctor of Optometry degree (Kowarski, 2021). There are currently 25 colleges of optometry accredited by the Accreditation Council on Optometric Education (ACOE; “ASCO,” n.d.). The curriculum consists of didactic coursework in the form of classroom and laboratory work as well as clinical experiences. The didactic component includes classes and labs on subjects including ocular and systemic anatomy, ocular and systemic disease/pharmacology, and pediatrics, with the vast majority of courses taught by terminally degreed individuals. The clinical experiences are fostered under the guidance of faculty members who are licensed Doctors of Optometry. In the fourth year, the emphasis shifts from completely didactic to entirely clinical. Clinical experiences occur both internally at college-owned facilities and externally at private offices and hospitals and government-run facilities such as VA
hospitals and military bases. On average, depending on the college, a student will see 1,500 to 3,000 patients by the time they graduate. There are also 278 one-year residency programs with 496 positions available (“FAQ,” n.d.).

**Literature Review: Clinical Grading**

Even though there is a lack of literature related to clinical grading in the field of optometry, other fields such as nursing, medicine, and physical therapy may lend insight to understand better how they address clinical grading. Common methods used in grading systems include the use of global rating scales, written comments, and portfolios. While there is no one-size-fits-all approach to clinical grading, this literature review discusses these methods and their advantages and disadvantages.

Student assessment in clinical courses occurs in several categories, including communication, demonstration of skills, documentation, critical reasoning and understanding, and professionalism (Oermann et al., 2009). Clinical reasoning is multifactorial and intricate. It is defined as “a collaborative and reflective process that involves content-specific knowledge, engagement of the patient and family in understanding clinical problems, and incorporation of the critical contextual factors” (Furze et al., 2015, p. 34). Grading is not to be confused with assessment; however, the two complement each other as a judgment on competence occurs through various assessment methods. Labeling an individual as competent simply indicates that they are at a specific, and perhaps basic, level, but not that they exceed that level (McCarthy & Murphy, 2008). The training students of to be medical professionals should, in theory, be striving to pass through and exceed competence (Hanson et al., 2013). The use of the term competence in that vein appears to be limiting in attempting proper assessment.
Global Rating Scales

There are various ways assessment is accomplished, including observation, rating scales, written comments, verbal feedback, and formal examination. Programs typically choose one method or a combination. Global rating scales are the most common instrument that faculty in many professions use in evaluating students (Al-Mahroos, 2009). Rating scales can be considered formative or summative evaluation methods depending upon how they are used (Oermann et al., 2009). SCO’s use of the rating scale would be considered formative. It is employed to educate students, to give feedback on strengths and weaknesses, and to allow students to change their behavior and learn from experiences in order to prepare them for formal practice. Since New England College of Optometry grades at the end of the term and not on a daily or weekly basis, it uses a summative approach. A summative assessment is considered more as a method to assess meeting competence levels.

Global rating scales have several advantages over other formats, including ease of use by faculty and distribution to both the faculty and students, ease of scoring and data analysis, ability to use them with a large number of students, flexibility, unobtrusive nature, and easy to decipher feedback (Al-Mahroos, 2009). The downsides of the rating scales are questions of validity and reliability (Al-Mahroos, 2009). Confusing or imprecise categories or questions, variability in faculty approach and clinical environments, the ability of faculty to wear both the hat of teacher and evaluator, and the unwillingness of faculty to provide open and honest feedback and fail students are just some of the issues (Gallant et al., 2006).

There are various rating scales that differ in the number of questions, categories of graded topics, and spread of the scale. These differences can be based on profession and individual program needs. For example, in physical therapy, there are two main grading instruments, the
Mastery and Assessment of Clinical Skills (Blue MACS) and Physical Therapist Clinical Performance Instrument (CPI; Hrachovy et al., 2000; Task Force, 2002). The Blue MACS was first developed in 1977 with input from clinicians and is now in its fifth edition. It consists of 38 skills and 12 situational skills that can be used depending upon the clinical environment. Each skill has a set of guidelines or key indicators of what is being evaluated in that category. Students rate their performance, and then faculty do so as well. The scaling is 1 to 7 for each category. The comparison of the student and faculty scaling provides an opportunity for discussion between the two parties and a means of assessing precisely what skills are at an acceptable level and what skills need further development. This Blue MACS is a mixture of formative and summative evaluation (Hrachovy et al., 2000).

The CPI was developed by the American Physical Therapy Association in 1997 (Task Force, 2002). Developed by educators, it was designed to provide uniformity to the process. It evaluates 24 criteria with a visual analog scale. The scale ends are “novice clinical performance” and “entry-level performance,” but there is no way to indicate scale for higher performance levels. There are opportunities for written comments if there are faculty or student concerns (English et al., 2004; Task Force, 2002). While this scale creates uniformity on some level, how each program uses it to determine course grades varies (English et al., 2004). This concern has been voiced in the literature (Task Force, 2002). English et al. (2004) evaluated the use of the CPI in clinical grading. Out of the 134 responding programs, 61% (82) converted the 100mm scale to a percentage, 12.7% (17) used quartiles, and 17.9% used another method. Comments generated on the CPI were used by 53% of programs to determine the grade. Straub and Campbell (2003) examined the ability of faculty or instructors to use the 100mm scale to delineate and to rate student performance, reporting that “the inability of raters to clearly
discriminate among 100 possible gradations of clinical performance may not result in more valid and reliable information than was obtained through the use of other tools? (p. 37). Compared to the Blue MACS, which encourages frequent use and evaluation of student performance, the CPI is more summative since it is used once at the midterm and again for final evaluation (Hrachovy et al., 2000).

While physical therapy has a few options for wide-spread clinical assessment, nursing, similar to optometry, is program-specific. It is beyond the scope of this chapter to discuss the various scales since there are so many, but one such scale was developed by Krichbaum et al. (1994) at the University of Minnesota. The authors identified 10 clinical learning descriptors and used the Bondy (1983) rating scale to measure each one. The Bondy scale describes five levels, including dependent, provisional, assisted, supervised, and independent. Krischbaum et al. (1994) developed performance standards or definitions for each of the Bondy rating scales to aid clinical graders in determining the proper level. The inclusion of the additional standards is helpful for graders as it is a challenge to decipher the grading scale’s original intent when it was created. The evaluation tool is summative since it is completed at the end of each course.

**Global Rating Scales in Optometry.** In optometry, there seems to be a wide disparity of how grading occurs and on what it is based. The grading system at SCO is offered for consideration. A grade is submitted for each patient encounter when on campus. There are two components to each grade. The first component consists of six categories in which a Likert scale of 1 to 3 is used to indicate performance. These categories include Identify Patient Needs, Technical Skills, Data Interpretation, Management of Patient Needs, Communication Skill, and Documentation. A score of 2 would be an expected performance, while 1 is below and 3 is above expected. The faculty member also indicates whether the student was professional during the
examination in a yes/no format. The second aspect of the grade consists of two text boxes in which the faculty member can speak directly to the student, letting them know what they have done well and what needs improvement. This grade report is seen by the student when they log into the grading program. The Likert scale scores in each category are translated into a number grade and summed to give an overall number grade for the encounter. Based on the year in school, each of the categories’ weights differ in the final grade determination. In the third-year clinical experience, one grade is issued for all clinical experiences, but in the fourth year, a clinical grade is given for each course corresponding to care in a clinical service.

**Issues with Global Rating Scales.** As there are always disadvantages to go along with the advantages, there are indeed barriers or drawbacks in using global rating scales in clinical grading systems. While selecting a number on a scale is quick and easy for the grader, how that number is determined, what it means to the grader and student, and how it is used by both parties shows wide variation. As there is a gap in the literature on the topic of clinical grading in the field of optometry, we turn to nursing education literature for an in-depth discussion. Orchard (1992) and Wood (1982) highlighted the issues in their articles that mirror the issues that I have personally encountered and seen firsthand. Orchard (1992) identified six factors that had the potential to interfere with the authenticity of grading of student nurse performance:

- **Variables or categories/descriptors used in the assessment tool.** Every system has different categories of performance assessed and what is included in the various categories differs.

- **The complexity of clinical performance and subjectivity of the appraisals.** Students see patients of different levels of complexity and work with different graders. Despite the desire for objectivity, the systems are based on subjective input.
• Evaluators’ expectations of students’ professional socialization

• Evaluators’ ability or expertise in evaluating the performance. There are faculty of all levels of teaching ability in all professional programs. Some are good at identifying strengths and weakness, some are not. Depending on the number of years seeing patients personally, they may or may not have experience on which to draw conclusions about student performance.

• Reliability of the grading process (inter- and intra-reliability)

• Personal values of the evaluators

Wood (1982), also discussing the evaluation of student nurse performance, highlighted some of the current problems:

• Clinical evaluation is subjective; interpretation of the grading scale differs between individuals and courses.

• The clinical situation (faculty, patients, and clinical environment) changes regularly, creating an inherent challenge for all involved.

• Observation is not 1:1 and can be as high as 8:1. The ability of an individual grader to remember and assess performance differs based on how many students are managed at one time.

• The evaluation takes place while the student is learning; evaluation and learning should be separate processes. If there is not time for the student to reflect on their performance prior to the evaluation, this may disrupt the experiential learning cycle.

Faculty struggles with grading scales are indeed a considerable component of the issue. While the intention of the scale, regardless of the gradations, is to differentiate performance, graders have trouble doing so. The lack of clarity in some scales as to what encompasses each
level, as well as improper orientation in grading in general and using the assessment tool in particular are confounding factors that need to be addressed (Helminen et al., 2016). The language used to delineate the levels may, in fact, be confusing and lack a detailed description. This confusion leaves the grader having to interpret, based on their own experiences, the grading scale. Heaslip and Scammell (2012) evaluated grading in nursing by surveying 112 mentors (graders). They found that 64.93% (73) of mentors expressed confidence in grading, but 67.9% (76) requested further guidance on grading. The authors reported that 71.4% (80) used the level descriptors. Out of that group of 80 participants, 79 found them to be helpful. While a majority expressed confidence, a similar percentage of graders in the study asked for more guidance; there is always room for process improvement.

The ever-changing environment of the clinical experience creates a significant challenge for grading students. This refers to the service in which the student sees patients, the complexity of the patients, and the faculty member to whom they present or by whom they are being graded. Using optometry as an example, a primary care patient, in many cases, will present with more common issues, and follow up care, if needed, will be performed at specialty clinics. A given student’s performance may be acceptable for the primary care service but not the specialty service. The same faculty may be in both service types to add another wrinkle, grading the same students. Whether the faculty member adjusts their expectations and their grading based on those factors—and whether they should do so—is unanswered.

Since grading is a subjective process, those doing the grading need to limit their own bias and judge based on the performance at hand. They have to limit consideration of past experiences not germane to the current grading experience as much as possible, but this is challenging to accomplish. There are also issues with faculty related to levels of expectations.
Some graders are notoriously more lenient or stricter than others. Whereas, in a standardized examination, there are set guidelines for given procedures, the same is not true in the clinic. What one grader deems as below-level, another may consider as being at an expected level, and a third might consider as above expected.

The evaluator’s judgment of student performance may not match the assessment; there is an unwillingness to report poor performance and to fail students in the clinical setting (Dudek et al., 2005). In a study by the Association of American Medical Colleges, 74.5% of faculty at 10 schools rated unwillingness to record negative evaluations as a problem (Tonesk & Buchanan, 1987). Dudek et al. (2005) and Luhanga et al. (2008) highlighted some of the barriers to assigning failing grades in their studies from the medical and nursing fields, respectively. Not surprisingly, there was a significant overlap in the findings. Barriers included lack of documentation to support failure on the part of the administrators, lack of understanding on the part of the graders on what to document, fear of the appeals process, lack of a remediation process, personal feelings of guilt, not wanting to cause the student time or money, and pressure to keep students in the programs. Both papers highlighted the need for further study in order to comprehend the barriers better as well as how best to overcome them.

The validity and reliability of grading scales are of concern (Hanson et al., 2013). There are so many rating scales in use throughout the various professions, many of which have not been adequately evaluated. If grades, residency placement, employment, and even graduating from the professional program rely on clinical grading, does it not behoove programs to evaluate their chosen assessment method? One study involving the evaluation of performance by 31 nurse educators of the same patient encounter via video shines a spotlight on the issue. Hayter (1973) showed versions of the same examination by the student: one demonstrated above-average skills,
one average but satisfactory, and in a third, mistakes were made. A grading scale of A to F was employed, and comments were requested from the educators. Only a 44% agreement was shown between the instructors and the researcher. For example, not one A was issued for the above-average group, but three Ds and an F were given. Keep in mind that this study was in a controlled environment involving a staged patient; if there is that much variability in that situation, imagine the issues and questions that can arise with real patients.

With all of the various tools available and the associated issues with rating scales globally as well as individual scales, what do clinicians actually observe related to clinical performance? As a clinician who grades students, I am generally not in the room when students are taking the history, performing a significant number of skills, and communicating with the patient or their families during a patient encounter. If that is so, how can I possibly be asked to grade them on those behaviors? Pulito et al. (2006), in a study of 13 medical school faculty members, looked at the results of an 11-section questionnaire. The questionnaire asked what was specifically observed that enabled performance evaluation, do the faculty make inferences from what they observe, what their judgment is based on, how important the set of characteristics actually were, and whether students should be evaluated on those given factors. Separately, written comments were reviewed for 120 third-year medical students, classified into the 11 performance characteristics about which the faculty members were questioned. A delineation of observable and non-observable characteristics was created. Professionalism/dependability, medical/surgical knowledge, clinical reasoning, oral presentation, and write-ups were observable or usually observable, while interprofessional skills with patients, technical skills, history/physical examination skills, basic clinical skills, and ordering of labs were not directly observable. Both of those categories correlated with the number of comments made on the student evaluations; the
graders commented on what they could observe and did not comment on what they did not. Of the 1,056 comments recorded, 412 were regarding professionalism/dependability, and not one was categorized as history/physical examination skills, surgical technical skills, or ordering of labs. This raises the question: How can faculty possibly grade what they do not observe? That question was also answered in the study; they infer the grades for other performances. Inferring performance related to medicine can have life-or-death consequences. While the authors stop short of giving suggestions at remediation, the study highlights some of the inherent assessment challenges previously alluded to in this paper.

**Written Comments**

Assessment can also be accomplished through written comments emphasizing a qualitative versus quantitative approach. Some assessment tools use only written comments; others use a combination of written comments and scales, as is the case with SCO. It is questionable whether the inclusion of written comments enhances or improves the assessment process. Feedback should relate to the performance and not involve the student’s character. It should be detailed and clear and communicate performance versus expected standards. Praise or criticism should not be given on a personal level, and comparison to other students avoided (Canavan et al., 2010). Lye et al. (2001) and Canavan et al. (2010) evaluated written comments in two medical programs. Out of 1,017 comments on 227 evaluations, Lye et al. (2001) found that 26% and 25% focused on the learner and personal characteristics, respectively. Clinical skills comments made up 31% of comments, but this was spread over seven sub-categories, including history, physical examination, and management plan. The single most common comment was “pleasant/pleasure to work with” (p. 130). The authors astutely point out that while this characteristic is necessary for future clinicians, it is far from the most important in training.
Canavan et al. (2010) coded 1019 comments from 282 surveys. Non-behavioral/global assessment type comments were the most common. Examples included comments such as “fantastic guy” or “great clinician” or noted traits, attitudes, or motivations. Comments on behavior occurred on about the same number of surveys, but general behaviors were commented on in more significant numbers than specific behaviors. Positive feedback occurred nine times greater than negative comments, and only 65 of the 1019 comments offered strategies for improvement.

**Portfolio**

Tousignant et al. (2012) championed using a portfolio to assess clinical competencies, to assist in the learning process, and to develop professionalism. The methods selected encompassed summative and formative assessment in pre-clinical and clinical settings. These methods included the Objective Structured Clinical Examination, a yes/no checklist completed by the supervisors during a patient examination in a controlled environment like the lab, the mini-clinical evaluation that allows assessment during patient encounters and a student completed learning journal, performance reviews at the mid-point and end of the clinical rotation, a clinical competency log indicating the number of times specific skills were performed and the skill level attained, and patient feedback.

Using a sample of nine supervisors and 10 students, the portfolio’s acceptability and validity were rated as good by both the students and faculty. The individual parts were perceived as acceptable and good, and comments were positive. The learning journal, however, was reported by the students as being too long and repetitive. Logistics for gathering patient feedback needed improvement. The assigned grades pertaining to the quality of learning were on the higher side, but this was acceptable as the learning journals were honest, reflective, and
constructive. The authors acknowledge that longer-duration courses and larger class sizes would create a challenge for this approach. They offer the ability to track performance throughout the entire academic career as a positive and postulate that electronic portfolios may increase efficiency.

**Summary**

This chapter discussed the theories of pragmatism and experiential learning as the lenses through which I performed this study. Both theories discuss the concept of experience and learning by doing, which describes the student’s clinical experiences including use of the clinical grading system at SCO. Clinical reasoning is multifactorial and intricate. Programs use global rating Likert grading scales which are easy to use, to score, and to analyze. There are questions concerning validity and reliability however. Some programs use written comments, and others use a combination of written and global rating scales. Written comments emphasize a qualitative versus a quantitative approach. It is questionable whether the inclusion of written comments enhances or improves the assessment process. Portfolios are yet another grading system employed.

Best practices have not been developed in optometric programs, and on the whole, there is little uniformity. Even when a system is created, questions of validity and reliability arise. In many cases, how the grading protocol is being used differs from the original intent. In searching the optometric literature related to clinical grading, there is not only a huge gap, but research is absent. In other health professions, including dentistry, physical therapy, medicine, and nursing, the topic has been studied to different degrees, but most continue not to have best practices on which to build clinical grading paradigms. As information is absent, the topic is ripe for an investigation to assemble a best-practice guideline. Before a set of best practices can be
conceived for the optometric profession, understanding how one program, SCO, has designed and used their grading system and evaluating it, are crucial first steps on which to build.
Chapter 3: Methodology

While grading in didactic programs is well-defined, including quizzes, tests, and papers, grading in a clinically oriented course is not. In optometry, a medically oriented program of study, about 50% of educational time is related to clinical learning. While there are guidelines from the Accreditation Council on Optometric Education (ACOE), the national accrediting organization for colleges of optometry, as to what general factors should be evaluated in a clinical grading process or system, every optometric program is left to decide exactly how their system should look and how grading takes place. Some programs grade a student on every patient encounter, while others grade on a daily or weekly basis. Factors to consider in grading or evaluating students include, but are not limited to, technical skill, communication, and professionalism. Feedback is provided back to the student in a variety of formats, the most common being Likert scales or free-text format. The summation of the clinical grades produced are used to determine if the student passes or fails the given clinically based course.

There is a lack of best practice in optometry as to how to set up a clinical grading system. Taking it a step further, I am Chief of the Vision Therapy and Rehabilitation Service at Southern College of Optometry (SCO). I found that even when looking at just one college of optometry’s clinical grading system, it became clear that every evaluator or faculty member used the system differently based on their understanding of it and their inherent subjectivity. The students also used the system differently and likely have varying benefits. This study evaluated the effectiveness of the clinical grading system at SCO as a means of grading and teaching, explored how it was being used by administration, faculty, and students, assessed whether it met the needs of program’s stakeholders, and offers potential improvements.
This chapter describes the study’s research methodology and provides discussion in the following areas: research questions, research context, research site, research approach, data collection/participant selection methods, data analysis, trustworthiness of the study, researcher positionality, and a chapter summary.

Research Questions

In this naturalistic (Lincoln & Guba, 1985) and formative evaluation study drawing on pragmatic theory (Dewey, 1938) and experiential learning (Kolb, 1985), I evaluated the effectiveness of the clinical grading system at SCO by interviewing three administrators and conducting focus groups with both students and faculty members. I focused on current clinical grading practices at SCO. The research questions that guided this study include the following:

- How effective is the current clinical grading system as a method of grading and teaching at the Southern College of Optometry (SCO)?
  - How does the clinical grading system at SCO shape student learning and performance?
  - How does the current system used for clinical grading at SCO meet the Accreditation Council on Optometric Education (ACOE), administration, faculty, and students’ needs?

Theoretical/Conceptual Framework

Pragmatism

Pragmatism is a word used to describe a particular way of addressing and resolving issues. Pragmatists believe, “that no truth is absolute and permanent as it is ever changing from time to time and place to place and from circumstance to circumstance” (Rai & Lama, 2020, p. 1844). The pragmatist view is that it is impossible to pursue a line of study without
understanding its history and how development to the current situation took place (Essays UK, 2018). Pragmatists deny the idea that truth is a set thing or idea and can be determined. They relate the concept of truth with that of good or bad; it is based on experiences, beliefs, and interests (Pansiri, 2005). Pragmatists subscribe to the concept that education should be “learning by doing.” Education should be based in experience and preparation for the future. Miettinen (2000) suggested that Dewey makes the distinction between primary and secondary experience. Primary experience is the interaction with the environment, physically and socially. Secondary experience relates to reflection. Reflection can be due to positive or negative primary experiences (Morgan, 2014).

Education is helpful in that a teacher can not only introduce concepts and theories at the time of the clinical encounter but also through the clinical grading process and feedback. This is also known as reflection. The tricky aspect of the grading experience, like any experience, is that they can be both good and bad. While good experiences can lead to good learning habits, bad experiences, or even experiences that provide little opportunity for growth, can do the exact opposite. If the clinical grading process is not used to the fullest extent and meaningful to the students, it may actually cause more harm than good. In investigating the concept of clinical grading, this is a crucial question to examine.

The pragmatic qualitative research approach can be used to study various phenomena, which suited my needs as I progressed in this research and perhaps continue with subsequent studies in this area. In this study, I strived to study individuals (those doing the grading), structures (the grading scaffolding), and processes (how we accomplish the grading). Using this approach allowed data collection in a natural environment and offered various data collection
options, including interviews and focus groups. Most importantly, this research type is practical and can be related to the specific practice, clinical grading, that I study (Fossey, 2002).

**Experiential Learning**

The basis for the concept of experiential learning theory originates in the work of educator John Dewey. Dewey (1938) espoused the concept that learning occurs during and from experience. Dewey’s work became the foundation for what is now known as progressive education. According to Dewey (1938), not all experiences produce learning; some may miseducate, leading to less than meaningful experiences, and hence, learning or growth does not occur. For learning to occur, the learner must connect with the experience, and the experience must be genuine (Murray, 2018).

Drawing upon the works of Dewey, as well as Piaget and Lewin, Kolb (1984) defined experiential learning as the process whereby knowledge is created through the transformation of experience. The Kolb learning model consists of four stages that learners progress through during the learning process: concrete experience, reflective observation, abstract conceptualization, and active experimentation (Tanaka & Son, 2019). Learning is effective when there is a progression by the learner through these four stages.

In viewing clinical grading at SCO through the experiential learning theory lens, the following connections emerge:

- *Concrete experience*: The students experience patient care in which testing, diagnosing, and treatment is occurring.

- *Reflective observation*: The student attempts to make sense of what happened during the examination and reflects on the encounter. This reflection begins with rethinking the case by completing the examination record and discussing the case with the
faculty member and continues throughout the grading process and beyond. Clinical grading, in my opinion, should be considered an aspect of reflecting. Through the grading process and the feedback provided, the student self-directs their learning, chooses to practice a given technique, or learns more about a given topic or condition regarding the previous patient encounter.

- **Abstract conceptualization**: This is the critical thinking aspect of patient care and the ability to integrate observations with previous knowledge and experiences and logically sound theories. This includes what students do post-reflection to help build their understanding and knowledge. Does the student practice a technique or read up on a disease process?

- **Active experimentation**: The student’s knowledge is brought forward to future patient encounters.

This learning experience cycle will then start anew. The student in theory builds knowledge and experience, becoming more confident and independent. Experiential learning is crucial to this process of “putting it altogether,” including the clinical grading process.

**Research Context**

A qualitative approach was used for this study as it investigates how people experience and make sense of the world and events—how things actually work in the real world. It is usually bottom up rather than top down, meaning the data builds the theory or conceptual understanding, which may be useful in other contexts, rather than the data being collected to test a hypothesis (Cristanchio et al., 2018). This approach was chosen in contrast to quantitative methods to help provide the “how and why” and not just the “what.” A study could be fashioned to examine how individuals rate the grading system on a Likert scale, but that would not provide
the depth needed to truly understand the grading phenomena. The goal was to understand better how the grading system is being used, if it is effective, and possible improvements that can be made; there is not a single number to be compared.

Qualitative study places a priority on the people, their experiences, and their inner feelings and attitudes, which is a crucial aspect of this inquiry (Fossey, 2002). Each of the individuals participating has different experiences in life related to, but not limited to, optometry, which factor into how they use the grading system. The ability to explore those influences on clinical grading, for me, was an enticing feature of the study.

Getting the variety of perspectives and interpretations of the different individuals in the various groups is also a key factor in choosing qualitative methods (Gill, 2008). The ability to interact with the participants, view their body language, gauge their reactions to questions, and hear the tones of their voices are all factors missed in a quantitative approach.

**Research Site**

Founded in 1932, Southern College of Optometry is a private college solely focused on teaching optometry. The Doctor of Optometry (OD) is a four-year program during which students (135 per class) have both didactic and clinical experiences. The program starts off with didactic learning in classes and labs and over the four years transitions to all clinical learning by the fourth year. The on-campus clinical experiences occur in one of five locations with the largest percentage taking place in The Eye Center, a three-story facility with 70 exam rooms. The care at The Eye Center includes primary care eye care as well as specialty services including contact lenses, vision rehabilitation, and pediatrics. Approximately 60,000 patient encounters take place annually in the clinical programs. Over 1000 different insurances are accepted including Medicare, Medicaid, and private insurances.
This site was chosen as I am on faculty and have access to the participants, but SCO also represents a typical graduate health professions program. These types of programs all face the daunting task of evaluating clinical performance. My hope is that the work completed in this study can be helpful not only to other colleges of optometry but to other programs that involve clinical care and grading including dentistry, medicine, and nursing.

**Research Method**

Naturalistic evaluation “involves gathering descriptive information regarding the evaluation object, setting, surrounding conditions, relevant issues and values and standards for worth and merit; determining, discovering and then later sharing information desired by relevant audiences; and negotiating decisions” (Savin-Baden & Major, 2013, p. 278). It is used as an alternative to traditional approaches of developing a hypothesis and testing it to provide details or illustrate aspects of the program under observation (Cojocaru & Cojocaru, 2011). This evaluation type relies on direct interaction in the form of observation, focus groups, interviews, and document review. This takes place in the natural environment in which the program lives and breathes, hence the name naturalistic evaluation. One of the hallmarks of this type of evaluation is the adaptability and flexibility throughout the entire process. This flexibility is important and even preferable during formative study (Cojocaru & Cojocaru, 2011; Rubin, 1982), like the current study.

Rubin (1982) identified three phases of a naturalistic evaluation study: familiarization, action, and synthesis phases. In the familiarization phase, the goal is to get to know the field being studied. Decisions are made as to who, what and how the study will take place, giving structure to the study. The action phase is marked by observation, interviews, and documentation. There is a gathering of ideas, feelings, values, and problems and identification
and selection of the core issues. This phase includes data collection, classification, and analysis. The synthesis phase sounds like it should include analysis but actually involves the presentation and summary of the findings. In naturalistic evaluation, the aim of the presentation is making the presentation as relevant as possible for the audience. Numerous viewpoints, in the form of quotations are presented.

There are numerous approaches under the umbrella of evaluation research. Some common types include formative, mid-term, and summative evaluation (Sufian et al., 2011). Formative evaluation occurs prior to, or is the starting point for, evaluation research. It sets the stage for the research and involves assessing the needs of the stakeholders or users before beginning an actual project. In contrast, a summative evaluation transpires either when a program has been completed or has been taking place for a substantial period of time. Somewhere between those two approaches is what is considered the mid-term evaluation. From the name alone, it can be inferred that the mid-term is used to see how far a program has come and allows for change or modification is necessary (Sufian et al., 2011). Given that grades are provided to students at the completion of each patient encounter, they could be considered formative in that instance, but they could also be considered summative in that all of the grades are averaged at the end of the semester to create one final grade. For the purpose of this study, the grades were considered as formative.

A quote by Guba (1987) illustrated why the naturalistic evaluation approach was chosen as a lens for this study: “The evaluation process is in essence one of negotiation with and between stakeholders, and the evaluation product is not interpreted as a number of conclusions and recommendations, but rather as an agenda for the continuing negotiation” (p. 39). As the SCO clinical grading system is not complete in its evolution, the concept of this study being “an
agenda for negotiation” hits home. In my view, this study is a starting, not endpoint for the clinical grading system. I studied the grading system in hopes of understanding how it was being used and its effectiveness as a grading system and teaching tool, as well as seeking to influence change in the system towards improvement.

**Data Collection and Participant Selection**

Data collection in this study consisted of two methods, interviews and focus groups, to gather information from three groups at SCO: students, faculty, and administrators. I conducted interviews with the administrators and focus groups with the faculty and students. This is summarized in Table 1.

Interviews provide insight into the participants’ thoughts and views and relevant experience (Gill et al., 2008). Employing the approach of Gill et al., semi-structured interviews consisted of several questions that set the stage for exploration through probes and follow-up questions. Follow-up questions allow the interviewer and interviewees to expand on the key questions to ensure that they are getting across important points and enrich the discussion with their personal experiences. These points may be important as they could not have been considered previously by the researcher (Gill et al., 2008). A structured interview is limited to just the approved questions and would not allow for a following of the directions the participants might take.

**Table 1**

<table>
<thead>
<tr>
<th>Type of Data</th>
<th>Number</th>
<th>Who participated</th>
<th>Location</th>
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<tr>
<td>Administrators</td>
<td>One-on-one interviews</td>
<td>3 administrators who created the current clinical grading system and have been involved in maintenance and changes since that time</td>
<td>TEAMS-online</td>
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Using a semi-structured interview process, I interviewed three members of the SCO administrative team who played a role in establishing the clinical grading paradigm currently in use. A1, who has been at SCO for over 30 years, is the Vice President of Academic Affairs and has been in that role for two years. Before that position, he was the Assistant Vice President, and before that, a clinical chief in the contact lens service. He is instrumental in interacting with the faculty and is the voice of the faculty at the college. He is responsible for the curriculum at SCO, which includes didactic and clinical courses. Ultimately, how the clinical grading system is set up falls under his responsibilities. He also is the current Chair of the ACOE. A2 has been on faculty at SCO for 21 years. Currently, he is the Chief of Internal Clinics at SCO and is in charge of The Eye Center, the main clinical site that provides care to approximately 45,000 patients annually. As the Chief of Internal Clinics, he is responsible for implementing the clinical grading program at the college. Every few years, A2 forms a committee to investigate the grading paradigm and consider changes to it. A3 has been at SCO for 20 years. He is the Vice President of Clinical Programs and has held that position for seven years. He was the Chief of Staff for Clinical Programs for many years prior. He oversees all of the clinical programs associated with the college, including satellite clinics. As the leader of the clinical programs, the clinical grading system is directly his charge.

All three administrators were emailed individually to request participation, and all three agreed within several hours of first contact. The plan was for these three individuals to be interviewed in person, following COVID protocols as directed by SCO at the time, at a neutral location.
site at the college (not their office or the researcher’s) to minimize the influence of power in our relationships, as they are my superiors. Due to COVID restrictions of masking when in close proximity to each other, I moved the interviews to Microsoft TEAMS. This was done for comfort of the parties involved and to ensure a quality recording for transcription. Each individual was asked for possible appointment times based on their schedules and the interviews took place within two weeks of the initial email.

I conducted individual interviews with the three administrators as they all served different roles at SCO and hence, their use and interaction with the clinical grading process might have differed. They each also had different influences on the development and needs from the clinical grading process. It is that individuality I wished to capture. A single, 60 to 90-minute interview was conducted with each individual.

The second group studied was the clinical faculty as they provide the grades in the clinical grading system. Along with the students, the clinical faculty use the grading system on a daily basis and doing so is part of their assigned responsibilities. This group was studied through a focus group. Focus groups allow access to many stories at once, in a dynamic, group interaction. It was hoped that this interaction would allow greater depth of discussion and for the participants to open up more than in a one-on-one setting (Dilshad & Latif, 2013). This faculty group was familiar with each other since they work in the same place and have shared experiences; it was apparent that they felt comfortable discussing sensitive issues and challenging each other (Gill et al., 2008; Morgan & Spanish, 1984). This group of faculty was chosen by purposeful sampling (Palinkas et al., 2015) based on the length of time teaching at SCO and specific area of expertise. This range of teaching time and service allowed for varied responses, philosophies of grading, and grading processes. A total of six clinical faculty, two
from each of three distinct groups based on length of time teaching at SCO: 1-3 years, 5-15 years, and greater than 15 years, were asked to participate in a focus group. It was important to have faculty from various services/specialties represented, including primary care, pediatrics/vision rehabilitation, cornea and contact lenses, and ocular disease. A list of faculty was accessed on the college website where the year of hire was listed for each. Selection for inclusion was made by the researcher, balancing the time served on faculty and clinical service in which they work with students. Faculty who worked in the clinic a significant portion of their week (instead of the classroom) were prioritized in the selection process due to the amount of student clinical grading interaction. I started by selecting the faculty who would fit into the longest tenured category as there were fewer from which to choose. Keeping in mind the gender and service in which those two faculty members worked, I then selected the remaining faculty in the two other lengths of tenure at SCO based on gender and service. Each faculty member selected was emailed individually and asked to participate. Four of the six faculty members accepted the invitation within one day of the request. A second request was made to the two outstanding faculty one week later and one accepted and another declined due to lab/lecture responsibilities. An alternate faculty member with similar length of tenure at SCO and similar teaching service was emailed, and she accepted within 24 hours.

The focus group was supposed to be conducted in a comfortable, quiet environment, on college grounds, following the COVID protocols of SCO at the time. Due to COVID restrictions of masking when in close proximity to each other, for comfort of the parties involved and to ensure a quality recording for transcription, the focus group was moved to Microsoft TEAMS. Scheduling the meeting was expected to be a challenge due to differing faculty schedules but the
request for participation came a few weeks before a break week in which no students were on campus. The focus group was 120 minutes in length.

The third group was the students. In the clinical programs, third- and fourth-year students see patients and log their clinical encounters so that each encounter can be graded by the faculty. Originally, selection for inclusion was to be made by the Vice President for Student Affairs to remove bias on the researcher’s part. The plan was for two focus groups, one for 3rd-years and one for 4th-years. Six students from each year were be chosen by purposeful selection, with two in each in the lowest, middle, and upper thirds in terms of didactic performance. This plan would have allowed for a more comprehensive understanding of how students of various abilities use the grading system in their schooling.

The selected students were emailed individually with an invitation to participate and were told that they were selected by the VP of Student Affairs. Only one student responded after two emails separated by several days. Due to the lack of willingness to participate in the original group selected by the VP of Student Affairs (1 of 12), the researcher sent a general email to both classes of students on two occasions. Five more students came forward to participate from that process. I believe that the challenge in recruiting students was related to the time of the year I was doing the research—late March to early April. This is quite close in timing to finals for the 3rd-years and graduation for the 4th-years. It is quite possible that they did not wish to give up the time for the focus group, which ultimately had to be completed on a Saturday morning due to scheduling challenges. It is also possible that the students did not see merit in the project or were apprehensive in sharing their feelings on the topic. A total of six students participated in this focus group, three in the third year and three in the fourth year since third- and fourth-year students are in different phases of their academic careers, it was important to attempt
understanding their current usage of the clinical grading system and if that changed over time. As optometry classes are approximately 60-75% female, having two-thirds of the student participants identify as female was representative. The focus group was 120 minutes.

All participants were assured that their participation would be anonymous and would not have a negative or positive impact on their progression through the program and future clinical grading. All interviews and focus groups were to abide by SCO’s COVID protocols at the time they take place, which included masking when in close proximity to others. The focus group was moved to Microsoft TEAMS as this was more comfortable and would improve the quality of the recording to be used for transcription. They were encouraged to speak openly and honestly about their experiences. Informed consent was not required for this study as it was classified as exempt by the University of Memphis Institutional Review Board (IRB). This was considered acceptable by the SCO IRB. In an abundance of caution, the researcher asked each participant to sign an informed consent via DocuSign (see Appendix A). Scheduling this focus group proved challenging as the 3rd- and 4th-year students have different commitments clinically and didactically depending on the day of the week. One of the students suggested a Saturday morning as a solution, and all the student participants accepted this as an option. It was scheduled a week later.

Once the interview or focus groups were completed, the recordings were transferred to the SCO server, specifically, onto a OneDrive account, which is password protected. A backup of the recording was housed on an external hard drive (my computer) only accessible by the researcher. Administrators taking part were identified as A1-A3. Faculty were identified as F1-F6, and students were identified as S1-S6. Participant names were kept confidential. A file that
distinguished participants and their identification code was password protected and stored on my OneDrive account at SCO.

All recordings were transcribed using Microsoft Teams as this was the college’s main mode of video meetings. The program has the option to turn on or off automatic transcription of any meeting that takes place and this function was used for this study. Files were downloaded and stored on my OneDrive account at SCO and my personal computer. Observation notes were taken by hand for each interview and focus group. They were scanned and stored on my OneDrive account at SCO and my personal computer.

**Data Analysis**

Thematic analysis involves the identification of recurring patterns that are presented as overarching statements or themes (Lochmiller, 2021). Braun and Clark (2006) defined thematic analysis as “a method for identifying, analyzing, and reporting patterns (themes) within data” (p. 79). The more frequently a code, or small chunk of data on the same topic, recurs, the more likely that topic will become the basis for a theme. There is more to thematic analysis than coding and the frequency of the codes, as it requires the researcher to ascertain and infer meaning within the data. The aim is “to consider how the reported information addresses a specific research question or invites new conceptual or theoretical understand” (Lochmiller, 2021, p. 2030). These questions tend to focus on the “why” or “what” and not on the “how.” In Bruan and Clark’s (2006) constructivist approach, the research moves from describing what participants have said or written to interpretation of the observed patterns. Thematic analysis can be descriptive, explanatory, and/or critical in nature. There are six steps in the thematic analysis according to Caufield (2021):

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1. **Familiarization.** In this step the researcher gets acquainted with the data. This includes transcribing, reading the information, and taking notes.

2. **Coding.** This means to identify a word or phrase that summarizes the meaning or point or a larger piece of text. Codes can be applied to a word, a sentence, or even an entire paragraph (Lochmiller, 2021).

3. **Generating themes.** While codes are the bricks, themes are the walls that are made up of the brick. Themes are the patterns in the codes and show the bigger picture. As a house has many walls, so too are there many themes (Castleberry & Nolen, 2018).

4. **Reviewing themes.** Now that there are a set of themes, it must be asked whether they accurately represent the original data. The researcher asks questions like “Is anything missing?” or “what can be done to make the themes better fit the data?”

5. **Defining and naming themes.** This involves determine what each theme means and how it helps untangling and comprehending the data. The names should be fairly succinct but easily identifiable.

6. **Writing up.** This is no different than most qualitative or quantitative research and requires sections such as methods, findings, implications, and conclusion.

This type of analysis can be used to make comparisons within a single interview, between interviews of the same group (length of teaching and service), between interviews of different groups, and between the administration and the faculty.

In analyzing the data, I chose to use MaxQDA which was recommended by a fellow student who had just completed the EdD program. Before transcripts were loaded into MaxQDA, I cleaned up the transcription in terms of typos and listened to each interview and focus group to ensure the verbal narrative matched the written transcript. This ensured the credibility of what
was to be coded. Each interviewee and focus group member was sent a transcript of the activity in which they participated via email as a form of member checking. Only one student requested two minor changes to ensure that someone he spoke about could not be identified.

I consulted with the fellow student who had use MaxQDA after attempting to code the first interview and he provided encouraging feedback. I began coding the first administrator interview by selecting all of the texts that provided codable information related to the topic of clinical grading. Those areas were simply coded with the heading of “clinical grading” to make it easier to search in the program (see Figure 4). Table 2 contains the number of codes labelled as clinical grading and the next level codes from those sections listed “general codes” and the codes that would eventually make up the themes.

![Figure 4. First level of coding](image)

**Table 2**

<table>
<thead>
<tr>
<th>Number of Codes for Each Level of Coding and Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Grading</td>
</tr>
<tr>
<td>General Codes</td>
</tr>
<tr>
<td>Expectations develop with experience, are highly personal, and have an impact on learning</td>
</tr>
</tbody>
</table>
Both positive and negative factors influence the grading system’s impact on student learning. The clinical grading system continues to evolve and grow to meet the needs of all parties. The clinical grading system is used in a variety of ways and for different reasons by the faculty, administrators, and students. Clinical grading is subjective and has challenges that inhibit effective use.

After the initial level of coding, I selected sections within the coded areas to be further coded into separate chunks. This was done via in vivo coding to keep the words used as close to the original content as possible. These are labelled as “general codes” in Table 2. Figure 5 shows one of those general codes.

![Figure 5. The Next Level of Coding Performed](image)

Upon completion of those selections, the more specific in vivo codes were identified. Figures 6 and 7 show two examples of in vivo codes that would eventually be placed into a theme. For Figure 6 the code is “it contributes to learning.” For Figure 7 the code is “documentation, quite frankly, is most critical when there is student who is not doing well and some corrective action needs to be taken.”
As the coding took place, some general themes began to form, such as those related to expectations and changes to the current clinical grading system. The smaller codes were then color coded based on the theme where they fit best. For example, in the figures above, yellow represented challenges, brown represented meeting needs, and orange represented potential learning impacts. After the first interview, there were approximately seven or eight themes identified. As coding continued to occur in the interviews, the color-coded sections were placed into their respective themes. As the focus groups began, I found that the overall themes held up.
For example, codes related to meeting needs could represent the administrators, students, and faculty.

After completing all coding of the data and creating an initial set of themes, I began to refine the themes to best capture the data. I found that I could condense a few themes into one such as the one related to subjectivity in grading. I realized that this subjectivity was really just another challenge in the grading process, so this theme became a subtheme in the theme related to challenges.

In looking at the themes, subthemes naturally began to take shape as I was sorting the codes into their respective themes. For example, during the interviews with the three administrators, they spoke about the previous grading system and the changes that occurred since the new system had been in place. Those become obvious subthemes in the theme related to change and evolution to the grading system. All three groups of participants also suggested improvements in the current system which represented further change, furthering the concept of change. Another example was the theme related to the impact on learning. It became clear that there were both positive and negative sides to the impact equation which ultimately became the subthemes.

The themes and subthemes were originally given short-hand names like expectations and evolution and old versus new and continued changes. After the coding process was completed, and all of the themes and subthemes formed, I revisited the codes to have them more reflective of the data in this study.

**Trustworthiness/Credibility**

To ensure quality in the research process with human subjects, one must start with working through an institutional review board. This signals to the participants that the process
has been independently evaluated by a group not associated with the actual research and meets standards related to safety and ethics. Adhering to the approved methodology and having coherence between the question, methods, data, and analysis will also guarantee quality. According to Lincoln and Guba (1985) and Lincoln et al. (2011), there are five criteria for ensuring quality in the research product. The product must be credible (convincing and in the participant's reality), transferable (applicable to different situations), dependable (will endure over time) and confirmable (by others), and authentic (does it contain a wide range of opinions and community consensus that the findings are useful and have meaning). To ensure quality, I employed the use of an audit trail as all interviews were digitally recorded and transcribed. Field notes were taken as the primary recording method and digitally scanned for backup purposes. All analyses, whether performed by hand or computer, were recorded and available for viewing.

Member checking, as recommended by Lincoln and Guba (1985) was a preferred method. This allowed for the participants to give feedback and authenticate the findings and interpretation. Member checking can occur in several ways in qualitative research including returning the interview transcript to participants, member checking interviews using transcripts or analyzed data, member checking focus groups, and by returning analyzed synthesized data. (Birt et al., 2016). In this study, the interview and focus group transcripts were sent to the appropriate participant groups for approval. One student requested two minor changes to ensure an individual was not offended as the student referred to a faculty member in a specific service as “he” and the student felt that it would be obvious who that faculty member actually was. All other parties approved of the respective transcripts.

Peer briefing was also used to establish the credibility of this study. I performed this task both verbally through conversation with a fellow faculty member at SCO as well as two previous
residents who are now faculty members at two sister institutions. They provided feedback on my methods and findings throughout the research process.

The research approach and my given audience necessitates using a traditional presentation of the data. The audience I am trying to reach—statistics-oriented clinicians and researchers—is used to quantitative research. They are accustomed to seeing a traditional report with specific sections, including an introduction/literature review, methods, results, discussion, and conclusion. The pragmatic approach lends itself to this reporting type, which supports its selection and safeguards methodological coherence. Therefore, the writing style is direct to give voice to the participants. Even though it is written in the first person, I attempted to limit myself to observing, describing, and commenting but not participating at the exclusion of the research participants. This is another step to distance myself from the research to better present it in an unbiased manner. Gehrels (2014) indicated that the assumptions and background of the researcher must be acknowledged to reduce researcher influence on the analysis. This was a test for me, as I was embroiled in both the clinical grading process and had my own opinions on the questions I was asking. I had to remind myself throughout the process that the categories and themes had to develop naturally and may not have been congruent with my own. I kept an audit trail in the form of a journal where I recorded not only my progress in the coding process but also my a-ha moments when I made connections to the literature, reactions and thoughts, and implications or actionable steps. I also met regularly with my advisor to discuss the research and coding process, including theme development. I was not constructing my own story, but that of the stakeholders, the administrators, faculty, and students. I did find that my natural curiosity took over on several occasions in a few follow-up questions related to the service I lead. Those
questions were more for my personal knowledge and ultimately, I did not use this data for coding.

**Positionality**

One of the challenges in qualitative research is to address the subjectivity of the researcher. Without caution, this can affect the research, negatively or positively. My interest in this topic arose from my position in academia as a clinical educator at SCO and Nova Southeastern University, where I taught for 2½ years prior to moving to SCO. Since I have been teaching for nearly 19 years, I have taught about 2000 students and completed 20,000 grades. Before teaching, I was a student and was on the other side of the grading equation. I was graded for encounters in my third and fourth year in school by my various faculty. Even as far back as my student days, I felt that the process of grading was flawed. As a faculty member at both colleges where I have taught, this feeling did not dissipate. These questions about clinical grading became more frequent after I became the Chief of clinical service. I began to notice how random the grades appeared. Certain faculty were harder or easier graders and either discriminated well or poorly between good and poor performance. I have had many discussions with both other Chiefs of service on this topic, and they have verbalized the same concerns.

As Chief, I have mentored many faculty throughout the years and have had to evaluate the teaching performance of even more faculty. It became apparent to me that even though there was an organized, logical system in place for clinical grading, each faculty used the system differently and brought their assumptions and subjectivity with them into the grading process. For example, if the patient is being seen in a specialty service such as pediatrics and the faculty is a specialist in that area, the expectations on the student, and hence the grading process, might look different if in a more general service such as primary care. In this study, I engaged not only
with students (some of whom I have personally worked with clinically and graded), but also faculty members I worked with and supervised as the Chief of the service and administrators who I reported to directly. The power dynamic of these relationships varies based on the group. To the students and perhaps some of the faculty I supervise, the power was in my hands but this relationship was the opposite when considering the administrators. Conducting the interviews and focus groups using a neutral site online and not in offices hopefully reduced some of this issue. Assurances of anonymity through the use of codes in place of names was another step taken. The approach taken in explaining the reasons for the study also helped set the tone. Input given was not judged and participants were made as comfortable as possible in sharing openly, without fear of repercussion. The administrators were in favor of this study and were looking forward to the results to address opportunities of process improvement. My hope was to make all participants comfortable and that they will answer openly and honestly.

This study was exploratory in attempting to bring clarity to the clinical grading process. This study included just one institution where I attempted to understand the grading process and how others think about it. It is my hope and plan to study multiple institutions next to connect themes and uncover new ones. The goal is to provide academic institutions information and the best tools with which to accomplish their mission of training the best optometrists.

Summary

This chapter provided a detailed structure and format for this study. The research approach was introduced and discussed. The research site and participants were highlighted. Data collection techniques were introduced as the participants were discussed. How the data will be analyzed was introduced, followed by an examination of trustworthiness to ensure the study’s
credibility. The final section of the chapter addressed the researcher’s positionality related to the study topic and the participants.
Chapter 4: Findings

This chapter begins with a synopsis of the participants, and then it presents and discusses the themes that were identified in the administrator interviews and student and faculty focus groups through thematic analysis. The primary research question directing this study was:

How effective is the current clinical grading system as a method of grading and teaching at the Southern College of Optometry (SCO)?

Two sub-questions were also posited:

How does the clinical grading system at SCO shape student learning and performance?

How does the current system used for clinical grading at SCO meet the Accreditation Council on Optometric Education (ACOE), administration, faculty, and students’ needs?

Five themes, each with multiple subthemes were identified: (1) Expectations develop with experience, are highly personal, and have an impact on learning; (2) Both positive and negative feedback influence the grading system’s impact on student learning; (3) The clinical grading system is used in a variety of ways and for different reasons by the administrators, faculty, and students; (4) Clinical grading is subjective and has challenges that inhibit effective use; (5) The clinical grading system continues to evolve and grow to meet the needs of all parties. The themes and subthemes are presented in Table 3 and described in more detail below.
Table 3

Summary of Themes and Subthemes Developed in this Study

<table>
<thead>
<tr>
<th>Theme</th>
<th>Sub-themes</th>
</tr>
</thead>
</table>
| Faculty expectations develop with experience, are highly personal, and have an impact on learning | 1. Development of faculty expectations is based on their experience in patient care and teaching  
2. Differing faculty expectations causes challenges for the students and leads to changes in their patient care approach and how they learn from grading  
3. Faculty expectations shift based on service specialty, student experience level, and case complexity  
4. Faculty expectations are personal in nature and individualized |
| Faculty feedback can have a positive or negative impact on student learning | 1. Faculty feedback has a positive impact on student learning  
2. Faculty feedback has a negative impact on student learning |
| The clinical grading system is used in a variety of ways and for different reasons by the administrators, faculty, and students | 1. Administration uses the grading system for accreditation and to assess and document student progress, and faculty grading ability  
2. Faculty use the grading system for providing student feedback  
3. Students use the system to get feedback and track patients; their use changes throughout their clinical careers |
| Clinical grading is subjective and has challenges that inhibit effective use | 1. Clinical grading is subjective in nature  
2. The faculty not being present during the patient’s exam by the student the entire time creates difficulties in grading  
3. Faculty do not want to be the “bad person”  
4. The level of orientation and guidance provided to students and faculty is not adequate  
5. There is a “veil of secrecy” over how the system works behind the scenes that impacts use and understanding of the grading system |
| The clinical grading system continues to evolve and grow to meet the needs of all parties. | 1. The grading system continues to evolve to meet needs  
2. Evolution needs to continue for program growth |
Participant Profile

Table 4 displays a synopsis of the participants and selected demographics. The participants were anonymized using pseudonyms and codes as detailed in Table 4. Administrators taking part are identified as A1-A3. Faculty are identified as F1-F6 and students are identified as S1-S6. For each participant, gender and years at the college are identified. As the administrators all served as faculty as well, their breakdown of years in both administration and as faculty are listed. Students are listed as being in either their third or fourth years. The service in which the faculty and administrators typically work with students is listed as well. The race of the individuals was omitted as that would reveal the identity of some of the participants since there are not many Black faculty or students at SCO. The gender representation of participants in the study are illustrative of those groups at SCO. The faculty is about 50/50 male to female, but the student population trends toward a greater percentage of females.
Table 4

Synopsis of the Participants and Selected Demographics

<table>
<thead>
<tr>
<th>Category</th>
<th>Type of Data</th>
<th>ID Code</th>
<th>Length of service</th>
<th>Service where they saw patients</th>
<th>Demographics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrators</td>
<td>One-on-one interviews</td>
<td>A1</td>
<td>35+ year academic, 20 years in administration</td>
<td>Contact lenses</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A2</td>
<td>20 years academic, 20 years in administration</td>
<td>Pediatrics</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A3</td>
<td>20 years academic, 20 years in administration</td>
<td>Primary care</td>
<td>Male</td>
</tr>
<tr>
<td>Faculty</td>
<td>Focus group</td>
<td>F1</td>
<td>30 years</td>
<td>Contact lenses</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F2</td>
<td>3 years</td>
<td>Ocular disease/primary care</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F3</td>
<td>15 years</td>
<td>Low vision and primary care</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F4</td>
<td>13 years</td>
<td>Contact lenses</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F5</td>
<td>4 years</td>
<td>Pediatrics and vision rehab</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F6</td>
<td>10 years</td>
<td>Primary care</td>
<td>Female</td>
</tr>
<tr>
<td>Students</td>
<td>Focus group</td>
<td>S1</td>
<td>3rd-year intern</td>
<td></td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S2</td>
<td>3rd-year intern</td>
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<td>Male</td>
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<tr>
<td></td>
<td></td>
<td>S3</td>
<td>4th-year intern</td>
<td></td>
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</tr>
<tr>
<td></td>
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<td>S4</td>
<td>4th-year intern</td>
<td></td>
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<tr>
<td></td>
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<td>S5</td>
<td>4th-year intern</td>
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<tr>
<td></td>
<td></td>
<td>S6</td>
<td>3rd-year intern</td>
<td></td>
<td>Female</td>
</tr>
</tbody>
</table>
Theme 1: Faculty expectations develop with experience, are highly personal, and have an impact on learning

In the interviews and focus groups, participants from all three groups in the study (administrators, faculty, and students) continually spoke about faculty expectations of student performance and how those expectations impacted use of the clinical grading system. Faculty grading is very much a “moving target” based on numerous factors including their experience in patient care and teaching. Since every faculty has a different path of development, their expectations are personal. The expectations can change based on service specialty service in which the patient is seen, the student’s level of experience, and the complexity of the patient, causing issues in how the students use the grading system and their ability to learn from its use.

The administrators highlighted that “not everybody [referring to faculty] was using this [clinical grading] system appropriately” (A2, Para. 34). For example, A2 brought up how some faculty were unable to differentiate between good versus bad student performance and “would give the exact same grade hundreds of times in a row” (A2, Para. 34), which is obviously not reflective of student performance, since even one student does not perform in the same manner with different patients. Thus, it would be impossible if hundreds of students performed at the same level with hundreds of different patients.

For the students, expectations surfaced in terms of not understanding what was expected of them or differing expectations based on which faculty they were working with and, ultimately, which faculty was completing the grade. For faculty, their expectations play a huge part in how they grade. The faculty discussed having different expectations based on the service they see patients, the level of experience of the student (3rd or 4th year), and the complexity of the patient. The development of these expectations is very personal to faculty and matured via
personal experiences in patient care, which in turn impacted their expectations for student performance.

Below is a more detailed explanation of the subthemes which address the faculty side of the equation in how their expectations develop, how they differ based on various student factors including year in school and clinical service, and that the expectations are individualized to the faculty members. The students are addressed as well as the differing faculty expectations lead to challenges which impacts how they use the clinical grading system.

**Subtheme 1: Development of faculty expectations is based on their experience in patient care and teaching**

The development of faculty expectations of student performance is individualized to the faculty members. This is mainly because each faculty has taken a different path to teaching and their number of years teaching and spent at SCO is variable. A1, a 30+ year faculty member describes his process of how his expectations of student performance matured:

> You know, it was unconscious because I can’t provide you with a rational step of how I developed it [his expectations of student performance]. I have obviously been doing this [clinical grading] very long time. I’d spent virtually all of my time in clinical teaching, and so really it was built up over years of, you know, dealing with students, watching them perform sort of knowing what I would expect a student to do at a certain point in their career in our clinic and tempering that with how complex is the patient. (A1, Para. 43)

F1, a 30-year faculty member describes a similar process about how his expectations developed throughout his career:
I think that after the number of years that I’ve done this, now it’s more subconscious than conscious, but it is certainly something that you know, I thought more about initially when I was a younger in my career, earlier in my career, at this point it’s been internalized. (F1, Para. 82)

Faculty can get comfortable over a number of years in grading students and having an understanding of what they personally expect in terms of their performance. But it is concerning that these two faculty members are so comfortable that they do not really think about their expectations any longer. They just know when the student is meeting their expectations.

Personally, as a faculty member, I have my own expectations, but I am constantly checking in with others as a calibration to make sure that my expectations are in line with others. I do not want to be too tough or not tough enough in my clinical grading, which is a reflection of my expectations for the students.

In contrast, F2, an experienced clinician who has been teaching at SCO for only two years, offers a different perspective since he had been in private practice for many years prior to joining academia. This was a contrast to the more senior faculty, since he was so new to the academic aspect of optometry, he needed to calibrate his expectations both with his personal experience and with others on the faculty.

I got some time [to observe students] early on. Doctor XXX, let me do a couple of [student] evaluations. Even whenever I was consulting clinical faculty and I wasn’t supposed to be doing evaluations, but a part of it was, I didn’t know exactly where a typical third-year student should be in their first semester. And so, I was able to go in and kind of see where the average or better than average student was, how they were performing their comprehensive eye exam and then kind of based on that, then I was able
to kind of formulate my own grading system and my expectation, so that was probably the most helpful thing for me. (F2, Para. 87)

Similar to F2, F5, who has been teaching for three years, highlighted the need for experience and how that impacts the grading process in the following statement: “You just need a year or two of working in the clinic to see what is truly, you know, what's typical for a student, what's atypical for a student” (F5, Para. 154). F2 and F5 highlight the learning process of clinical grading and the development process for personal expectations. This raises the question as to the quality of the grading during those first few years of as a faculty member and the need for more guidance during that time. It also highlights the need for faculty meetings with the purpose of grade calibration to address student performance.

In general, the comments centered on the learning process being steep for faculty in the first few years of teaching but then the process becomes less conscious. Eventually, the grading process becomes “internalized” (A1, Para. 82). Faculty, after several years of teaching, just seem to “know” student performance levels and if the performance meets their expectations. There is a concern here about faculty making their subconscious/internalized expectations clear to the students, so students know what is expected of them.

Subtheme 2: Differing faculty expectations causes challenges for the students and leads to changes in their patient care approach and how they learn from grading

Student comments acknowledged that they are quite aware of the differences in expectations and grading among the faculty members; this, in turn, not only impacts their learning experience but also how they interact with the clinical grading system. Comments such as “I’ve learned what they expect for me” (S1, Para. 29), and “I do feel like I kind of tailor my [patient eye] exams to who I’m working with in a way” (S1, Para. 98), highlight this issue.
The potential impact of these differing faculty expectations on students is witnessed in not only how students record examination data in the medical chart, as documentation was singled out as a main point of contention and difference, but also how students approach patient care situations. S1, a 3rd-year student, discusses the issue of how different faculty members’ expectations cause frustration among students using the grading process since the expectations seem to be inconsistent.

It's really a struggle because you get so many different staff doctors [faculty] and especially this semester, I filled in like all over the place [in different clinical services at SCO] and it’s impossible to keep up with how they [faculty] want me to do every specific thing. And it’s like I’ve been doing it one way and no one ever told me that. And then all of a sudden, you’re telling me it’s wrong and … it’s kind of impossible because everyone [in the faculty] does it so differently, which is one of the more frustrating things for me, getting my grades back. (S1, Para. 98)

S3, a 4th-year student, talks about learning different faculty member’s expectations and the subjectivity of the grades received. Subjectivity is also part of Theme 4 but connects here as faculty expectations of student performance are both personal in nature and individualized, and therefore, subjective in nature.

With grading, it’s very staff, doctor [faculty] dependent. You’ll see one where it’s like you would never get a below [below expected performance in some aspect of the grade or for the entire grade] from this one, grader for doing this, but another one you will get a below if you do this. So, it’s kind of learning that. (S3, Para. 14)

S1 added more about the subjective nature of grading by making the connection between expectations, grading, and the impact on learning.
Yeah, like something just more consistent because it does kind of make it hard to use your [faculty] feedback when you’re just not sure. Like, oh, I’ve never gotten a below for that like type of thing. It doesn’t feel as useful in that aspect when it’s so inconsistent.

(S1, Para. 180)

The variability of faculty with their different expectations along with the inconsistency in grading have a negative impact on students overall. Students getting to work with different faculty and getting alternative viewpoints and care instruction could be seen as a positive but when related to grading, this does not seem to be the case. This point will be further elaborated on in the impact on learning theme, Theme 2 making the connection to negative learning impacts.

*Subtheme 3: Faculty expectations shift based on service specialty, student experience level, and case complexity*

The clinical grading system is used at SCO in the third and fourth years of student education. The students rotate through various services that focus on primary care, contact lenses, pediatrics, and so on. The faculty work with students in one or several of these services. The faculty, including the administrators, acknowledge these variables, as well as several others, in their grading paradigm. The factors that influence their grading include the following: service in which the student is working, student experience level, and case complexity.

**Service Specialty.** F2 and A3, who have worked with students in both the third and fourth years and in several services, discuss that their expectations change based on semester, year, and service. F2 is talking about providing written expectations to students:

I have one [set of written expectations] for each of the three semesters for third-years in APC [adult primary care service], and then I have one for my disease students, then we
have one for the ASL [advanced surgical procedures] lab for 4th-years. (F2, Para. 67)

A3 talks about his internal expectations, which, unlike those of F2, are not written and provided to the students. This is similar to my experience working with faculty members. I have encountered few faculty members, like F2, that write out their expectations that changed based on service.

It [his expectations of student performance] changes based on the service that I’m in and it changes based on, obviously, the level of student that I’m teaching and what period they are in, you know at what point they are in either their third- or fourth-year internship. (A3, Para. 114)

Again, we have the issue of some faculty providing written expectations to their students with great detail based on changing levels of performance expectations and others not doing so. Both faculty have altered expectations based on service and also year in training, but they differ in their approach to informing the students about those expectations. This lack of communication from some faculty hampers the learning opportunities offered through the clinical grading system and confuse students clinically as mentioned by the students.

**Case Complexity.** The concept of changing expectations of student performance based on the complexity of the patient diagnosis and treatment was touched upon by F5 and ties back to the experience level of the student when the patient was seen. F5 stated, “It really will depend on how much hand holding on doing the level of the case, whether it was a straightforward case or a difficult case” (F5, Para. 60). While this was not specifically stated by other faculty members participating in the focus group, in conversations with faculty over the years when
discussing failing grades, many would make off-hand comments about their expectations based on the difficulty of the case.

**Experience.** Not only is there a change in expectation based on the service, but changes are seen based on the student’s experience level as well. F5 supports the notion that expectations change based on experience level in the third year by saying, “for me it depends on what semester” (F5, Para. 60). A3 goes a step further and ties the change with the grades given, “A three [above expected performance] is rare for me to give in the first term for a third year in the beginning” (A3, Para. 82).

As students progress from 3rd- to 4th-years, their clinical experience grows but can be quite different depending on the external clinical sites they choose in their fourth year. F4 takes an assessment of student experience into account in how she not only works with students but in how she alters her expectations:

Yeah, so I always ask in the beginning who’s had experience and what range. We’ll have our students will have none whatsoever. I know I have to kind of treat them a little bit more like a first semester 4th-year versus some students that may have had some experience where I don’t expect them to know how everything to do a fit [contact lens fitting], but I expect them to have some sort of way to talk to patients and formulate what type of lens. (F4, Para. 71)

A1 corroborates the grading thought of F4 related to experience level in this statement:

I think it makes a big difference if it’s a brand-new 4th-year that’s never been in contact lens before or a 4th-year who is two weeks from graduation and has been on extern [a site out of the SCO clinic] where ostensibly they would have had some of that experience, but is also nearly at the end of their educational program. (A1, Para. 23)
There was consensus among the faculty and administrators that there are indeed factors that alter their expectations. These factors include the service in which the student is examining patients, the patient complexity, and the experience level of the student. While there is acknowledgement that expectations change based on these factors, it does not mean adjustments occur in the same way for all faculty, furthering the confusion of changing faculty expectations in grading.

**Subtheme 4: Faculty expectations are personal in nature and individualized**

The concept of expectations being very individualized and personal is evident in the statements from both faculty and administrators. There is a constant use of “my” and “I” when referring to expectations. Several of the faculty commented on this topic. F4 stated, “I have my own list of expectations that I inherited and then changed a little bit from previous faculty” (F4, Para. 157). Throughout the focus group, many of the faculty personalized the concept of expectations, making comments like, “perform higher than what I would have expected” (F4, Para. 61), “being outside of my expectations,” (F4, Para. 58), “where I think they should fall” (F6, Para. 61), and “I expect them” (F2, Para. 65). A2 also made a similar comment: “below the level at which I would expect them to be performing” (A2, Para. 25).

This personalization of expectations is directly tied into grading. In this statement, F3 is responding to the questions concerning what the grading levels of one, two, and three mean to her and how it impacts her grading paradigm.

What they [the different levels of grading, 1-3] mean to me is, is the student meeting or not meeting expectation? So level one, the individual is not meeting expectation, level two they are or very close to meeting expectation and level three they exceed expectation. So, I don’t give out a whole lot of threes, unless somebody is clicking on all cylinders. (F3, Para. 52)
Faculty expectations develop over time throughout the faculty member’s career. As every career takes a different path, those life experiences influence what the faculty views as acceptable student performance. Grading is personal in nature and individualized, which has a direct impact on how faculty use the clinical grading system, subsequently effecting how the students use and interact with it.

**Theme 2: Faculty feedback can have a positive or negative impact on student learning**

Faculty provide qualitative feedback as part of the clinical grading process in the form of two text boxes that offer them the opportunity inform students what they did well and what they need to work on for a given patient encounter (see Figure 8).

![Figure 8. Text Boxes Used by SCO Faculty for Each Grade to Provide Student Feedback](image)

Faculty also use those boxes to reiterate what they might have discussed with the student verbally or to provide resources such as articles or links to websites for the student to review. In this study, it was found that feedback can help build student confidence and provide points of reflection, including resources. Feedback is also used to comment on aspects of the eye exam that students need to improve on, which students can use to grow as clinicians. Feedback that is specific in nature and considered helpful by students has a positive impact on their learning as also illustrated below. Furthermore, the influence of quality feedback was reported by faculty as having an impact on later student interactions in a clinical setting.

The feedback can also have a poor impact on student learning as illustrated below. As found in this study, if the faculty provides poor-quality feedback—for example, not being
specific in what aspects of the student performance needs improvement or using the exact same feedback multiple times, regardless of the student or patient experience—this can detract from the student’s ability to learn and grow as a clinician. The timeliness of receiving the feedback has an impact on the student’s ability to learn from the encounter as well. This theme will discuss both the positive and negative aspects of feedback and the effect on student learning.

**Subtheme 1: Faculty feedback can have a positive impact on learning**

In this study, faculty feedback having a positive impact on student learning centered around three main topics: building student confidence, faculty feedback, and faculty seeing the shift in student behavior following feedback provided through the clinical grading system. Teaching in optometry is more than learning technical skills and memorizing details about conditions. Efficient and effective decision making is an important part of the learning process. As any optometric teacher can attest, the building of confidence as the student becomes a doctor is crucial in creating a well-rounded, competent clinician. There is an art and science to the profession of optometry which must be nurtured.

The concept of building student confidence came up in a number of quotes from the students and how the feedback they received within the grading system helped in creating and building that confidence. S3 related the concept of confidence and how the grading system helped build her confidence in these two quotes, one from earlier and one from later in the focus group, showing the importance of the concept in her education.

I had one [faculty] tell me they’re like, the first thousand patients you see, you’re still gonna be learning and that almost made me feel better. It’s like, ok, I’m not supposed to come out knowing every little thing and almost gave me that confidence. So, having a staff doctor teach me, with giving me the confidence. (S3, Para. 65)
My goal out of the grading system, it’s like giving me that confidence. Tell me what I need to grow on and if I do something wrong, yeah, I’d like to know definitely. But in a constructive criticism way rather than harsh. (S3, Para. 184)

While S6, a 4th-year student does not specifically use the word confidence, she relays the same concept in discussing the topic concerning the feedback she gets.

I do like that it makes you feel like your staff doctor was present with you through the encounter, especially if they respond quickly and just have, even if it’s like a sentence just summarizing and they it just lets me know that they, you know, were there for me or they at least know that I’m making progress. So, it’s nice to have like a little touch point after the patient encounter. (S6, Para. 133)

These student comments show the impact on learning that can occur in giving feedback through the clinical grading system. F1, an almost 30-year faculty member hits on confidence and the importance of developing it from the teaching side of the equation. He uses the grading system with building confidence as a specific goal and makes comments that assists the students in creating the mental scaffolding to be excellent clinicians.

And so it’s not always in a negative vein [feedback] as you point out, a lot of times it’s catching them doing things right because they not only have to be competent, they have to be confident. And I think that confidence is built when you reaffirm that they’re doing proper behaviors and really stepping outside the norm and identifying themselves as an exceptional individual. (F1, Para. 105)

The building of confidence is evident in these comments and shows the positive impact on learning that is possible in the use of the clinical grading system at SCO. That these concepts were mentioned by both students and faculty allows for a stronger connection to be made
between the clinical grading system and the positive impact, the building of confidence, that it can accomplish.

A1 highlighted the importance of faculty feedback in the clinical grading process: “I think one [outcome] is we hope that the grading will be a learning experience, hence the reason for those two mandatory comment [feedback] boxes” (A1, Para. 14). This comment shows that those individuals designing the clinical grading system did so with the concept of teaching in mind. It was one of their goals in fact. A2 highlights the importance of the ability to give feedback to the students and the impact that he feels that the feedback has on learning. “So patient care is vital to their successes and so any acknowledgement of, yeah, this was really good or you know what this could make you better, I think it’s taken seriously” (A2, Para. 26). This reflects on the students using the feedback to learn and become better clinicians, which is the hope of every administrator and faculty member. The statement highlights the positive impact on learning related to feedback in the grades given.

The students had thoughts on how the feedback made them feel, the types of feedback that they received and appreciated, as well as the impact of the feedback on their desire to learn and interact with the faculty. S2, a 3rd-year student hits on the idea of what he feels are the best type of feedback. “The best kind of feedback or good feedback that I get is when a doctor recognizes or sees that you did something that’s out of the ordinary of what you do in a typical exam” (S2, Para. 67). These types of feedback could be considered positive reinforcement to spur on good clinical performance.

S3, a 4th-year student, highlighted the level of detail in the feedback that she prefers and how she learned to view the feedback through a learning lens. While feedback that is critical in nature can be seen as negative by students, this student sees them as a growth opportunity.
So, if they see maybe something they need work on just like this whole broad situation where it's like I can pinpoint like, OK, in this particular case you can work on this. So, I guess seeing it narrowed down to where I need to learn and looking at it. And then I guess it comes into looking at it as a learning opportunity. (S3, Para. 131)

Looking at grades, both bad and good, as a learning opportunity and not punitive in nature is important for student development as clinicians. Looking at grades as a learning or growth opportunity, shows that the students do in fact understand the point of grades as being for development.

S1, a third-year student, links the amount of writing, a sign that the faculty put time and effort into the grading process, to the amount of time she spends looking at the comments. “I usually just look at it longer if it’s something that like, they wrote a lot to work on ‘cause I like to think about it” (S1, Para. 45). Based on her statement, she is basing her desire to look, at least at first, on the quantity of the writing and not the quality. S6, a third-year student, highlights that the faculty use the comments to reiterate verbal conversations. “I have one or two staff doctors who then in their comment section they’ll say, you know, you asked me this and I recommended this, which is actually pretty nice” (S6, Para. 106). For this student, the fact that the faculty are using the grading process to disseminate information is a significant plus. As per the comments made and collated from the data, it becomes clear that comments made in the free text boxes have the opportunity to have a significant positive impact on learning.

As part of the use of the text boxes, many faculty take the opportunity to disseminate information to illustrate certain learning points or resources for the student to continue their growth. This is something that I personally do and find to be well received by the students. S4 not only talks about the giving of the resources for the student to explore, he connects them with
the opportunity to learn and grow as a clinician: “They also include some articles or some publications that are relevant to that case to help you reach that growth.” (S4, Para. 53)

S5 demonstrates the impact of faculty including links to resources or research in their grading submissions, how she uses them to look up information and learn and how she makes the connection to the reflection aspect of the experiential learning cycle.

I really appreciate is when they link research or link things based on your case in those notes, so you can look up on your own time a little bit more, especially if you don’t get the chance to have that kind of case again. (S5, Para. 8)

Since grading is an activity that takes a significant amount of time, as a faculty member, I always wonder if my effort is worth my time. F4 observed how her grading comments have influenced student behavior and performance and how she sees her comments having an impact on student behavior and in future clinical encounters.

F4 not only sees changes in student performance; she sees differences in how students interact with her based her written or verbal feedback.

I feel, whether I’ve written the grade and they’re open to it or if we’ve had a discussion, I can tell there’s kind of a shift in the kind of questions they asked. There’s more, maybe less anxiety. They’re not afraid I’m gonna yell at them and put them down, but that I’m actually there to teach and make sure that they learn these things so I can tell there’s sometimes a shift with the questions. They feel a little bit safer to ask dumb questions or clarifying questions or follow up questions. (F4, Para. 108)

**Subtheme 2: Faculty Feedback Can Have a Negative Impact on Student Learning**

While the goal of the feedback provided as part of the clinical grading system is hoped to have a positive impact on student learning, unfortunately, that is not always the case. In
discussing the types of feedback that the students like and that is helpful in the learning process, they also were honest about what manner of feedback was not beneficial and even detracted from their use of the clinical grading system. Also included was the impression that the timing of the grade completion influenced the potential impact on learning and actually had the potential to become negative in nature.

Student observations emphasize the lack of detailed comments from faculty limiting their ability to grow and learn from the clinical experiences. “I've had multiple encounters where the doctor writes in that ‘need to work on’ box, LOL I have to write something here or there has to be words here -that’s happened multiple times” (S6, Para. 73). This poor level of feedback seems to halt the reflective aspect of the experiential learning cycle for students.

S2’s comment takes the poor feedback quality a step further and shows his frustration since he feels that there is always something that he can learn from every patient he examines. He makes the leap that perhaps the lack of comments is a sign that the faculty are not spending an appropriate amount of time in the grading process:

So, when you get a staff doctor that doesn’t give you anything in that section, it’s almost, I almost kind of look at it as all the like, they’re not spending too much time working on this feedback for this encounter because there are things that we can fix or get better at on every single encounter, but even more so is the what the intern did well. (S2, Para. 24)

Other comments highlight that some of the faculty are not creative and use the same feedback over and over. Several students felt that those faculty copy and paste their phrases that are general in nature, limiting the growth opportunities:

But there are also some docs that have pre-done little things that they copy and paste into your ‘what they like’ section. And for some things for an easy case, that’s fine. Like, oh,
you did well, good job. I don’t know, but sometimes it’s like the same thing and you can
tell or will be talking to your friends about how a certain staff doctor is and it’s like the
same thing over and over. And sometimes that’s great, but sometimes you wish you’d
have a little more personal feedback. (S5, Para. 8)

S4, a 4th-year student, responded with “Great job. What needs work on…nothing” (S4, Para. 69)
when questioned about what types of comments are not helpful. Without feedback that enables
reflection, there once again is a break in the experiential learning cycle.

Faculty are given leeway to complete grades within a few days. They are encouraged to
do this as quickly as possible, but it does not always happen as requested as evidenced in the
following student statements. The comment from A1 shows the variability in how long grades
take for completion, “Sometimes before you’re even done, they’ll grade it. Sometimes it’s like a
week later” (S1, Para. 8). S6 made two comments during the focus group, “a week later when
they’re grading me” (S6, Para. 106) and “it might take them a week to put it in my grade” (S6,
Para. 47). The impact of the lack of timely feedback directly relates to the ability to learn from
those encounters. Having immediate feedback when the exam experience is fresh is quite
different than getting that same feedback a week later after that student has seen a number of
additional patients and they might not recall the details of the patient encounter. S1 touches on
this concept and goes a step further, highlighting different experiences she had in getting
immediate feedback versus feedback weeks later.

I just had a terrible patient encounter this week actually, and they graded it the next day
and I already knew, like I wanted to email, talk about it, and like I felt bad about it and I
knew it was bad and it just made such a difference about how I felt about the experience
being able to like, right away, like, talk about it. And I was able to be like, I didn’t feel
good like, and I agree with, like, her feedback, but then she’s able to, like, expand on it more. And then I’ve also had, like, experiences where sometimes they take like, one or two weeks, and I get the feedback and I’m like, I had a bad time earlier this month or two and I got it back and I thought that’s not really what happened, but at this point it was two weeks ago. (S1, Para. 109)

S1’s comment above shows that not only does timely feedback have a positive effect but that the opposite is true as well. Grading that takes an extended period of time is not well-received by the students and has the opportunity to foster negative experiences and learning.

**Theme 3: The clinical grading system is used in a variety of ways and for different reasons by the faculty, administrators, and students**

The clinical grading system was created to serve the needs of three very different groups: administration, faculty, and students. It was crafted with input from all three groups close to two decades ago. Even though it was fashioned in the current format for reasons at the time of development and expected to be used in certain ways, how it is being used now and the interpreted reasons may not match the original intent. This theme focuses on the needs of administration, faculty, and students and how they use the system.

**Subtheme 1: Administration uses the grading system for accreditation and to assess and document student progress and faculty grading ability**

The administrators use the grading system to assess and document student performance for both legal reasons, in case a student failure is contested, and to ensure they are graduating well-rounded students who can gain licensure in all 50 states. The grading system enables the administrators to assess faculty grading ability by tabulating grading statistics such as average and standard deviation for each faculty member. For accreditation purposes, the grading system
requires tracking of the number of patients the students see by year/semester and type (age, gender, ocular condition, etc.).

Accreditation needs are relatively straightforward, but the exact construction of a grading system is left to the institution. A1 provides some background.

We’re accredited by two agencies, ACOE and SACSCOC [Southern Association of Colleges and Schools Commission on Colleges] SACSCOC really doesn’t pay a lot of attention to what we do in the clinic, so I’ll focus on ACOE. SACSCOC, because of their wide range of institutions they accredit, they really don’t get into the specifics of clinical education. ACOE does and essentially, they give the programs really wide latitude…, there needs to be some assessment of student performance, but how the program chooses to do that is largely left up to the program. (A1, Para. 17)

A3 elaborates how SCO meets the needs of ACOE and used ACOE requirements as a base on which to build the SCO system.

We have to demonstrate that we are assessing the individual’s [student] knowledge and skill in certain areas, and we do that based on ACOE, and graduate attributes that are internal graduate attributes that have been created using ACOE as a starting point. (A3, Para. 57)

A2 supports A3’s comment above, talking about the specific categories in which the student is assessed. These categories are part of the required areas for student clinical assessment as per the ACOE, so matching those areas influenced the selection of the quantitative categories in the SCO system.

The majority of those [quantitative categories] we could track to ACOE. So, we felt that that would assist the college and keeping in line with accreditation and reaccreditation
standards by assessing these things on each and every encounter. (A2, Para. 29)

Part of assessing progress is related to accreditation as highlighted above but there is something deeper in terms of patient care and the college needing to attest to the public that this doctor is safe and capable of treating patients. We need to check off the accreditation box, but we must also use the grading system to ensure a well-rounded and safe clinician.

So, I think some type of assessment is still necessary given that we're examining human beings for real life conditions. And yes, we’re saying that they [students] satisfy the requirements of our educational program…but…we’re also giving our acknowledgement that we believe they’re safe to independently see real human beings in the care of their eyes. (A2, Para. 26)

As an offshoot of attesting that the student is safe to practice and treat patients, the administration also uses the tracking aspect of the system to make sure that students see a variety of patients, so that they can treat the widest array of conditions and be well-rounded.

It allows us to track clinical experience, also, at a moment’s notice that keeps time so that we could, if we needed to, redirect certain patient types of certain students so that by graduation they would have more of an even experience of a myriad of cases and not just have a lot of one and not have another. (A2, Para. 63)

Having a record of student progress is crucial but almost as important is “having defensible records for grades that are assigned, documentation” (A3, Para. 57). There have been instances over the years of students failing a clinical course or the entire program and challenging the grades legally. So having the records to support the failing grade that go back many years and are easy to access is important to administration.
In terms of assessing faculty grading ability, administration noted that some faculty were not using the grading system effectively as mentioned in Theme 1. Since feedback and assessment is an important part of a faculty member’s job description, it was decided that the system could be used “to evaluate the effectiveness of the clinician who’s doing the grading” (A3, Para. 57), and “could be part of our [SCO’s] yearly review” (A2, Para. 34). This aspect of the faculty’s performance is then used to determine merit-based raises and eventually has an impact on the ability to get promoted. By using the grading system in this manner, it provides not only an assessment of student clinical performance, but also faculty grading functions.

**Subtheme 2: Faculty use the grading system for providing feedback**

The faculty at SCO is diverse in years spent teaching, specialty areas of interest, and background, but they were consistent in the reasons they gave for grading clinically. The most common answer centered around feedback on what the student did well and on what that they need to improve. The faculty also use the grading system to document student performance and to share information/resources with the students. This was highlighted by F3 who stated, “giving students direct feedback about patient encounters” (F3, Para. 8), F2 who stated, “[grading] gives consistent feedback on every encounter” (F2, Para. 143), and F4 who stated, “most of the time it’s just feedback, so they know how they’re doing” (F4, Para. 9).

Beyond student feedback, F5 identifies the need for documentation of performance as an important aspect of grading related to ensuring adequate performance. This indicates that the faculty is aware of the grading system perhaps being used in a legal nature. He stated, grading is a way “to help the student identify when they’re not performing the way they should be and to properly document if the student is consistently not performing where they should be and it potentially warrants further intervention” (F5, Para. 4). Making sure that all faculty truly
understand this aspect of grading is crucial to avoid future issues of poor performance documentation as a continuing challenge.

“Sharing information” (F5, Para. 4) was also a common reason provided by several faculty. F2 connected the dots between providing that type of feedback and the potential impact on learning: “Additional things or pearls that I … try to give them those little pearls that might help him next time or just things from experience that that maybe we didn’t talk about during the encounter” (F2, Para. 10). Using the grading system to record what was talked about verbally is not only a good idea for educational purposes but also for documentation.

**Subtheme 3: Students use the system to get feedback and track patients; their use changes throughout their clinical careers.**

The final group that uses the system is the students. The students use the system to get feedback on performance and to know how they are doing in clinic since there are grades per patient encounter that become summative for a final course grade. They also use the system to track the number and types of patients (age/gender/race, ocular or systemic condition, etc.) they see. How students use the grading morphs as they go through the program, which will be highlighted.

Feedback is a crucial aspect of what the students want out of the clinical grading system. They take the concept of the feedback in the grading system and up it a level by connecting it to its impact on learning. S2 highlighted correcting his actions to best serve the needs of the patient based on faculty feedback: “To know that the things that I'm doing in clinic are the correct things are the right things and I’m doing them in a way that’s effective and working for that specific patient” (S2, Para. 24). S3 internalizes the feedback and relishes the opportunity to improve her performance but also links this growth to the need for independence once she graduates, stating,
“it is great for you to improve, and that’s almost the way you have to look at it. It’s kind of like they just want you to be better and you’re about to be on your own” (S3, Para. 14). S1 validated the concept of growth and independence and self-accountability, saying, “it’s more like you need to hold yourself responsible and your staff doctors holding yourself responsible type of thing” (S1, Para. 16).

There is progression in how the students use the grading system as they move throughout their clinical careers. The 4th-years in the focus group, who returned for their final semester of schooling at the clinic spoke about how they currently used the system and gave some contrast to their use in third year.

I did read more of what they wrote my third year when I was more anxious about what I was doing and how I was. But now I’m more confident in who I am as a doctor, and I know that some things I’ll learn with the doctor [faculty], but I’ll just talk to them. But I still have already my foundation solidified at this point so I don’t go back to see, oh, can I hack it as a doctor anymore so much as I did third year…checking to see if this is for me kind of thing. (S5, Para. 31)

S5 continued and discussed how she went from looking for specific faculty feedback to looking for more general feedback as she grew in confidence in the 4th year after she returned from off-campus externships.

So, I did that for about the first two or three weeks coming back into the clinical setting here, but now I am more comfortable with what the doctors want, so I go look, oh, they put the grade and it’s met, everything is probably fine, so I did check it a little more at the beginning. (S5, Para. 49)
S3 hits on the same concept as S5, essentially saying that she looks just for the passing grade in most cases but on certain encounters will spend the time to dig a little deeper.

After a while over 4th year I haven’t been looking as much. I see if I have mets [met standards for acceptable performance as per the faculty member] and then so you kind of know if you’re on the right track, if you’re doing good and if there was a particular encounter or like I want to learn more about this. (S3, Para. 131)

Over their two years (the third and fourth years) in the clinical programs, it is clear that how the students use the grading system evolves. S5, a 4th-year student, was quite outspoken about her use or non-use of the grading system.

some people [students] are really good about reading those. I’m not the best at reading them, but a lot of times, if I see them met, I don’t read it. I read my belows [below expected levels of performance as per the faculty member] or if I had a particularly difficult one and then go back and try to find it. But there’s just so many that I’m not going to go look at every single one of them when I have so much else going on. (S5, Para. 29)

S4, another 4th-year, corroborates that statement succinctly: “I don’t focus too much on the grade itself, more so how that encounter went” (A4, Para. 21). S6, a 3rd-year student who was close to moving to her fourth year at the time of the focus group, was already making the transition to less use, stating, “I'm basically just checking for that little ‘met’ word that we’re all looking for” (S6, Para. 2).

Similar to the administrators, the students also use clinical grading to track their patient encounter numbers and the types of patients they have seen. They add in thoughts related to patient tracking and offer some detail as to more about what they are looking for when and if
they read their grades. In tracking needs, as it is for the administrators, it is to ensure that a wide variety of patients are being seen. S3 focuses on the number of encounters and types of patients.

Uh, definitely for patient tracking. I think it like catches two birds with one stone. You type in all their demographics, so we have this excel sheet we can export at the end that lets us know how many patient encounters we’ve had. (S3, Para. 18)

S4 adds in the fact that knowing the types of eye conditions being seen is also an important component of the tracking aspect of the grading system, in saying, “being able to kind of keep track of how many people I’m seeing and kind of what I’m seeing as well” (S4, Para. 22).

Students use the clinical grading system for feedback, knowing how they are doing on their grades, and patient tracking. How they use the system, and how much they use the system evolves over time as they progress in the clinical programs.

**Theme 4: Clinical grading is subjective and has challenges that inhibit effective use**

In all systems, including clinical grading, there are inherent challenges regardless of the best efforts of those creating and managing it to reduce or eliminate them. This theme focuses on the challenge of grading both globally and specifically related to the SCO system. The subthemes include global issues such as the fact that clinical grading is inherently subjective, the lack of faculty presence throughout the patient encounter hampers the grading process, and that no faculty member wants to be the bad person and fail a student. Specific issues to SCO include the lack of an appropriate orientation and regular guidance for the students and faculty to learn how to use the clinical grading system and that there is a “veil of secrecy” on the inner workings of the SCO system, which leads to poor understanding of the overall clinical grading process by both the students and the faculty.
Subtheme 1: Clinical grading is subjective in nature

F1 sums up this subtheme in this statement about clinical grading on a global level: “I think all assessment systems have flaws, particularly when you’re dealing with subjective determinations of performance” (F1, Para. 185). He focuses directly on the issue of subjectivity. This sentiment was repeated several times by both faculty and administrators:

I really think it’s very subjective. (F6, Para. 60)

I think to a certain extent it is subjective. (F5, Para. 154)

I think it’s inherently subjective and I don’t make any apologies for that really to the students. (F1, Para. 185)

There’s a lot of soft skills and those are very subjective and difficult to interpret. (A2, Para. 6)

So, it was very evident that it’s very difficult to subjectively assess somebody in a soft skill like patient care, there are some objective things. (A2, Para. 6)

The big challenge with clinical grading is that it is pretty much 100% subjective. (A1, Para. 7).

The most important takeaway from these statements is the acknowledgement from both the faculty and the administrators that grading is subjective. When it is accepted that there is inherent bias in some form or another in the clinical grading process, only then an approach correcting for that bias be addressed. A3 points out that attempts have been made toward standardization, and with the help of technology, he feels that things have improved, and he is satisfied with it.

I think our system is a good system and it’s much better than what we used when I first got here. I mean, it was so very subjective back then. It’s still subjective but given the
assistance of automation, of technology to try to standardize, what we’re looking at, I think I, I mean, I’ve been very satisfied with the system. (A3, Para. 163)

Even still, there is still the sentiment that faculty struggle with certain aspects of grading such as making meaningful comments and trouble with discernment in performance, which has been covered previously.

Subtheme 2: The faculty not being present during the patient’s exam by the student the entire time creates difficulties in grading

The average student to faculty ratio in the clinical programs at SCO is 4 to 1. This means that there can be four patient exams going on at the same time with four different students and a single faculty supervisor. Therefore, there is literally no way for the faculty to be 100% involved in a student’s examination and in some cases, the faculty–student interaction is quite limited based on the student and difficulty of the patient.

A2 highlights not only the fact that the faculty is not in the room for the entire encounter but the difficulty that poses from the doctor’s standpoint.

I also understand that we’re not in the exam lane watching everything live. We’re interpreting what's going on. We don’t have the opportunity to repeat every test that was done ourselves and then compare it to the students in real time for efficiency sake. (A2, Para. 69)

S2 shows the impact of the faculty not being present in the room for the entire encounter on the usefulness of the grading system.

They’re [faculty] not with you [the student] the whole encounter, they’re only in there for the very end, so to just kind of get a boost [from faculty that] … what you’re doing
throughout the majority of the encounter is the right thing is not very helpful. (S2, Para. 25)

This begs the question of how the grade can be accurate and appropriate if the faculty is not observing much of the testing, patient interaction, and communication between the student and the patient when most of the graded quantitative categories require some aspect of student/faculty interaction. The faculty must rely on their experience in patient care and teaching to know when testing needs to be repeated and when to trust the student’s results. In truth, unless the faculty is in the room the entire time—which is impossible—this will continue to be a challenge in the clinical grading paradigm.

**Subtheme 3: Faculty do not want to be the “bad person”**

The faculty at SCO are teachers. We want our students to perform at a high level and be the best doctors. The faculty are also human and have emotions. Telling a student that they are lacking in certain skills, have poor communication, or interpreted test results incorrectly does not come easily for some. Giving negative feedback or constructive criticism, from an emotional standpoint, can be painful for the faculty and difficult for the students to hear.

I don’t want to fail this student. I don’t want them not to like me. I don't want them to feel bad. I don’t want them to be sad. I don’t want to be the bad person but the sad part of this is, I think instructors forget that at their most basic level of employment, they are an instructor with the responsibility to assess and grade. (A2, Para. 67)

Giving poor feedback can also be uncomfortable and strain the student/faculty relationship if not done with compassion and empathy and interpreted by the student as the faculty trying to teach and be helpful. The future interaction possibilities between faculty and students can weigh heavily on the faculty member doing the grading and perhaps could lead them to not be as honest
and tough as needed as highlighted by A1: “Many faculty are reluctant to even point out negative things to students for fear of having to deal with the student face to face the next day in the clinic or the next week in the clinic” (A1, Para. 48).

**Subtheme 4: The level of orientation and guidance provided to students and faculty is not adequate.**

Prior to starting in the clinical programs, all students undergo an orientation to the physical building as well as the clinical processes and policies, including how the grading system works. This is done in a large lecture style format. Faculty are also provided an orientation, which is part of a larger orientation to the college. Since faculty hiring is sporadic, the orientation may be as part of a small group or solo. A prominent subtheme is the perceived lack of a proper orientation and guidance in grading provided to students and faculty. This was addressed by the students, faculty, and an administrator.

F2, a relatively new faculty member describes how he learned about the grading system and the frustration felt.

I felt a little just thrown in. I observed [patient care with students], I think for a day, with two different doctors. And they kind of gave me the ins and outs of how the [medical] chart works and how the grading works, just basically how to get into the system passwords, that type of thing. But they didn’t give me really any much insight other than me just watching them interact with students. (F2, Para. 150)

Two other faculty discussed a more formal program that occurred after they had been on faculty and grading students called the Rising Stars. The more formal education and orientation proved fruitful for the faculty in their comfort and understanding of the grading system.
They talked to us about how to grade and gave us maybe a couple of examples. So, it wasn’t anything very rigid. There weren’t a whole lot of guidelines, but there were a couple of examples of how like what would constitute a one or two or three [on the grading scale]. (F6, Para. 156)

F4 points out that the topic of grading had not been discussed formally or guidance provided in quite some time.

I was blown away a little bit that that [grading] was never discussed to me … before I even started grading students and I was like man, I’ve had months of doing this already. It was … just the basics of a little bit of history on why those things were, what each thing meant, what the admin kind of expects us to write in those boxes just to kind of give us our own freedom, but also kind of a like an idea of what to do. I honestly, I’m a little shocked that I’ve been on faculty 10 years and we have never talked about grading again. (F4, Para. 164)

The lack of a formal orientation and inadequate guidance is highlighted by both F1, a long-time faculty member that has administrative experience, stating, “I think the thing I don’t like about it [grading] is this a lack of comfort that faculty have, the lack of guidance that they get” (F1, Para. 181). A3, a long-time administrator who has faculty experience, corroborates that sentiment saying, “We have never provided consistent support to the graders. We don’t provide an orientation on how the system functions to new faculty. We don’t give them an overview of clinical grading” (A3, Para. 43).

The impact of these issues can be seen in the following comment, also by A3: “I hear from some of the younger faculty that you know, they struggle with decisions of discernment”
Despite this administrator being in a position to enact change to address this issue, it remains a sore spot for faculty and administration.

From the student side of the grading equation, these problems of poor understanding due to inadequate orientation exist as well. They highlight the lack of what they consider to be an adequate orientation, which explains not only how to use physically use the clinical grading system but what the various levels of 1, 2, and 3 actually mean and how they need to perform to be at those different levels. S4 highlighted the issue of a learning curve in understanding the clinical grading system and what the various levels on the scale actually mean in the following statement:

The 1, 2, 3 scale is easy to interpret if you figure out what each one means…. You know, the 1st 100 encounters I had, I was still like, what do these mean? And you have to like really sit down and look at it. But once you kind of get it to where you're like, “OK, I understand what’s going on here. (S4, Para. 129)

S1, a 3rd-year student who had been using the grading system for almost a year, focuses on not knowing what was considered met (expected performance) or below (poor performance) prior to starting the clinical aspect of the program. “I would appreciate kind of just like knowing before I started clinic, what type of things are gonna get me a below or met.” (S1, Para. 178)

S4 did not even recall being shown technically how the system worked prior to starting in clinic:

I really don’t recall any point where someone broke down the how things, how … [the patient] encounter system works, how we submit things, how we’re graded. I don’t have any recollection of any of those really being gone over to any level of detail. (S4, Para. 121)
The issues with the faculty and students on this front can, and do have, an impact on the ability of the system to be effective and used in teaching from the very start of clinical experiences. The comments made by all three parties demonstrate the need for more attention to be paid to both the orientation process and continual guidance and education on the topic of clinical grading. **Subtheme 5: There is a “veil of secrecy” over how the system works behind the scenes that impacts use and understanding of the grading system**

In the clinical grading system, after the grades are completed by the faculty member, the data is turned from a 1 to 3 scale into a 100-point scale. This happens automatically behind the scenes. Faculty and students are not made aware of how this takes place or the reasoning behind the process. They are also not aware what a met, below, or above expected means for the grade encounter. They are also not aware of the weighting of the various grading categories and how it changes between third and fourth year. While this information could be provided during the formal orientation, it is purposely hidden “so that it doesn’t introduce an observer bias in doing those gradings” (F1, Para. 181). This raises the question of why all faculty, regardless of their position or experience, are not shown exactly how the grading system works. If shown, this might alleviate some of the misunderstandings and confusion and allow the faculty to calibrate their expectations and grading.

The students, like the faculty, are unsure how the system works in the creation of the encounter and final grades. S5 is more global in her comment, saying, “I don’t totally understand how that works” (S5, Para. 9). S1, specifically tackles the “how” of the grade stating, “I don’t know like how it’s calculated or how you get met or below” (S1, Para. 101).

A1, in two separate comments corroborates the comments by the students that “there is a veil of secrecy over how grades are assigned” (F1, Para. 181). He stated, “I don’t know that
there’s a lot of explanation or transparency to the faculty as a whole into how the numbers get converted” (A1, Para. 47), and “I don’t think that faculty often have a good idea of how the numbers they turn in for clinical encounter grades eventually turn into a course grade” (A1, Para. 48).

There are challenges to clinical grading that are specific to SCO and those that are universal to clinical grading, regardless of the type of program. This theme focuses on the challenge of grading both globally and specifically related to the SCO system. The more general issues such as subjectivity in grading and the grader not wanting to be the bad person are challenging to address. SCO specific issues including the need for a more comprehensive orientation for the faculty and students, regular administrative guidance for the faculty, and removing the secrecy of the system would go a long way in improving and enhancing its use.

**Theme 5: The clinical grading system continues to evolve and grow to meet the needs of all parties**

The current clinical grading system has been in use for about 16 to 17 years, and it has evolved since that time to meet the needs of the administration, faculty, and students, and continues to evolve. For this evolution to continue, the grading system is examined regularly for potential improvements, so that changes take place as needed to ensure the needs of the administration, faculty, and students are met. Furthermore, all three interested parties have made suggestions for potential changes and perceived improvements to the current grading system like widening the numerical grading scale for better differentiation of performance, eliminating the need for feedback on certain types of patient encounters, improving the orientation, thereby providing a better understanding of the clinical grading system for the faculty and students, increasing the opportunity for the students to get more detailed feedback, and altering the
language used in the grading process. The concept of change in the clinical grading system is important since doing things how they have always been done in the past does not allow for process improvement to meet the needs of the administration, faculty, and/or students.

**Subtheme 1: The grading system continues to evolve to meet needs**

Having a grading system that is dynamic is quite important to all three administrators. A3 reported that the notion of a dynamic system was part of their plan all along: “Our goal was to look at it [the clinical grading system] and upgrade it every three to five years (A3, Para. 21) and “the product that we have today has gone through at least three significant revisions” (A3, Para. 35). A1 went a step further than the other administrators, stating, “There’s always been a continual push to change it and I think what we have now, I don’t think there’s been any backward steps” (A1, Para. 3) since the new system was implemented in 2005.

Changes to the grading system continued while this research was being conducted, further emphasizing its dynamic nature. A2 discussed the following a change to tracking patients to meet student needs for make-up purposes:

Yeah, so the most recent changes within days of this, was an account of [patient] experiences in any given course so that rather than being concerned that a student may have missed a day in excess of another student, now we bring it down to the amount of encounters which is another reason why an accurate count is really critical (A2, Para. 65).

In using the grading system to track types of patient encounters by service, the college was better able to document that all students were getting a similar number of patients by service specialty. This resulted in less of a need to have certain students make up missed days and enabled the college to say that the students were well-rounded and competent to practice.
Subtheme 2: Evolution needs to continue for program growth

As the current grading system went through a wholesale change many years ago but has continued to evolve since that time, it is logical that future changes can be made towards the goal of further improvement. All parties involved offered suggestions that, in their opinions, would make the system not only more user friendly but also have a better impact on learning. The faculty suggestions centered around changing the quantitative grading scale to allow for greater discernment of student performance, not having to give feedback on all encounter types, and a more formal orientation of the grading system in combination with education concerning best practices. The students focused on getting a higher level of feedback from the faculty and improving the language surrounding the grades.

For the faculty, one of the common requests was to alter the 3-point grading scale to a 5- or 7-point scale. They felt that it would offer a greater level of discrimination in performance as well as a better understanding for the student as to their individual performance. F1 attempts to rationalize the expanded scale using a statistical approach in the following statement, “I don’t see any sound statistical basis for having a 3-point Likert scale, a five or seven makes a lot more sense” (F1, Para. 178). While true in the abstract, interestingly, the previous grading system had a 5-point scale but upon making the switch to the new system in 2005, it was narrowed as the 0 and 5 scores were rarely used.

F6 makes the connection of a wider scale to the students having a better understanding of their performance. In theory, a wider scale would provide better differentiation on both the good and bad performance sides of the equation. “So instead of three, maybe having five, maybe a better way for the student to gauge where they are just from the us clicking that the number you know” (F6, Para. 197).
The next topic that came up repeatedly centered around the required feedback for every grade. According to faculty, the fact that they have to write something for every encounter is time consuming and leads to perfunctory or poor feedback. F6 does not appreciate having to critique the student on every exam grade. She alluded to the issue that grading is time consuming for the faculty.

But I don’t feel like, oh, you did a good job with a straightforward case that you didn’t even dilate, or you know, whatever, like, I don’t feel like I should be writing that out. Like, it should just go through and I should move on to the next one. (F6, Para. 159)

A1 advocated for limiting the need for critiques and makes the connection that the need to do so actually leads to perfunctory comments. These types of perfunctory comments are also mentioned by students above, indicating that they want more detailed, personalized comments:

I think the comments serve an absolutely essential purpose, but it would be nice if there was flexibility depending on the type of patient encounter and in terms of how strongly faculty were expected to write lengthy comments. I mean it is as we discussed, it’s much easier to do that if you’ve got a lengthy [eye] exam that’s complex versus a very quick exam that is all that is necessary, but almost perfunctory. That leads to perfunctory comments, particularly in the critique section. (A1, Para. 47)

Perfunctory comments, using the language from A1, are not productive and are possibly an outgrowth of the requirement of having to make comments on all exam grades regardless of type of eye exam or difficulty level. These types of comments are not helpful and negative in nature and may, in fact, be one of the reasons some students tend to check their grades less and less as they advance.
A1, a 30-year faculty member and administrator, goes a step further, alluding to the need for comments for only certain encounter types. This, in theory, would reduce the perfunctory feedback and make feedback, when present, more meaningful. A1 stated, “It would be nice if there was flexibility depending on the type of patient encounter and in terms of how strongly faculty were expected to write lengthy comments” (A1, Para. 47).

The administrators and faculty offered suggestions to alleviate several of the issues they confront in using the clinical grading system at SCO. F6, in discussing consistency in grading, stated, “I think it may be nice to have like a list of expectations” (F6, Para. 157). The absence of uniform expectations ties into the lack of an adequate orientation and development opportunities provided to faculty in regards to grading. A3 acknowledged this as an issue and suggested a more formal approach to orientation and allowing even established faculty to come get a refresher.

The whole, the whole system needs to be, as much as we every year in the orientation for rising third years, as much as we provide them with an introduction to the system, we should make that available on a on an annual basis at the same time to anyone who wishes to drop in and make it a requirement for all new faculty. (A3, Para. 139)

F6 took the need for faculty understanding of grading to the next step in suggesting formal learning and discussion amongst the faculty related to grading: “I think we should invite people in for faculty development to talk about grades and how we calibrate and how we do this, that or the other” (F6 Para. 187). This is a topic that I personally have advocated throughout my tenure at SCO. Having better guidance for clinical grading, in general, and about the SCO system, specifically, though education is a crucial step to not only a better understanding of how the grading system works but also the administration’s expectations for how it should be used.
The students also provided input on how to improve the grading system to meet their educational needs and improve their ability to learn from their clinical experiences. Currently, when students complete their patient encounter, they enter the patient’s demographics into the grading system and a request for the faculty to complete the grade is automatically generated. The students do not have the ability to ask questions or explain anything about the patient encounter through the grading system. Both student suggestions below would be done on the front end when the student submits the patient encounter to be graded by the faculty. The students would like more of an opportunity to get specific and meaningful feedback from the faculty within the grading system.

I want specific feedback on this patient … Can you [faculty] take some extra time … and then give me some specific feedback on that or hey, like I don’t have too much experience with scleral lenses? Do you have any articles, things like that to help me feel more comfortable? (F4, Para. 146)

Students would also like the chance to give the faculty member doing the grading more details about the patient encounter that might not have come up at the time of the eye examination.

Maybe just a box that it’s like general remarks about this exam if the intern would like to add anything. They don’t have to if it’s a straightforward …. But if it's a patient, for whatever reason, was very challenging, made things difficult for you or you struggled in anyway because of a certain thing and you would just like to relay that information to the staff doctor because maybe they didn’t see that or didn’t get any of that, especially when they came in. (S2, Para. 148)

In these requests, the students are looking for ways to enhance opportunities for two aspects of the experiential learning cycle, reflective observations, and abstract conceptualization.
The final suggestion centered around the language used to describe performance in the grading system, an issue acknowledged by administration even though they are at a loss as to how to address misperceptions.

One of the major flaws that persists today, despite educating and reeducating, is we use purposeful to terminology of meets expectations, exceeds expectations, and does not meet expectations, so, though we would avoid average and then pass and fail per encounter. We didn’t want a 1 to be a fail, but for some reason it’s still pervasive, perception, misperception, that a 1 is a fail on this grade. (A2, Para. 15)

In the creation of the current grading system in 2005, the language used in describing performance specifically left out the terms ‘average’ and ‘fail’ due to the negative associated connotations. Instead, the terms ‘meets expectations,’ ‘exceeds expectations,’ and ‘does not meet expectations’ (or ‘belows’ as they are referred to by the students) were chosen. A2 is lamenting the fact that despite carefully choosing the terms or language used, a grade of not meeting expectations is misperceived as a failing grade, when instead it is really indicating that the student has something to work on related to this patient encounter.

The students recognize the challenge in the language used and how it makes them feel. They offered some suggestions on possible alterations to the current system to address the perceived negative feelings and make them more positive. S2 suggested turning the negative connotation of the term “below” to something more positive, thinking that in just changing the language, the impact of the grade may be different.

Instead of using the term below, switch to something like opportunity or something that maybe would be more positive in helping the student not look at it as such a negative
thing, but realize that it’s actually, an opportunity to do something different or change how you act as a clinician in certain scenarios and with certain patients. (S2, Para. 55)

S5 highlighted that the terms used have a huge impact on the students and how they react to them, connecting grades to emotions and state of mind:

But I do also agree with S2 about the terms that are used. If you do have any kind of anxiety, they strike you, whether that’s met or below. Because even if you feel like you’re improving, you feel like you’re less than … [due to] those terms, whether they’re in the system or in a notification system, …like ‘you're at expectation,’ ‘you need improvement’ or even ‘below.’ So, like maybe some kind of intermediate where, or even just ‘could use improvement’ is better to me. (S5, Para. 59-60)

The system will no doubt continue to evolve to meet the needs of the administrators, faculty, and students in the future. It has gone through major and minor transformations over the years in the hopes of improving the educational experience and student outcomes. The suggestions made for future improvement may also lead to significant learning opportunity changes.

**Summary**

This chapter introduced and discussed the study findings. These findings highlight the following themes: faculty expectations develop with experience; the positive and negative impacts of faculty feedback on student learning; the variety of ways and reasons the systems is used by administrators, faculty, and students; how the subjectivity of clinical grading inhibits effective use; and how the clinical grading system continues to evolve and grow to meet the needs of all parties. The next and final chapter is a discussion of the findings in terms of the research questions along with future areas for research and recommendations for improvement to the SCO clinical grading system.
Chapter 5: Implications

This naturalistic and formative study was an evaluation of the clinical grading system at Southern College of Optometry (SCO), which is used in both the third and fourth years of the program by administration, faculty, and students. This chapter is a discussion of the findings and conclusions from this study. It is also a review of the purpose and significance of the study as well as the recommendations, limitations, and potential areas for future study.

Connecting the Findings to the Research Questions

The following research questions were posed for this study:

- How effective is the current clinical grading system as a method of grading and teaching at the Southern College of Optometry (SCO)?
  - How does the clinical grading system at SCO shape student learning and performance?
  - How does the current system used for clinical grading at SCO meet the Accreditation Council on Optometric Education (ACOE), administration, faculty, and students’ needs?

In looking at the three research questions posed, it would be easy to simply answer that the current clinical grading system is partially effective for grading and teaching, has a variable impact on shaping student learning and performance, and mostly meets the needs of the various stakeholders, but more detail is needed. For this process, the two sub-questions will be answered first, building them as a foundation to answer the main research questions. The first sub-question—how the clinical grading system used at SCO meets the Accreditation Council on Optometric Education (ACOE), administration, faculty, and students’ needs—will be tackled first. The answer to this question is found in several of the themes.
Theme 3 outlines distinct ways the grading system is used by each group, administrators, faculty, and students, as well as the overlap among the three groups. Administration has broader uses for clinical grading, including assessment and documentation of student performance for legal reasons, but also to meet the needs of accreditation. Administration also use it to evaluate faculty performance. Faculty and students both use grades for feedback on performance, but on opposite ends of the equation. Faculty provide the feedback as a means of teaching, and the students use it to gauge their performance and to gain new knowledge. The clinical grading process is a tool through which these undertakings occur, but it is by no means the only way faculty encourage critical thinking and reflection in students. Verbal feedback happens as well. The faculty spoke about providing both verbal and written feedback and how both types of feedback supported each other, especially in terms of students performing poorly. The students talked about having verbal interactions with the faculty in the moment and how that impacted their clinical learning. They also felt that faculty would often use the written feedback to support what was discussed verbally with them. Students and administration also use the grading program, which records patient demographics and diagnosis to track patient encounter data.

Theme 1 and Theme 4 show some of the weaknesses and limitations in the grading system that have an impact on its ability to meet needs and that cause frustrations for the three groups. The subjectivity and variability in faculty expectations are frustrating to the students. The level of orientation and guidance provided in using the system, as well as having a poor understanding of how the grading system works on both the front and back ends, is frustrating both to the students and faculty. The administrators confirm these frustrations as well and, in some cases, have attempted to address the issues.
Theme 5 brought up suggestions for further improvement of the system from all three groups. The desire for further change should not be interpreted as the system not working for the various groups, but rather that improvements could be made to suit the needs of all parties better. While there are inherent challenges in clinical grading globally and at SCO, the overall sentiment is that the grading system does in fact meet the needs of the various parties. There is room for process improvement and change, as a system that stays the same and is not examined through a needs-based lens becomes stale and obsolete.

The findings for the second research questions addressing how the current clinical grading at SCO meets the Accreditation Council on Optometric Education (ACOE), administration, faculty, and students’ needs come mostly from Theme 2. In Kolb’s Experiential Learning Theory (Kolb, 1984), which was modified to include clinical grading and introduced in Chapter 2, I connected the four stages of the cycle to different aspects of the patient care experience and how clinical grading can be seen through the experiential learning lens (see figure 2). If faculty were more aware of the cycle and the four stages, they could work with the students to encourage them in moving through the cycle successfully. The opportunity to provide written feedback is one tool that they have in this process. Administration should work with the students and faculty to enhance the opportunities for experiential learning in general and be aware of the cycle in creating time for the students to make their way through it. While the quantity of patient encounters is important on many fronts, the quality of the patient interactions and time with the faculty is just as crucial.

Even though the four stages are introduced as separate stages by Kolb, in reality, there is opportunity for constant movement within the cycle even while the patient is undergoing an eye examination. Reflection, one of the stages of Kolb’s (1984) experiential learning cycle, takes
place through faculty feedback, both verbal and written. While the written feedback is part of the after-exam experience in the grading system, verbal feedback can and should occur as the student works with the patient. For example, when the student does a set of testing and presents the proposed diagnosis and treatment to the faculty member, there is an opportunity for discussion in which the faculty member can offer their opinion and guide the student. Another example is when the student’s testing of the patient is checked by the faculty member. Not only does this offer the student the opportunity to watch proper procedure, the discussion of the result and how to interpret it in light of other data can be illuminating for the student. If the student then has the opportunity to practice that skill in the moment, which I personally insist upon, they are tapping into the active experimentation aspect of the cycle.

The goal is for constructive criticism to be offered, through which the student can reflect on their performance and grow as clinicians. It is natural to give specific verbal feedback and instruction as the student is making their way through the patient eye examination process, allowing for immediate reflection. With written feedback, as per the students in the study, often lacks detail and is more general in nature. Feedback that is rich and specific in detail builds student confidence, while feedback that lacks detail or is perfunctory does not enable reflection and hampers the impact of the clinical grading system on student learning.

The timing of the grading also takes away from the potential learning aspect as well. Considering the experiential learning cycle again and looking at the feedback and grades as an opportunity for reflection, the sooner that opportunity is provided to the students the better. Grades completed weeks later are considered “out of sight, out of mind” by the students. For example, students typically see 20-30 patients weekly, and if a grade is not completed for two to three weeks, they have to attempt to recall the graded patient and what took place during that
experience. Personally, I would find it quite challenging to do so in the midst of seeing more patients and studying for classes or boards. This delay essentially strips the student of the opportunity to reflect in a meaningful way.

Theme 1 also shows how the grading system can have an impact on learning. Faculty expectations of students generally change throughout the two years that the students are in the clinic. They change based on service, student experience, and patient difficulty. These expectations are individualized to the specific faculty member and are not standardized clinic-wide or even service-wide. While there are general lists of expectations built into the clinical service syllabi by the chiefs of service, the course masters for the clinical courses, these are not typically distributed to the general faculty and are not service-specific. These are, in fact, available to the students via an online learning platform, but students are not required to read them or even acknowledge that they have looked at them. The students nonetheless find it challenging to focus on seeing patients and meet the ever-changing and variable faculty expectations. Compounding this issue, as seen in Theme 4 (Clinical grading is subjective and has challenges that inhibit effective use), is the lack of an adequate orientation and guidance in using the system and not understanding how it truly works behind the “veil of secrecy” to produce a grade.

While the clinical grading system was designed to provide quality feedback to the students, in some cases, that is either simply not happening, or it is indeed happening, but the feedback is not viewed. In other cases, it is occurring, and the impact is felt by the students and faculty. Suggestions made by the administration, faculty, and students have the potential to increase the likelihood of the latter.
The answers to the two sub-questions lead to the following conclusion about the main research question: the clinical grading system at SCO meets the overall needs of the administration, faculty, and students. This finding supports the idea that the administration had about the current clinical grading system that even though some minor changes were needed and have been made to fine-tune the system to meet better the needs of the administration, faculty, and students, no significant changes were necessary or seem to be necessary currently. For the faculty, the system meets their general needs, but they have recommendations to remove barriers to (a) improve the quality of student feedback they provide, (b) enhance the potential for student reflection, (c) better understand how the system works, and (d) increase the consistency of how the faculty use the system. For students, it meets their needs, but they also made recommendations to remove barriers that hamper effective use of it in their learning process, limiting the opportunity for reflection. When looking at the clinical grading system through an experiential learning lens, the system is used to enhance student learning through reflection. However, the recommendations made are aimed at improving those opportunities for the students. Having an understanding of the experiential learning cycle, the opportunities for faculty teaching and student learning throughout the patient care experience, and how those opportunities can be enhanced is a crucial first step in clinical instruction at SCO.

Even though the ACOE guidelines for clinical grading allow for optometric programs such as SCO to craft its own system, based on the findings of this study, a general set of recommendations were formulated and are listed below. I hope these suggestions allow other programs to look at how they accomplish their clinical grading and encourage them to look at it through an experiential learning lens that emphasizes reflection. Feedback is vital to promote and
enhance reflection and must be included within every health professional clinical grading system, including optometry.

**Connecting the Findings to the Literature**

Many of the themes and concepts that developed from this research can be connected to the literature concerning clinical grading. As discussed previously in Chapter 2, there is a dearth of literature related to optometric clinical grading, so the connections will be made to other health professions, such as nursing, dentistry, and medicine.

**Expectations**

One of the main themes that emerged is related to faculty expectations, the development of these expectations, and their impact on student learning. In a review of the literature on evaluation, Orchard (1992, p. 302) identified six factors that had the potential to be barriers to the evaluation of student nurses’ performance in the clinic. Three of the factors link to expectations in some manner:

- The relationship between the complexity of the student’s clinical performance expectations and the degree of subjectivity of appraisals
- Evaluator’s expectations of student’s professional socialization
- Personal values of the evaluators

If clinical supervisors are indeed the “experts” at helping students learn the knowledge needed before graduation and serve to help fill in the gap between school and practicing (Sand et al., 2014), it is important to also acknowledge, at the same time, that evaluators are human and not perfect. As Herbers et al. (1987) concluded: “Evaluators may vary considerably in their abilities to discern strengths and weaknesses in residents, and they may apply different standards when judging a resident’s performance” (p. 202). While this quote references residents, it can be
inferred that the same could be true about judging student performance. Herbers et al. (1987) went one step further, making the connection to expectations: “Evaluators may be positively or negatively influenced in their assessments of residents because of expectations or biases” (p. 202). This quote aligns with the expectation issue in this study: faculty members, including those at SCO, each have different expectations for their students that developed over their careers based on their own clinical experiences and instincts (Krichbaum et al., 1994). Faculty may emphasize different aspects of performance (Gingerich et al., 2017), disagree on treatment philosophy, and differ on the choice of testing procedures. What one faculty member deems as an acceptable skill level or diagnostic ability, another may not.

Another issue identified in this study is that faculty expectations are dynamic. The faculty in the focus group offered that they altered their expectations based on the student year, the service in which they were seeing patients, and the difficulty level of the patient. Kern and Mickelson (1971) identified different objectives or expectations for physical therapy students based on their year in the program. Mays (1973) found that the importance of various aspects of the examination process also changed with the faculty evaluating physical therapy students. While basic knowledge and the ability to write notes were vital as a junior, in the senior year, critical thinking and interpersonal relations were of greater importance. While the grading system at SCO does in fact alter the importance and weighting of various aspects of the grading categories between the third and fourth years; this is part of the “veil of secrecy” to which the faculty alluded. According to one of the administrators, not allowing the faculty to know that a change takes place in the weighting of categories, and what that change is, was done so as not to inject bias into the grading process. Consideration should be given to whether this policy should
be revisited and allow both faculty and students a better understanding of the grading system’s inner workings.

The issue of expectations changing with patient difficulty was questioned in relation to the validity and reliability of assessing the performance in legal education by Grimes and Gibbons (2016). Their question was in regard to legal clinics and clients of varying type and difficulty, but the concept is the same with optometry. Patient difficulty links to the service in which the patient is examined as well. For example, a patient who has an eye tracking issue may be deemed as easy by faculty experienced in such conditions but considered challenging by faculty who are more experienced with retinal disease. Those faculty members typically work in different clinical services at SCO and, based on the focus group, have different expectations for the student based on the perceived difficulty of the patient and the service in which they were seen.

The influence of changing or unclear expectations voiced by the SCO students was also a concern in a study by Rafiee et al. (2014) of nursing students and instructors. One student stated the following, which could easily be heard coming out of the mouth of an optometry student in this study’s focus group.

Each instructor has his/her own special rule. Each instructor acts as she/he wishes. We don’t know what the nursing instructors want us to do. We don’t know what we are supposed to learn since the instructors score the students based on their speculations. (p. 46)

Overall, unless graders are using the same standards in grading based on a specific set of parameters and are outlining those expectations to the students, there is bound to be confusion and variability in outcomes. This is an issue in many professional programs where clinical
grading plays a part in the educational process. Many of the issues that emerged in this study related to expectations are of concern in other health professions as well.

**Feedback**

Even though there are connections between feedback and reflection, there is a lack of literature on the use of feedback in a formal grading situation. Taylor and Hamdy (2013) discussed adult medical education and the use of feedback in assessment. They indicate that “any assessment system will provide learners with an indication of where they are going wrong, and which areas they should focus on for clarification of their understanding” (p. e1569). The role of the educator, in their opinion, is to inspire reflection via written feedback. It is the written feedback aspect of the SCO grading system that I believe fulfills this requirement. The quantitative 1 to 3 scale in the SCO system simply gives a grade for that aspect of the clinical experience, but it is the qualitative feedback in the form of what the student did well and what they need to improve that has the potential to spur on student reflection and learning. The concept of clinical grading being used as a method of reflection toward the building of knowledge and clinical skills is lacking in the health profession literature and is absent in the optometric literature. Since good-quality feedback in clinical grading has the potential to lead to reflection, and reflection is part of the cycle of experiential learning (Kolb, 1984), it is logical, in my opinion, to connect clinical grading with experiential learning. Viewing clinical grading through an experiential learning lens has the potential to produce a greater number of opportunities for student learning and growth while enabling the optometric program to fulfil its needs and those of its stakeholders.

One of the big themes that emerged in this research centered on faculty feedback having a positive and negative impact on the learning opportunity afforded through the clinical grading
system. As Dennick (2012) concluded, “Reflection is fundamentally enhanced by feedback … Feedback can enable the learner to analyze their actions and understanding and to plan for future learning” (pp. 621-622). However, based on the student focus groups in this study, the lack of feedback or low-quality feedback can also have a negative impact. The students participating in the focus group indicated that lack of feedback, poor quality of feedback, and poor timeliness of grades caused them to decrease how much they looked at their grades and even caused them to think less of certain faculty. If one of the goals of the clinical grading system is to provide feedback on which students can build confidence and learn from or reflect on what they did well or poorly, providing high-level, specific feedback with actionable points is crucial. The concept of the negative impact of the faculty feedback relates to Kolb’s (1984) theory of experiential learning—specifically the reflection part of the cycle. Students discussed the negative impact of the feedback they received and how it did not enhance their reflection, but instead hampered it; this indicates that the reflection link in the experiential learning cycle broke due to the lack of or poor quality of the feedback. Several studies have examined the characteristics of the feedback made in medical clinical grading. Canavan et al. (2010) collected 970 surveys of clinical performance from 256 observers. In 210 surveys, comments were considered to be non-behavioral or global assessment and contained comments on the individual’s traits or attitudes (fantastic guy, great physician, etc.). Specific behaviors or instances of behaviors were commented upon in 102 surveys. Comments offering strategies for improvement were both general (33 surveys) and specific (26 surveys) in nature. Based on the findings, the authors stated, “Most feedback comments were positive, self-oriented, and lacked actionable information that would make them useful to learners” (Canavan et al., 2010, p. 106). The SCO students in the focus group highlighted the issues with feedback quality and how the poor feedback that they
received led to them not using the system for personal growth. Like in study by Canavan et al. (2010), the students in this study complained of feedback that was general in nature, that lacked specific areas of weakness on which to focus or the potential for improvement, and that was repetitious in nature.

Pulito et al. (2006) reviewed evaluation forms from medical students’ clerkship rotations. Of the 331 forms analyzed, 115 contained no written comments. The remaining 216 forms contained 1,056 specific comments. The top comment-garnering category by far was professionalism/dependability (412 comments), followed by surgical/medical knowledge (88 comments) and communication skills with other health care professionals (78 comments). Not one comment was made concerning history taking and physical examination skills, ordering or lab tests, or surgical technical skills; these are actionable areas for growth in which specific feedback would prove most beneficial to student growth. Comments related to these three topics would likely have the greatest impact and opportunity to enhance reflection.

Lye et al. (2001), in a study of pediatric medicine clerkships, collected 261 evaluations on 157 students. Thirty-four evaluations were eliminated due to lack of comments or a statement by the evaluator that they were “unable to judge the student’s performance” (129). Of the remaining 227 evaluations, 1,017 comments were analyzed. Comments categorized under learner and personal characteristics accounted for 519 (51%) of the total comments made, followed by overall clinic performance (95) and knowledge base (70). Only 311 (31%) comments were related to clinical performance, and only 134 of those offered specific details.

The results of these two studies match those of Canavan et al. (2010): low-quality feedback is not productive and offers little opportunity for student reflection and growth. One interesting statistic from Lye et al. (2001) is the high number of evaluators who admitted that
they were not able to judge the performance of the student. While the paper does not surmise why this might be, perhaps it is related to the fact that the evaluator is typically not with the student and the patient at all times. This was an issue found in the current study as a challenge related to clinical grading.

One topic that emerged from this study related to feedback was timeliness. The SCO students indicated that one of the barriers to getting and incorporating the feedback into their practices was that there was often a delay in when they would get that feedback. In some cases, students waited weeks for their grades to be completed. Timely feedback is listed by Romani and Krackov (2012) as one of their 12 imperatives for feedback. If provided too late for the student to make use of it, it potentially becomes less relevant (Wiggins, 2012). The student has already moved past that experience and has seen a multitude of other patients on which their attention is focused and for which feedback may have been timelier. The poor timeliness of the feedback has the ability to stop or to hinder the experiential learning cycle (Ledvinka, 2006), which has an obvious impact on the learning opportunity.

As discussed by the students in this study, clinical grading has the ability to give them confidence and to build them up emotionally. Skinner et al. (2016) found that students’ confidence and interpersonal skills improved following experiential learning opportunities. By giving constructive criticism, the hope is that it will boost self-esteem and motivation. There is always the worry that negative criticism may detract from this goal, but this should not stop the faculty member from providing the needed feedback (Wells & McLoughlin, 2013). In contrast to the concept of negative feedback having a negative impact on student confidence, Clynes (2008) found that negative feedback did not have a negative impact on the mentor/student relationship. Plakht et al. (2013) found that “students suggest that a good supervisor is someone who provides
constructive criticism rather than allowing inaccurate practice to continue” (p. 1267). Clynes and Raftery (2008) reported that students exhibit maturity in their appreciation of the importance of receiving feedback and value the chance to focus on noted weaknesses to improve practice. This concept was echoed by the SCO students on several occasions. Several students acknowledged getting critical feedback, which might have stung at first, but they realized that the feedback was meant to help them recognize their weaknesses and offer the opportunity for growth.

According to Kohn (1994), “The best evidence we have of whether we are succeeding as educators comes from observing behavior rather than test scores or grades” (p. 4). Yorke (2003), in discussing formative assessments, under which clinical grading would fall, asks two questions regarding effectiveness, one of which is whether the assessment influenced behavior. This topic was addressed briefly by several of the faculty members in this study. They indicated that they had indeed seen a shift in behavior as a result of the formative assessment, the clinical grades. I have seen these changes personally as well. This is an indication that at least some of the time, the students were indeed reading their grades, reflecting on what was written, and making beneficial changes in their knowledge or skills.

Subjectivity and Challenges

The theme that encompassed subjectivity in grading and challenges that inhibit effective use contains subthemes that are evident in the literature. Subjectivity in clinical assessment or grading is not an issue limited to an optometric curriculum such as SCO’s. Even though the grading system was designed to be objective, it definitely struggles to be anything but subjective. Grading is based on values, experiences, and expectations, which are personal in nature, as was discussed previously (Dolan, 2002). In a qualitative study of 11 clinical nursing faculty by Amicucci (2012), the term “gray” was specifically used by nine of the participants in their
discussion of clinical grading. In this study, three of six faculty members and all three administrators used the term “subjective” to describe clinical grading.

Not only can the subjectivity affect the reliability and credibility in the assessment system, it also has the potential to impact learning negatively, as the students’ takeaway is that the system is arbitrary, and they subsequently devalue it (Taylor et al., 2013). The subjectivity or changing expectations was a notable frustration for the SCO students and played a part in their lack of use of the grading system as their training progressed.

Connected to subjectivity is the ability of the faculty to assess everything that takes place in the patient encounter. Pulito et al. (2006) asked medical student preceptors to rate, out of ten, how effectively they witness or infer from other performances and their ability to evaluate each of the 11 performance categories. Professionalism/dependability, knowledge, and clinical reasoning/judgement were rated as observable. Categories such as basic clinical skills, history/physical examination skills, and interpersonal skills with patients were considered usually not observable and the most likely to be difficult to evaluate and inferred from other performance. The issue with the faculty member not being in the room is a barrier to effective grading as per the SCO students. This impression is supported by Canavan et al. (2010) in a study of medical residents. It was specifically noted that 8.2% of surveys contained comments remarking limited or lack of exposure or hearsay in the grading process. While in a perfect world, the faculty/student ratio would be 1:1, with no division of attention, that is all but impossible. At SCO, the ratio is typically 1:4, which is fairly standard throughout clinical optometric practice. It is simply impossible, as shown by Pulito et al. (2006), to observe every aspect of the examination process, leading to an even greater level of subjectivity injected into the clinical grading process.
Another challenge in clinical grading assessment that is by no means limited to SCO is that those individuals doing the grading hesitate to fail deserving students. Essentially, nobody wants to be the bad person. Duffy (2004) found that preceptors continued to pass students, allowing the student’s personal issues to cloud their judgement. Dudek et al. (2005) identified four major barriers to failing medical trainees (students or residents), including lack of documentation, lack of knowledge about what specifically to document, anticipating an appeal process, and lack of remediation options. Other reasons for not failing students include lack of staff training or inadequate support, negative consequences for those doing the grading including potential litigation, hostility and manipulation by students, staff shortages (Bush et al., 2013), and hesitation on the part of the preceptor to identify or to resolve the concerns early enough in the clinical rotation (Luhanga et al., 2008).

Failing a student can be emotionally stressful and can conjure feelings of loneliness for the faculty member. This is especially true for novice or part-time faculty (McGregor, 2007). On the positive side, in a survey of 390 nurse faculty, “nearly half the sample reported changes in their teaching practices following the deliberation to assign a failing grade” (Couper, 2018, p. 136). The changes made were in areas related to communication, remediation, documentation, and professional growth, among others. While failing a student can be a challenge, the opportunity to alter behavior and to grow from the experience is not limited to the student.

**Not Understanding the Clinical Grading System.** Not understanding the clinical grading system appeared in the data from all three groups. The student and faculty frustration focused on a lack of training and having to determine on their own what the different quantitative variables mean. The faculty also expressed an issue with the lack of guidance in grading and how to set their expectations. The administration corroborated the lack of training and guidance on a
continual basis after the initial onboarding process of both students and faculty. In a study of nurse assessment, one theme that arose was a poor understanding of the assessment tool, despite a required training. This concern was voiced by both the students and faculty (Calman et al., 2002).

McDonald (2016), in a discussion of grading fairly and consistently, highlights the idea of discussing grading criteria with all graders in order to align perceptions of the grading system and bring consistency to perspectives. He suggests giving a few samples for grading, comparing the grades, and then discussing the grading criteria. Clement and Raleigh (2021) reviewed 38 studies on nursing clinical assessment. They recommend regular training and peer review. Alpine et al. (2021) performed a before-and-after study with 58 nursing instructors. The participants watched videos of poor and good performance and graded performance on several factors. They then underwent a training and a discussion of the criteria and the videos that they previously graded. They were asked to reconsider their grades if they felt it was appropriate. About 50 to 55% of the participants changed their grades. Interestingly, a larger number changed their scores in the negative direction, lowering scores, both for the poor (53.5%) and good performance (37.4%). There was a four-times-greater chance of the good performance score going up in contrast (12.9% vs. 3.1%). The authors showed the immediate impact of training on grading outcomes, including reliability and validity. Proper orientation and continued training and guidance is a must in order for an assessment system to function effectively (Clement & Raleigh, 2021), especially as the faculty changes from year to year. Having routine training would also help reduce errors and grade inflation, a concern in the assessment process (Paskausky & Simonelli, 2014).
Limitations

As there are more than 270 students in the third and fourth year in the SCO population, despite attempts to get a wide variety of input based on academic standing, I struggled to get participation in the focus groups, but I ultimately succeeded. The question of whether the opinions expressed by this group of students truly represents the greater number of students is a potential limitation. The same question exists regarding whether the group of faculty members selected represents the greater opinion and is also a potential limitation. Since the focus group contained a variety of faculty based on service and years at SCO, this is less of a concern. Another limitation related to the students in the focus group. The 4th-year students were all in the final semester of their final year and were quite close to graduation. The question as to their being comparable to a student earlier in their fourth year is a potential limitation. A potential limitation for all groups is comfort using Microsoft Teams, but since this study was conducted after the pandemic, during which individuals gained significant time using this meeting software, this limitation should be minimal.

Recommendations Based on the Study

One of the goals of this study was to make recommendations to the administration for potential changes to improve the functionality and impact on learning of the clinical grading system at SCO. Based on the three interviews and two focus groups, the following recommendations should be considered:

- An enhanced orientation on the clinical grading system for all new faculty should be initiated to ensure a good understanding prior to grading students. This would include case examples based on the services in which the faculty would spend a significant amount of time, a detailed orientation on the history of the grading system, how it works,
including category weighting changes between third and fourth year, and a better understanding of the grading expectations from an administrative viewpoint. The orientation period would also include a review of a new faculty member’s grades to catch and correct inconsistencies, as well as to provide guidance as new situations arise, throughout their first year of teaching.

- A regular discussion of the grading system by the faculty as a whole, including enhanced guidance from the administration, should be initiated and done yearly. This should include a better understanding of how the grading system works behind the scenes for the faculty and a series of examples to encourage discussion on grading expectations in order to reduce subjectivity and variability. This would allow faculty to be immediately aware of any changes made to the grading system.

- Eliminate the requirement for feedback on certain types of follow-up eye examinations like simple dilated fundus examinations, spherical contact lens checks and basic examinations, reducing the number of perfunctory comments like “good job” and “well done.” This will allow students to focus more on feedback that enhance learning and reflection and not have to sift through to find such comments. This will also allow faculty more time to spend making feedback on encounters to enhance learning and student reflection. Another consideration would be to add the option of “NA” for the quantitative categories since one of the challenges is that the faculty are not present for the entire patient encounter.

- An enhanced orientation on clinical grading for all students, including case examples of what the various levels (1-3) equate to clinically, how the grading system works, and how they can use it for learning purposes, should be initiated to ensure a good understanding
prior to starting patient care in the third year, as well as a follow-up to ensure an appropriate level of understanding as they progress throughout their careers.

- Require all faculty members to write and deliver to students, prior to working with them, detailed expectations for patient care. If the faculty member’s expectations vary based on the student’s experience (third or fourth year) or on the service in which the care is delivered, they should be prepared with different versions of their student expectations.

- Written faculty feedback to students should corroborate and support their verbal feedback and be as specific and detailed as possible. Faculty should attempt to include resources such as articles, online videos, and websites to encourage students toward life-long learning and enhance the ability for reflection.

- Clinical course syllabi expectations should be updated and made as service-specific as possible. The syllabi must be shared with both the faculty and students so that they can coordinate service expectations with their own. The service expectations should be presented during student orientations.

- Add opportunities for the students to ask questions of the faculty within the grading system. As indicated by the students, this would enhance their ability to use the system for learning. This would be a key step to take to help the students in the reflection phase of the experiential learning cycle as the questions are essentially a first step as they have already reflected about the patient experience and would already be asking for more explanation and resources.

- Require all grades to be completed within a short time period (within 3 business days) to enable students the maximum level of reflection.
• Require all grades to be acknowledged in some manner by the students, especially grades marked as “below expected.” Ensuring that students are seeing their grades, good and bad, increases the likelihood that they see the feedback and consciously or subconsciously have the opportunity to reflect on what written feedback from faculty.

• Increase the importance of clinical grading in the faculty evaluation with an emphasis on grading as teaching. If the mission of the college is to educate students, and clinical grading is a means of doing so, then not completing that task should be punitive to the faculty. While it already is on some level, perhaps that is not enough, and the importance of properly completing clinical grades should weigh heavier in the annual review process.

The above bullet points are specific to improving the clinical grading system at SCO, but they can also be used by other colleges of optometry to ensure that they learn from the ways in which SCO can improve. The following are some checkpoints for other colleges to consider in looking at their own grading systems.

• A clinical grading system must have consistent and timely summative feedback for the students that can be used for reflection. This is done for the student’s learning benefit and the college’s ability to assess student performance, as well as legal documentation of that performance, good or bad.

• Expectations for performance as relates to clinical grading should be provided to the faculty and students and be as objective and specific as possible. This will reduce variability in the grading output, allowing a more consistent educational product.

• An understanding of the grading system, including an orientation, should be provided to the students and faculty prior to using the clinical grading system. Regular
guidance must be provided by administration for the faculty in how to use the system and how the faculty is performing in the task of clinical grading.

- The clinical grading system must include the ability for the students to ask questions and to obtain feedback that is meaningful, which enhances self-learning and self-reflection.

**Areas of Future Study**

My initial goal as the researcher was to standardize clinical grading in optometry. While this goal was quite lofty and always remains a goal, it was important to understand better how clinical grading was being done at SCO. Further study at SCO should take place with a greater number of faculty and students to get a wider array of opinions and feedback using what has been learned in this study as a template for guidance. Other future studies could include a comparison of clinical grading at sister institutions to understand better how they accomplish the grading process and how their systems developed to their current status.

**Personal Reflections**

This section is written in the first person as it reflects my personal experience in this research. Before taking part in this research, I became concerned about my bias regarding the grading system, as I am a part of it. I use this system clinically and administratively almost on a daily basis. I have my own thoughts on what works and what does not. I have had casual talks with faculty and students over the years about what they think works and does not work as well. I asked myself, how could I, as the interviewer and eventually as the one doing the analysis, not be led to see what I wanted to see? Would my role at SCO taint the research? Instead, as I was involved in the study, I saw how my role at SCO was a positive and gave me insight into what I heard during the interviews and focus groups. I have an innate understanding of the system that
someone who was not using it would not have. I believe that this enabled me to ask better
follow-up questions to gather more details and to see patterns in the coding more effectively. For
example, since I, too, have different expectations for students based on their experience level, I
was able to recognize those comments easily during the faculty focus group. Over the years, I
have also heard the students complain about waiting to get grades back from the faculty and that
some faculty repeated comments over and over. These experiences enabled me to have a quicker
understanding of those issues as having a negative impact on learning and to recognize them as
limits to the use of the clinical grading as a teaching tool.

The themes that developed were honestly not a shock to me, as I had some of the same
concerns. I was able to learn so much from the study participants in how they use the grading
system and what they take away from it, however. I gleaned ideas from the faculty on how to
improve my own grading practices. I gleaned ideas from the students on how to serve them
better through the grading process. There were several a-ha moments during the interviews and
focus groups that have already had a profound impact on my approach to grading. Since the
focus groups, where I listened to how the faculty express their expectations to students, I have
been much clearer on expressing mine. While I have not gone as far as creating written
expectations for every semester in every service like one faculty member, I have started a written
document of my own general expectations. I also listened to the students and their desire for
specific feedback and links to resources. I have gone out of my way to find resources to include
in the feedback that I give. This better supports the treatment that we provided and encourages
self-reflection on the part of the student.

It was also illuminating to see the connections between what the students and
faculty/administration were saying. In some cases, they expressed similar concerns, like the lack
of understanding and training, but on others, they spoke about the same topic from opposite sides of the equation, such as with changing expectations.

Overall, I have learned so much about the clinical grading system at SCO. While some might abhor the research process, I loved it. Yes, it was tedious and time-consuming, but seeing the themes and subthemes take shape was almost like watching one of my kids develop physically, cognitively, and emotionally. I am pretty sure that my wife did not find the same enjoyment in the process and listening to my daily explanations and exclamations of the findings. My hope through this research is to pass along my a-ha moments to the faculty and administration and to see change take place to improve an already good system.
References


engagement. In CTSA Community Engagement Key Function Committee Task Force (Eds.), *Principles of community engagement* (pp. 161-182). National Institutes of Health.


Appendix A: Informed Consent Example

APPENDIX: INFORMED CONSENT FORM
FOR SOCIAL SCIENCE RESEARCH
University of Memphis

Title of Project: Clinical Grading in an Optometric Program

Principal Investigator: Marc B. Taub, OD, MS (EdD student), 1225 Madison Ave Memphis, TN 38104: mtaub@sco.edu (O): 901-722-3353, (C): 901-481-7661

Advisor: Edith Gnanadass, College of Education, University of Memphis, 123 Ball Hall, Memphis, TN 38152, gnnadass@memphis.edu, 347-489-5725

Purpose of the Study: This study will evaluate the effectiveness of the clinical grading system at SCO as a means of grading and teaching, how it is being used by faculty and students, if it meets the needs of program’s stakeholders, and determine potential improvements that can be made to it.

Procedures and Duration: I would like you to participate in one one-on-one interviews (admin) that will last about 90 minutes or a focus group (faculty and students) that will last about 120 minutes. The interviews/focus groups will explore your experiences using the clinical grading system at Southern College of Optometry. To best honor our conversations, I will record the conversations on a digital recorder to help me when transcribing the interview on paper. I may need to ask you to review the transcript of the interview to ensure accuracy.

Compensation: You will not be paid for participating in the study.

Benefits: The result of this study is intended to add to the scholarship regarding clinical grading in optometric education. As a participant, you might learn more about yourself and how you use the grading system in your educational environment. You also might get a better understanding of your own life experiences and might realize how others have similar experiences as you. You may gain a better understanding of how others use the system and how you might alter your practices. As the improvement of the clinical grading system is desired, your input may have a positive impact on optometric education at both SCO and the more global community of optometric education.

Statement of Confidentiality: Your participation in this research is confidential. The data will be stored and secured on my computer and on OneDrive in a password protected file. In the event of a publication or presentation resulting from the research, no personally identifiable information will be shared, as your identity will be anonymized.

Voluntary Participation: Your decision to be in this research is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer. Refusal to take part in or withdrawing from this study will involve no penalty or loss of benefits you would receive otherwise.
Right to Ask Questions: You have the right to ask questions about the research. Please contact me, Marc Taub, at (901-481-7661) with questions or concerns about this study. Refusal to take part in this research will involve no penalty or loss of benefits you would receive otherwise or are entitled.

You must be 18 years of age or older to take part in this research study. If you agree to take part in this research study and the information outlined above, please sign your name and indicate the date below.

You will be given a copy of this consent form for your records.

_________________________________________  ________________________
Participant Signature  Date

_________________________________________  ________________________
Person Obtaining Consent  Date
Appendix B: Student Focus Group Guide

1. How does the clinical grading system work at SCO?

2. How do you use the grading system?
   
   How long do you spend logging a patient encounter?
   
   How often do you look at your grades?

3. Describe an example of what you consider to be good or bad feedback that you have received?

4. Describe an experience when you incorporated the feedback you received into your practice.
   
   How did that feel?

5. Describe an experience when you did not incorporate the feedback into your practice?
   
   Why did you make that choice?
   
   How did that feel?

6. What are some of the lessons you have learned or actions taken as a result of receiving written feedback through the grading process?

7. What are some of things you like about the current grading system at SCO?

8. What are some of things you dislike about the current grading system at SCO?

9. What are some reasons for clinical grading?

10. If you could create a grading system, what would it look like and why?
Table 5

How the Student Focus Groups Guidelines Align with Research Questions

<table>
<thead>
<tr>
<th>Interview Questions and Sub-Questions</th>
<th>RQ1: How effective is the current clinical grading system as a method of grading and teaching at the Southern College of OPTOMETRY (SCO)?</th>
<th>RQ2: How does the clinical grading system shape student learning and performance?</th>
<th>RQ3: How does the current system used for clinical grading at SCO meet the Accreditation Council on Optometric Education (ACOE), administration, faculty, and students’ needs?</th>
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Appendix C: Faculty Focus Group Interview Guide

1. What are some of the reasons for clinical grading?

2. How does the grading system work at SCO?

3. How do you use the grading system?
   - How long do you spend grading a typical student?
   - How do you do your grading?

4. What do the three grading levels (1-3) mean to you?
   - What are some of the things someone has to do to get a level 1?
   - What are some of the things someone has to do to get a level 2?
   - What are some of the things someone has to do to get a level 3?

5. How do you determine or come up with this breakdown in grading?

6. Describe an experience when you could tell that a student has incorporated the feedback you gave into their practice.
   - How does that feel?

7. Describe an experience when a student has not incorporated the feedback into their practice?
   - How does that feel?
   - Have any of you confronted a student who clearly did not incorporate your feedback? If so, tell me about it.

8. Does the fact that the student has or has not incorporated feedback impact future grading or feedback with the same student? If so, how?
   - What about future clinical interactions with the same student?
   - Has this impacted how you have given other students feedback? If so, how?
9. What are some of the lessons you have learned during the process of giving written feedback through the grading process?

10. What are some of things you like about the current grading system at SCO?

11. What are some of things you dislike about the current grading system at SCO?

12. If you could create a grading system, what would it look like and why?

Table 6
How the Faculty Focus Groups Guidelines Align with Research Questions

<table>
<thead>
<tr>
<th>Interview Questions and Sub-Questions</th>
<th>RQ1: How effective is the current clinical grading system as a method of grading and teaching at the Southern College of OPTOMETRY (SCO)?</th>
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Appendix D: Administrator Interview Guide

1. Can you provide some historical perspective on the creation of the current grading system at SCO?

2. What are some of the reasons for clinical grading?
   - How does the college use the clinical grading system?
   - How do you use the grading system in your administrative role?

3. What do the three grading levels (1-3) mean to you?
   - What are some of the things someone has to do to get a level 1?
   - What are some of the things someone has to do to get a level 2?
   - What are some of the things someone has to do to get a level 3?

4. How did you determine or come up with this breakdown in grading?

5. What are some of things you like about the current grading system at SCO?

6. What are some of things you dislike about the current grading system at SCO?

7. If you could create a grading system, what would it look like and why?
Table 7

How the Administrator Interview Guidelines Align with Research Questions

<table>
<thead>
<tr>
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Appendix E: Institutional Review Board Approval

Institutional Review Board
Division of Research and Innovation
Office of Research Compliance
University of Memphis
315 Admin Bldg, Memphis, TN 38152-3370

January 21, 2022

PI Name: Marc Taub
Co-Investigators:
Advisor and/or Co-PI: Edith Gnanadass
Submission Type: Admin Withdrawal
Title: Clinical Grading in an Optometric Program
IRB ID: PRO-FY2022-282

From the information provided on your determination review request for “Clinical Grading in an Optometric Program,” the IRB has determined that your activity does not meet the Office of Human Subjects Research Protections definition of human subjects research and 45 CFR part 46 does not apply.

This study does not require IRB approval nor review. Your determination will be administratively withdrawn from Cayuse IRB and you will receive an email similar to this correspondence from irb@memphis.edu. This submission will be archived in Cayuse IRB.

Thanks,

IRB Administrator
Division of Research and Innovation
Office of Research Compliance
315 Administration Building
Memphis, TN 38152-3370
P: 901.678.2705
F: 901.678.4409